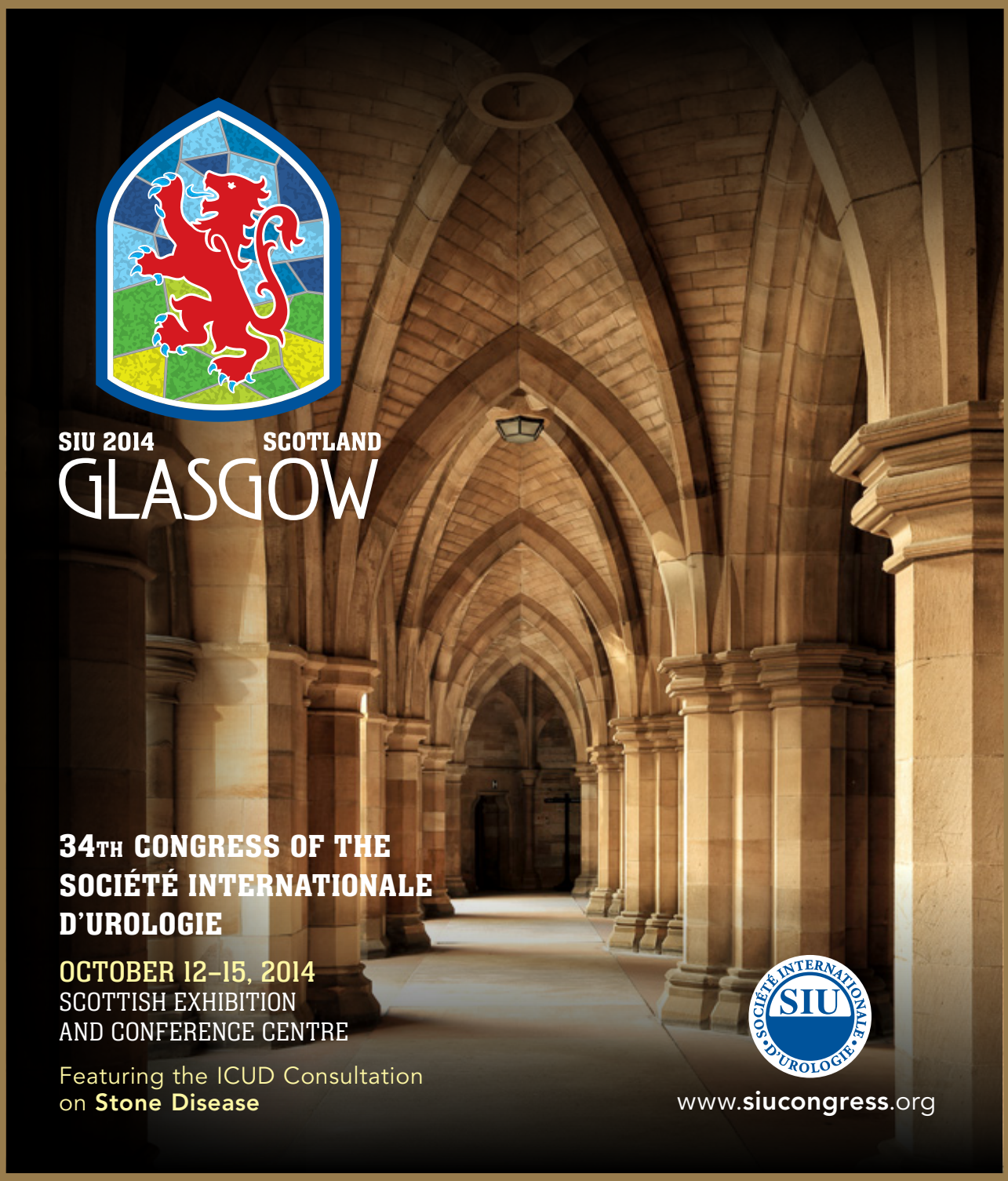
VOLUME 84, 4 SUPPLEMENT 1, OCTOBER 2014

UROLOGY

ELSEVIER



Astellas is a Global Category Leader in the field of Urology, committed to urologists – through education and research – and dedicated to the delivery of accurate, balanced medical information. We continue to focus on areas of high unmet medical need in Urology through our extensive research and development programmes.

Astellas is dedicated to improving the lives of people around the world through the introduction of innovative and reliable pharmaceutical products.

Visit Astellas at Stand #20 at the 34th Congress of the Société Internationale d'Urologie (SIU).

www.astellas.com

VSO/14/0052/EU
Date of preparation: July 2014

UROLOGY
ONCOLOGY
TRANSPLANTATION
DERMATOLOGY
ANTI-INFECTIVES
PAIN MANAGEMENT

astellas
Leading Light for Life

SIU 2014 SCOTLAND

GLASGOW

34TH CONGRESS OF THE SOCIÉTÉ INTERNATIONALE D'UROLOGIE

OCTOBER 12–15, 2014

SCOTTISH EXHIBITION AND CONFERENCE CENTRE

34th Congress of the Société Internationale d'Urologie

October 12-15, 2014

Glasgow, Scotland

Featuring the ICUD Consultations

on Stone Disease

Scientific Programme Committee

CHAIRS

Inderbir S. Gill, USA

Margit Fisch, Germany

MEMBERS

Shiv Bhanot, UK

Andre Cavalcanti, Brazil

Shin Egawa, Japan

Peter Hammerer, Germany

Badrinath Konety, USA

Pilar Laguna, Netherlands

Hing Leung, UK

SOCIÉTÉ INTERNATIONALE SIU D'UROLOGIE

William Lynch, Australia
Robert Pickard, UK
Pradeep Rao, India
Saeed Samnakay, Kenya
Richard Santucci, USA
John Seigne, USA

REVIEW COMMITTEE

The SIU wishes to extend its gratitude to the urologists who contributed their time to review abstract submissions for the 34th SIU Congress

Paul Abrams, UK
Rolf Ackermann, Germany
Hideyuki Akaza, Japan
Peter Albertsen, USA
Karl-Erik Andersson, USA
Daniela Andrich, UK
Kenneth Angermeier, USA
Gopal H. Badlani, USA
Demetrius Bagley, USA
Edgardo F. Becher, Argentina
Axel Bex, The Netherlands
Shiv Bhanot, UK
Vipan Bhatia, United Arab Emirates
Peter Black, Canada
Bernard Bochner, USA
Kasonde Bowa, Zambia
Serge Carrier, Canada
Peter R. Carroll, USA
Octavio Castillo, Chile
André Cavalcanti, Brazil
Chris R. Chapple, UK
Emmanuel Chartier-Kastler, France
Ben Chew, Canada

The mission of **UROLOGY**, the "GOLD JOURNAL", is to provide practical, timely, and relevant clinical and basic science information to physicians and researchers practicing the art of urology worldwide. **UROLOGY** publishes original articles relating to adult and pediatric clinical urology as well as to clinical and basic science research. Topics in **UROLOGY** include pediatrics, surgical oncology, radiology, pathology, erectile dysfunction, infertility, incontinence, transplantation, endourology, andrology, female urology, reconstructive surgery, and medical oncology, as well as relevant basic science issues. Special features include rapid communication of important timely issues, surgeon's workshops, interesting case reports, surgical techniques, clinical and basic science review articles, guest editorials, letters to the editor, book reviews, and historical articles in urology.

Manuscript Submissions: Address all manuscript submissions to Eric Klein, MD, Editor-in-Chief, UROLOGY, Glickman Urological Institute, Q-10, 9500 Euclid Avenue, Cleveland, OH 44195. Telephone (216) 445-6664; FAX (216) 636-5104. E-mail address: goldjournal@ccf.org. Please refer to the Information for Contributors for detailed guidelines.

Publisher: UROLOGY (ISSN 0090-4295) (GST #128741063) (IPM #0388203) is published monthly (For Post Office use only: Volume 82, issue 2 of 6) by Elsevier Inc., 360 Park Avenue South, New York, NY 10010-1710; telephone (212) 633-3958, FAX (212) 633-3913.

Advertising sales should be addressed to Bob Issler, Therapeutic Solutions LLC, 20 Sylvan Ave, Metuchen, NJ 08840; telephone: (267) 987-7006, FAX: (407) 880-1418, Email: b.issler@elsevier.com. **Commercial reprint inquiries** should be addressed to Commercial Reprints Department, Elsevier Inc., 360 Park Avenue South, New York, NY 10010-1710; Fax: (212) 633-3820; E-mail: reprints@elsevier.com. **Classified advertising inquiries** should be addressed to Jaesam Hong, Elsevier Inc., 360 Park Avenue South, New York, NY 10010-1710; telephone: (212) 633-3713; Fax: (212) 633-3820; E-mail: j.hong@elsevier.com.

Subscriptions: Individual: US and Canada $295.00; all other countries $543.00. Institutions: US and Canada $716.00; all other countries $1000.00. Student: US and Canada $140.00; all other countries $150.00. **Customer Service** (orders, claims, online, change of address): Elsevier Health Sciences Division, Subscription Customer Service, 3251 Riverport Lane, Maryland Heights, MO 63043. Tel: 1-877-839-7126 (U.S. and Canada); 314-447-8878 (outside U.S. and Canada). Fax: 314-447-8077. E-mail: journalscustomerservice-usa@elsevier.com (for print support); journalsonlinesupport-usa@elsevier.com (for online support). Periodicals postage paid at New York, NY 10010, and at additional mailing offices.

POSTMASTER: Send address changes and claims for missing issues to: UROLOGY, Elsevier Health Sciences Division, Subscription Customer Service, 3251 Riverport Lane, Maryland Heights, MO 63043. Claims for missing issues can be honored only up to 3 months for domestic addresses, 6 months for foreign addresses. Duplicate copies will not be sent to replace ones undelivered through failure to notify Elsevier of change of address.

UROLOGY

VOLUME 84, NUMBER 4 SUPPLEMENT TO SEPTEMBER 2014

TABLE OF CONTENTS

MODERATED POSTER SESSIONS

TABLE OF CONTENTS–*continued*

Moderated Poster Session 1
Adrenal, Kidney & Ureter
Monday, October 13
1300-1430

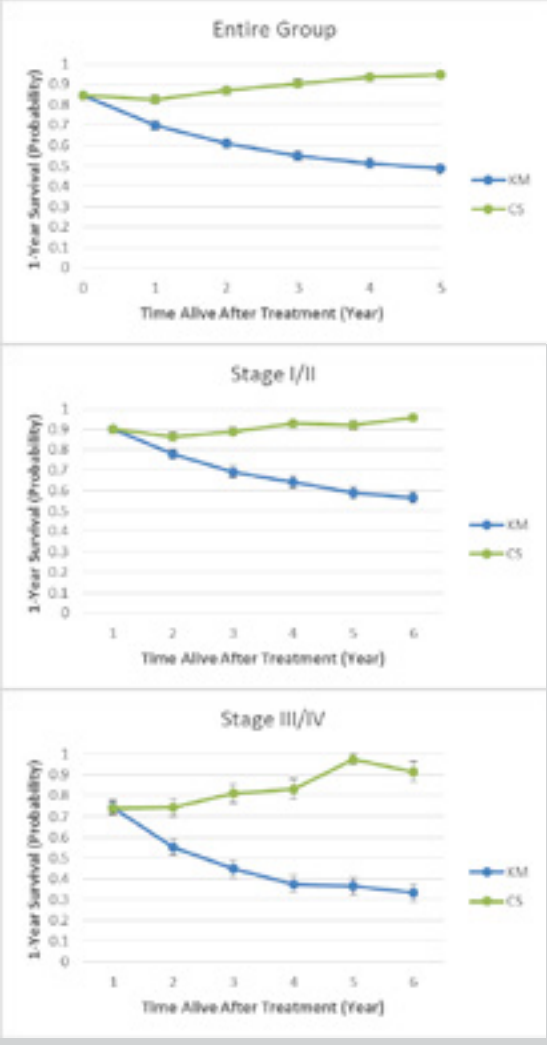
MP-01.01
A Novel Laparoscopic Adrenalectomy via Transumbilical Approach: Focus on Technique
Xu H**, Zou X**, Zhang G, Yuan Y, Xiao R
First Affiliated Hospital of Gannan Medical University, Ganzhou, China

Introduction and Objectives: To evaluate the feasibility, safety and efficacy of a quick technique for novel laparoscopic adrenalectomy via transumbilical approach.
Materials and Methods: Between May 2010 and December 2013, 49 patients including 26 males and 23 females, with a mean age of 41.5 (range 21 to 67) years, were subjected to transvaginal NOTES-assisted laparoendoscopic single-site surgery adrenalectomy (TN-LESS-A) or suprapubic-assisted laparoendoscopic single-site surgery adrenalectomy (SA-LESS-A) in our center. Of them, 26 cases had left adrenal tumors, 22 cases had right adrenal tumors, and 1case had bilateral adrenal tumor combined with right renal tumor. The mean diameter of adrenal tumor was 3.5 (range 0.8 to 6.8) cm. A quick technique was used in all the procedures. The bigger specimens were removed through an extended incision at posterior vaginal fornix or an enlarged pubic hairline.
Results: Twenty-one TN-LESS-As and 28 SA-LESS-As were all successfully completed. The median operative time was 45 (range 30 to 60) mins. The median estimated blood loss was 30 (range 20 to 90) ml. The patients resumed ambulation and oral diet within 2 days after surgery. Hospitalization duration was between 5 and 9 days with a mean postoperative stay of 6.5 days. There was no major intraoperative or postoperative complication in each patient. The scars were hidden within the umbilicus or not detectable because of the pubic hairs. During the follow-up, there was no tumor recurrence in any of the patients, and marked clinical improvements appeared in all the patients with a hormone-secreting tumor. However, only one patient with adrenal cortical carcinoma died after 8 months postoperatively because of multiple metastases in his body.
Conclusion: This quick technique for novel laparoscopic adrenalectomy via transumbilical approach is feasible and safe with less blood loss, minimal invasion, less operative time, fewer complication, short convalescence and good cosmetic result.

MP-01.02
Conditional Survival Analysis for Patients with Adrenal Cortical Carcinomas: Results from Population-based Data
Qu Y, Zhu Y, Ye D
Dept. of Urology, Fudan University Shanghai Cancer Center, Shanghai, China

Introduction and Objectives: Surgical excision is essential management for adrenal cortical carcinomas (ACC) and offers the best change of cure. This study examine the effect of conditional survival (CS) on future survival probability after surgical excision in patients with ACC.
Materials and Methods: Using population-based Surveillance, Epidemiology, and End Results database (1988-2010), 531 patients with ACC who underwent surgery were reviewed. Cox proportional hazard models were used to assess the prognostic factors at baseline. CS estimates were calculated in the entire cohort and according to Union for International Cancer Control (UICC) stage.
Results: Median age of entire cohort was 53 years. Most patients had stage II disease (59%), followed by stage III (21%), IV (15%) and I (6%). Median OS was 66 months and 5-year OS rate was 51.4%. Multivariate analysis showed that age and tumor stage had significant effect on OS ($P < 0.01$). One-year OS for the entire cohort at 1, 2, 3, 4, 5 years was 70%, 60.9%, 55%, 51.4% and 48.7%, respectively. CS of an additional year given survival to 1, 2, 3, 4, 5 year was 82.7%, 87%, 90.4%, 93.4% and 94.9%, respectively. Patients who survive >24 months after their initial treatment had improved 1-year CS. The difference between Kaplan-Meier estimates and CS estimates was more pronounced in stage III/IV disease (Figure 1).
Conclusion: CS may provide more meaningful life expectancy predictions for survivors of ACC than conventional survival outcomes. Specially, even amongst patients with advanced disease

MP-01.02, Figure 1. Conditional and Actual 1-Year Survival Rates for Patients Who Have Already Survived 0–5 Years for the Entire Group, Stage I/II Disease and Stage III/IV Disease, Respectively



after surgery, a more favorable prognosis can be achieved after surviving for 2 years.

MP-01.03
Metallic Ureteral Stent in the Management of Benign and Malignant Ureteric Obstructions: Five Years Experience
Yong G[1], Siaw M[2], Wan K[2], Lee E[2]
[1]University of Aberdeen, Aberdeen, UK; [2]Monash University Sunway Campus, Bandar Sunway, Malaysia

Introduction and Objectives: The reconstructive management of ureteric strictures, both of benign and malignant natures may not be desirable or possible due to various risk factors. The emergence of the metallic ureteral stents had enhanced treatment armamentarium with intention of reducing the interval of stent change and increase radial strength. We review our five-year experience of Resonance stent in the management of ureteric obstructions, to assess the patency rates and adversity for the metallic stents in both malignant and benign strictures.
Materials and Methods: Retrospective analysis of patient with Resonance stent insertions between 2009 and 2014 were carried out. Patients demographic, etiology of occlusion, stent patency and complications were recorded. The necessity for stent change was identified by deterioration of renal function patients with bilateral stents.
Results: Forty-four Resonance stents were inserted in 24 patients, of whom 14 had bilateral stents, ten unilateral and six reinsertions (all bilateral). The mean age was 60 years (Range 38-79). Fourteen men and 10 women were treated, with 28 stents in malignant obstructions and 16 benign causes. The aetiology of the malignancy includes gastrointestinal, gynaecological and prostatic cancers; and the benign causes were post-radiation strictures, post-operative ischemia and ketamine bladder contractures. The mean follow-up was 28 months (3 to 58 months). The longest functioning stent was 50 months. The stent patency for both malignant and non-malignant causes was 75%. Half of the patients with malignancy were deceased with functioning stent. The mean interval of change due to obstruction was 11 months (7 to 23 months). The non-malignant group had patency interval of 16 months (3 to 50 months) and mean interval of change is 12 months in 3 patients. Recurrent urinary tract infections were observed in five patients, sepsis recorded in two patients and one stent migration noted.
Conclusion: The Resonance metallic ureteral stent is an effective alternative to polymer-based stents for select patients with upper urinary tract obstruction. The potential advantages of metallic ureteral stents include greater tensile strength allowing increased dwell times. Our results demonstrated good stent efficacy in both malignant and benign ureteric obstructions. Stringent monitoring of renal functions is warranted to prevent stent occlusions.

MP-01.04
Twin Ureteric Stents for the Management of Malignant Ureteric Obstruction
Bolgeri M**, Tanabalan C**, Anson K
St.George's Hospital, London, UK

Introduction and Objectives: Malignant ureteric obstruction carries a poor prognosis and represents an endourological challenge due to failure of conventional ureteric stents and the problems associated with long-term percutaneous nephrostomies. The insertion of twin ureteric stents (TUS) represents a minimally-invasive option when single stents have failed. In this study we reviewed our experience and outcomes with TUS.
Materials and Methods: Our prospectively-maintained electronic stent register was interrogated to identify TUS procedures performed at our tertiary referral institution. Our technique involves the simultaneous insertion of two 8-French ureteric stents over two superstiff guidewires which are deployed through a 10-French dual-lumen catheter, after coaxial dilatation of the ureters. Nephrostomies, when present, are clamped on the operating table and removed the following day after a nephrostogram confirmed drainage. Pre- and post-operative renal function, technical failure of TUS and patients' survival were the main measured outcomes.
Results: Nineteen TUS procedures (12 insertions and 7 changes) were performed. Bilateral TUS was performed in 16 out of 19 cases. Indications were advanced cancers of prostate (37%), rectum (37%), ovaries (21%) and bladder (5%) causing ureteric obstruction with failure of conventional stents. The procedure was technically successful in all patients. Eleven patients had pre-operative nephrostomies for a median time of 17 days. All of them were rendered free of nephrostomies postoperatively. Serum creatinine levels remained stable in the post-operative period and upon discharge (average 235 μmol/L versus 223 μmol/L post-nephrostomy prior to TUS insertion, p=0.32). Nine patients died at a median 91 days post-TUS insertion or exchange. Three of them developed signs of stent failure (rising serum creatinine and worsening hydronephrosis on imaging) and had a median life expectancy of 45 days, compared to 156 days for those with stable or improved serum creatinine ($p<0.05$).
Conclusion: TUS is an effective and technically successful option for the management of malignant ureteric obstruction, with the majority of patients dying of the underlying condition after a relatively short period of time, however with functioning stents. TUS allows discharge of the majority of patients without nephrostomies in situ. Early stent failure is a poor prognostic sign, which is associated with even shorter survival.

MP-01.05
Endopyelotomy for the Treatment of Pelviureteric Junction (PUJ) Obstruction: Outcomes over a 9-Year Period
Aldiwani M, Abroaf A, Browning A, Biyani C
Pinderfields General Hospital, Wakefield, UK

Introduction and Objectives: Many urologists consider laparoscopic pyeloplasty as the gold standard treatment for patients with PUJ obstruction due to higher reported success rates. However, endopyelotomy in selected patients still enjoys good outcomes with some advantages. The aim of this audit was to assess outcomes in patients undergoing endopyelotomy at our unit.
Materials and Methods: A retrospective analysis of all patients undergoing endopyelotomy for PUJ obstruction at our centre July 2003 – February 2012 was performed. Renograms were analysed pre and post operatively. Success was defined as marked/moderate symptom relief and/or relief of obstruction on renogram. Complications and long-term outcomes were recorded where available.
Results: Twenty eight patients underwent endopyelotomy during the prescribed time period, 36% Male, 64% Female; mean age 57 (range 22-88). Three patients were lost to follow-up. Eighty four percent of patients (21/25) had moderate or marked symptom relief. Ninety two percent (23/25) of patients had complete resolution of obstruction. One patient ultimately required nephrectomy due to a poor functioning obstructed kidney. Complications included stent symptoms in 4 patients (16%), urinoma in 1 patient and urosepsis in 1 patient. Of those patients who did not have successful outcome (n=4), 2 had previous lap pyeloplasty, 1 patient had crossing vessel on CT and 1 patient failed to attend subsequent follow-up.
Conclusion: The majority of patients had a successful outcome after undergoing this minimally invasive, relatively simple (compared to lap pyeloplasty) procedure. Endopyelotomy achieves acceptable results in a carefully selected group of patients and should be considered as a treatment option for patients with PUJ obstruction.

MP-01.06
Transmesocolic Pyeloplasty for Left Side Pelvi-Ureteric Junction Stenosis: A Pioneer Initial Experience in Nepal
Joshi R
Kathmandu Medical College and Teaching Hospital, Kathmandu, Nepal

Introduction and Objectives: To evaluate the initial outcome of Transmesocolic (TMC) laparoscopic pyeloplasty.

Materials and Methods: This is an initial observational study of our cases .We started Laparoscopic Urosurgery from 2009.After gaining experience in retroperitoneal approach we started transperitoneal approach and transmesocolic approach for left PUJ stenosis. Till date we have performed more than 25 transperitonea l (colon reflecting) and 6 TMC pyeloplasty. TMC was started from Jan 2013 to Jan 2014 at Kathmandu Medical College. All patients underwent Fenger's pyeloplasty and three patients had pyelolithotomy as well. We have used conventional laparoscopic instruments for all the procedure. All patients were followed by intravenous urography (IVU) at 3 months. Patients were explained about the procedure and conversion rate. Written and verbal consent were taken. Patients with complicated UTI, sepsis were excluded from the study.
Results: Six patients underwent TMC left pyeloplasty. There were 4 female and 2 male patients with age ranging from 21-28 years. Operating time ranged from 120-150 minutes with mean of 132 minutes. Per-operative blood loss was minimal ranging from 10-20 ml. Return of bowel movement was within 1-2 days. All patients were discharged within 2 days and drain removed with 2-3 days. Two patients were discharged on 2nd day but drain was removed on 3rd day in outdoor. Follow up of 5 patients showed improvement in their pain status and IVU showed no re-stricture or stenosis.
Conclusion: Tranmesocolic approach for left PUJ obstruction is feasible and seems to have low morbidity with shorter hospital stay. Comparison with Colon-reflecting pyeloplasty and larger number of cases are needed for better statistical evaluation.

MP-01.07
The 'Anderson-Hynes Pyeloplasty': Are We All Really on the Same Page?
Adam A**, Smith G**
The Sydney Childrens Hospital Network, Sydney, Australia

Introduction and Objectives: The Anderson-Hynes Pyeloplasty (AHP) is commonly performed in the management of pelvi-ureteric junction (PUJ) obstruction. This procedure was initially described using an L-shaped incision on the dilated renal pelvis. This resulted in an inferior pelvic flap which created a funnelled, dependent anastomosis across the reconstructed PUJ. Although the AHP has edged its name in the annals of Urology, we hypothesise that the AHP has become a polymorphic entity within the recent literature, which may not always be referring to the same procedure.
Materials and Methods: An Ovid MEDLINE(R) and Ovid OLDMEDLINE(R) database search from 1946 to 20th March 2014, was performed for the terms 'Anderson and Hynes' and 'Anderson-Hynes', with restriction to the *title* of journal article. Each respective author's descriptive images (figures/photographic) of technique performed was compared to the original procedure. Non-English figure legends were translated using online translational tools.
Results: In total, 57 articles (33 English/24 Non-English) were retrieved. Only 29/57 papers had referenced the original procedure. Operative images were present in 17/57 of the articles. Within these papers, only 7/17 articles depicted both the L-shaped cut and pelvic flap. Although all papers were describing dismembered pyeloplasties, diverse variations were observed in the remainder 10/17 articles; including a V, I and Q shaped pelvic cut.
Conclusions: The Anderson-Hynes pyeloplasty is often not performed as was originally described. Over the decades, various authors have performed variations to the original incisions. These variations may affect outcomes. To assist with this nomenclature, an 'incision specific' classification system has been proposed for the dismembered pyeloplasty.

MP-01.08
D Track: A New Software to Track Inserted DJ Stents
Zaidi Z, Khan R
The Indus Hospital, Karachi, Pakistan

Introduction and Objectives: A Double J Stent (DJS) is a temporary device commonly used in endourological practice. Due to their concealed nature, DJS are often forgotten, and remain within the body beyond their required duration. "Forgotten" DJS is a common problem worldwide and may lead to various complications, ranging from local tissue reaction to sepsis. Given the serious nature of potential complications, keeping track of each inserted DJS is essential. The objective was to design a software which would keep track of DJ stents inserted and send reminders to primary team when to remove them.
Materials and Methods: An electronic reminder program for follow up of patients with in situ DJS was piloted at the Indus Hospital, Karachi. The Management Information System (MIS) at our institute records all patient events on an electronic database. A tool was developed whereby the MIS automatically captures all DJS insertions done at our Hospital and calculates an expected date for removal, which was pre-defined to be 3 months from the date of insertion. Additional features integrated into this software include the generation of reports indicating the patients who are overdue, and also provides us information about DJ stents due removal in the coming weeks and months. This is important as it helps prevent missed stents one of the key objectives of the software. Hence is the name of the software D-track or device tracking software. One week prior to the calculated removal date, an SMS reminder is automatically sent by the MIS to the cell phone of a member of the primary team. Patient medical records are then reviewed and depending on clinical requirements, patients are contacted and scheduled to come back to hospital for removal of the stent.
Results: Over a period of 1 year since deployment, no patient with DJ stent has been forgotten. All stents have been removed within time frame set. A timely reminder generated by the software allows physicians to contact patients and call them for DJ removal. When run through the data base of 1753 DJ stents historically placed, 67 missed stents were recognized and retrieved successfully.
Conclusion: D tract is a low cost software allowing timely removal of DJ stents by keeping track of all stents placed, plan their removal, send reminders for forgotten stents and hence helps in decreasing morbidity associated with forgotten stents. The software design is such that all this is achieved without any human interface. This software can be used to keep track of any device inserted in patients.

MP-01.09
High-pressure Balloon Dilation for the Treatment of Iatrogenic Ureteral Stricture after Gynecologic Surgery
Yamamoto Y, Sako T, Yokoyama S, Shiotsuka Y, Ichikawa T, Ishito N, Takamoto H
Kurashiki Medical Center, Kurashiki, Japan

Introduction and Objectives: We report the safety and efficacy of high-pressure balloon dilation for the treatment of iatrogenic ureteral stricture after gynecologic surgery.
Materials and Methods: Between October 2007 and September 2013, a total of 28 ureteral strictures in 26 patients were confirmed to be caused by ureteral injury sustained during gynecologic surgery. We inserted a double-J stent immediately. After 1 month, 30-atm high-pressure balloon dilation was performed with a retrograde approach and a double-J stent was placed again after the treatment. Three months later, the double-J stent was removed.
Results: The mean length of the obstructed ureteral segment was 2.4 cm (range 0.5 to 8.0). Balloon dilation was performed once in 22 ureters, and repeated once or twice in 6 ureters after a few months. The mean follow-up duration was 17 months (range 5 to 42). The overall success rate was 75% (21/28). The mean length of the obstructed segment was longer in failed cases (3.3 cm) than in successful cases (2.2 cm). The success rate was 100% (14/14) in patients with benign gynecologic disease. No major complications occurred in any of the cases.
Conclusion: High-pressure balloon dilation is a safe and efficient method for the treatment of iatrogenic ureteral stricture after gynecologic surgery.

Moderated Poster Session 2
BPO/LUTS
Monday, October 13
1300-1430

MP-02.01

The Association between Air Pollution and Benign Prostatic Hyperplasia

Shim S[1], Kim J[2], Lee W[1], Kim H[1], Bae M[1], Bae J[1], Yoon S[3], Kim K[3], Kim K[3], Lee H[3]
[1]Korea University, Seoul, South Korea; [2]Soonchunhyang University, Seoul, South Korea; [3]Gachon University, Inchon, South Korea

Introduction and Objectives: Potential explanations for large geographic differences in BPH prevalence may be due to genetics or lifestyle and environment. However, little is known about the role of environmental factors in benign tumors associated with BPH. Therefore, we focused on the air pollution as an environment factor affecting BPH and attempted to explain the regional differences in BPH prevalence in relation to air pollution.
Materials and Methods: The present study used data from two large population studies: community- and university hospital- based survey which covered nine major areas of South Korea, a total of 56 institutions, and 1,734 participants in those areas. This study attempted to determine the mean emissions of air pollutants with National Air Pollutants Emission 2010 report and TeleMetering System by the National Institute of Environmental Research within the Korean Ministry of Environment.
Results: The mean IPSS of total group was 15.25 in the low-level area group and 18.58 in the high-level group and the differences among the area groups were statistically significant ($p<0.01$). The comparison of IPSS among age groups by three area groups adjusted for age revealed that in all the age groups the area groups displayed higher IPSS scores when they had higher air pollutant emissions ($p<0.05$).
Conclusion: It can be inferred that if air pollution as an environmental factor affects malignant neoplasm of the urinary tract, it will have an effect on benign tumor as BPH. Accordingly, the differences in such association could explain variations in BPH prevalence among geographic areas. These findings were the first study to demonstrate the association between air pollution and BPH. Our findings demonstrated increased risks of BPH severity among men exposed to higher concentrations of air pollution.

MP-02.02

Correlation between Prostate-Urethral Angle and Intravesical Prostate Protrusion on Uroflowmetry and International Prostatic Symptoms Score (IPSS) in BPH Patients

Romdam T, Santoso J
Dept. of Urology, Hasan Sadikin General Hospital, University of Padjadjaran, Bandung, Indonesia

Introduction and Objectives: Lower urinary tract symptoms (LUTS) are one of the most common complaints in aging men, and benign prostate obstruction is one of the most common causes. It is believed that the increase in prostate volume is not related to degree of LUTS. Several studies have reported the importance of anatomical factors in evaluating men with LUTS such as Intravesical prostatic protrusion (IPP) and Prostate uretral angle (PUA). We investigated the correlation between IPP and PUA as anatomical factors that might influence LUTS based on IPSS and Uroflowmetry. The aim of this study is to investigate the correlation between intravesical prostatic protrusion and prostate uretral angle in BPH patient with LUTS based on IPSS and uroflowmetri.
Materials and Methods: The study was done on 71 BPH patients with LUTS who attended the urologic clinic of Hasan Sadikin Hospital and matched the inclusion and exclusion criteria. Patient's age, IPSS, PSA, transrectal ultrasound for prostate measurement, uroflowmetry and residual volume were recorded for statistical analysis. Patients were then classified based on prostatic-urethral angle ($<35^{\circ}$ dan $\geq 35^{\circ}$) and degree of intravesical prostatic protrussion (grade 1< 5mm; II 5-10mm; III >10mm). We used Mann-Whitney test for comparative study, and Spearman correlation test for correlative study. P-values of <0.05 were considered statistically significant.
Results: There is an increase in total IPSS (22.31 ± 4.87; p=<0.001) in the PUA $\geq 35^{\circ}$ include in IPSS storage and IPSS voiding. It is followed by decrease in Quality of life (Qol: 4.02 ± 0.75; p=<0,001), decrease in Qmax (7.28 ± 2.11; p=<0.001), decrease in Qave (5.44 ± 2.06; p=<0.001), decrease in voided volume (184± 79.55; p=0.04) also increase in PVR (55.30± 29.69; p=0.014). Increase in degree of IPP is related to increase in total IPSS, IPSS storage and IPSS voiding: (p<0.001; <0.001 dan 0.027) and decrese in Qmax and also increse in PVR (p<0.025, p<0.033). There is significant correlation between PUA and IPP with LUTS (p=<0.001, with (r) correlation coeficient 0.670 and 0.640).
Conclusion: Prostatic-urethral angle and intravesical prostatic protrusion have significant correlation with LUTS in BPH patients based on IPSS and Uroflowmety. These two kinds of conditions seem to influence LUTS as anatomical factors in BPH patients and Prostate urethral angle has stronger correlation than intravesical prostatic protrusion.

MP-02.03

The Association between Metabolic Syndrome and Benign Prostatic Enlargement Depends on Prostate Cancer Status

Bhindi B, Kulkarni G, Alibhai S, Hamilton R, Toi A, Trachtenberg J, Zlotta A, Finelli A, Fleshner N
University Health Network, Toronto, Canada

Introduction and Objectives: Metabolic syndrome (MetS) is associated with both benign prostatic hyperplasia and simultaneously an increased risk of prostate cancer (PC) and high grade disease. The interplay between MetS and these two separate pathologies remains to be characterized. Our objective was to evaluate the association between MetS and benign prostatic

MP-02.01, Table 1. IPSS of area groups according to National Air Pollutants Emission 2010

Area groups	Criteria 1*	Criteria 2**	Province	N (1734)	IPSS of total group‡	IPSS of Age groups			
						≥ 50 & <60†	≥ 60 & <70‡	≥ 70 & <80‡	≥ 80†
High	> 100	> 10	Gangwon, Ulsan	187	18.58±8.50§	17.2±8.0	18.7±8.4	18.4±8.4	22.2±10.6
Medium	31 - 100	1 - 10	Incheon, Daegu, Daejeon, Gyeonggi, Busan	1077	17.45±7.52§	16.7±6.5	17.8±7.3	17.3±7.7	18.1±8.7
Low	< 31	< 1	Seoul, Gwangju	470	15.25±7.93	14.0±6.9	15.4±8.3	15.3±7.8	15.5±8.4

* SUM ** SOx; kg/year/person, National Air Pollutants Emission
† p <0.05, ‡ p<0.01 for ANOVA. § same letters indicate no statistical significance based on Duncan multiple comparison

enlargement (BPE) separately in men with and without PC diagnosis.
Materials and Methods: Men undergoing prostate biopsy were identified using our institutional database. Men undergoing active surveillance or with prior history of TURP were excluded. The most recent biopsy was used in men with multiple biopsies, in order to best reflect underlying cancer status. MetS required any 3 of 5 components (obesity, diabetes/impaired fasting glucose, hypertension, low HDL-cholesterol, and high triglycerides). The primary outcome was TRUS-measured prostate volume (PV). The secondary outcome was International Prostate Symptom Score (IPSS). The Kruskal-Wallis test and multiple linear regression and logistic regression analyses adjusting for age, ethnicity, alpha-blocker use, and 5-alpha reductase inhibitor use, were performed.
Results: The cohort included 2428 men, of whom 1402 (57.7%) were found to harbour PC. PV increased in a graded manner is association with the number of MetS components present. Among men without PC, MetS was associated with PV (0 MetS components: 43.0cc (IQR=35.0-57.0) vs. 5 components: 59.5cc (IQR=38.0-83.5); p=0.003) but not in men with PC (p=0.28). Among men without PC, men with 5 MetS components had a higher median IPSS compared to 0 components (13 (IQR=7-19) vs. 8 (IQR=4-12)), although significance was not attained (p=0.18). There was no association between MetS and PV or IPSS among men with PC. In multiple linear regression analyses, MetS was associated with PV among men without PC (p=0.027) but not among men with PC (p=0.21). Multivariable associations between MetS and IPSS did not reach significance.
Conclusions: MetS is associated with larger prostate volume, with the largest effect among men shown not to have underlying PC. It is an interesting observation that MetS promotes PC in some men, and promotes BPE in other men. This study raises interesting questions about the impact of MetS on the biology of the prostate.

MP-02.05
Time-Response Relationship and Clinically Meaningful Improvement of Lower Urinary Tract Symptoms Secondary to Benign Prostatic Hyperplasia (LUTS/BPH) During Tadalafil Treatment
Oelke M[1], Shinghal R[2], Donatucci C[3], Baygani S[3], Sontag A[3]
[1]Hannover Medical School, Hannover, Germany; [2]Palo Alto Medical Foundation, Palo Alto, USA; [3]Eli Lilly and Company, Indianapolis, USA

Introduction and Objectives: Physicians currently lack evidence of the onset of clinically meaningful improvement (CMI) in patients being treated with tadalafil for lower urinary tract symptoms secondary to benign prostatic hyperplasia (LUTS/BPH). This post-hoc analysis identified the cumulative proportion of men who achieved CMI as a function of time on therapy.
Materials and Methods: This is a post-hoc analysis of pooled data from four randomized, double-blind, placebo-controlled, 12-week studies investigating tadalafil 5 mg (N=742) or placebo (N=735) in men aged ≥45 years of age with International Prostate Symptom Score (IPSS) ≥13. CMI was defined as an improvement in total IPSS of ≥2 for patients with moderate LUTS at baseline, ≥6 for patients with severe LUTS at baseline and ≥3 for the overall population. All studies measured IPSS at Weeks 4, 8, and 12; additionally, two studies collected IPSS data at Week 1 and one study collected IPSS data at Week 2.
Results: At the 12-week study endpoint, 69% of men on tadalafil vs. 55% on placebo achieved a CMI across all four studies (≥3 IPSS improvement; p≤0.001). Among men who achieved CMI at Week 12 with tadalafil, 55-64% achieved CMI by Week 1, 58% by Week 2, 75-84% by Week 4, and 82-87% by Week 8 (≥3 IPSS improvement). Time-to-onset of CMI was generally shorter for men with moderate vs. severe LUTS at baseline.
Conclusion: Of men who respond to tadalafil therapy (69% of the study population), approximately 60% respond within 1-2 weeks and approximately 80% respond within 4 weeks.

MP-02.07
Comparative Analysis of Benign Prostatic Hyperplasia Managements between Urologists and Non-Urologists: Korean Nation-Wide Health Insurance Database Study
Park J[1], Lee Y[2], Lee J[3], Yoo T[4], Chung J[5], Yun S[6], Hong J[7], Seo S[8], Cho S[1], Son H[1]
[1]Metropolitan Government Seoul National University Boramae Medical Center, Seoul, South Korea; [2]Seoul National University Hospital, Seoul, South Korea; [3]Sanggye Paik Hospital, Seoul, South Korea; [4]Eulji General Hospital, Seoul, South Korea; [5]Inje University Busan Paik Hospital, Busan, South Korea; [6]Chungbuk National University Hospital, Cheongju, South Korea; [7]Asan Medical Center, Seoul, South Korea; [8]Samsung Medical Center, Seoul, South Korea

Introduction and Objectives: Using Korean nationwide health insurance data, we compared the current management of benign prostatic hyperplasia by urologists and non-urologists.
Materials and Methods: We obtained patient data from the national health insurance system on the treatment of BPH. New patients diagnosed with BPH in 2009 were divided into two groups depending on whether they were diagnosed by a urologist (U group) or a non-urologist (NU group).
Results: A total of 390,767 individual were newly diagnosed BPH in 2009. Of these, 240,907 (61.7%) patients were in U group and 149,860 (38.3%) in NU group. Among the non-urologists, internists were most common (57.7%), followed in descending order by general surgery (8.6%), dermatology (7.6%), orthopedics (6.9%), and family medicine (6.8%). The comparative analysis showed that the NU group was older, had more comorbidities, and had a tendency to live in a rural area. They were also more likely to be receiving medical aid and to be treated at a primary hospital or a public health center. The rate of all initial evaluation tests, except serum creatinine, was significantly lower in the NU group. The initial prescription rate was higher in the U group, whereas the prescription period was longer in the NU group. With regards to the initial drugs prescribed, the use of alpha-blockers was common in both groups. However, the U group was prescribed combination therapy of an alpha-blocker and 5 alpha-reductase inhibitor as the second choice, whereas the NU group received monotherapy with a 5 alpha-reductase inhibitor. During the 1-year follow-up, the incidence of surgery was significantly different between the U group and the NU group (3,213 vs. 646, respectively).
Conclusion: There is a distinct difference in the diagnosis and treatment of BPH by urologists and non-urologists in Korea. The difference may have adverse consequences for BPH patients. The urological society should take a leadership role in the management of BPH and play an educational role for non-urologists, as well as urologists.

MP-02.08
Hemi Transurethral Resection for Benign Prostates (H-TURP): Analysis of Results
Katmawi-Sabbagh S, Payne D, Uraiby J, Al-Sudani M
Kettering General Hospital, Kettering, UK

Introduction and Objectives: TURP is the gold standard surgical technique for treatment of symptomatic benign prostatic hyperplasia. However, large and vascular prostate may represent a surgical challenge both in open as well as in endoscopic resection. We assessed the role of Hemi TURP (H-TURP) as an alternative technique to the standard complete endoscopic resection or open prostatectomy.
Materials and Methods: We retrospectively studied patients with enlarged prostate who underwent H-TURP over a period of 5 years. The H-TURP was performed on patients for either high co-morbidity, intra-operative severe bleeding or to reduce the resection time. Prostate resection carried out using monopolar diathermy in all. We compared the results of pre-operative IPSS, QoL, flow test, PSA, and U&Es to those obtained after treatment.
Results: Total of 31 patients underwent H-TURP, mean age was 73 years. Thirteen of

MP-02.08, Table 1. Comparing our H- TURP results with the EAU quoted results for standard TURP and open prostatectomy.

Results	H-TURP series	EAU quoted figure for standard TURP	EAU quoted figure for open prostatectomy
IPSS improvement	51.5 %	70.6% 1	Up to 86% 4
QoL (mean) or percent.	0.93 at 12 months	1.2 at 10 years 2	Up to 87% 4
Qmax improvement	195 %	125% 1	375% 4, 5, 6
Average Tissue resected (gr)	28.86	Variable	Variable
PSA reduction	49.54%	Not reported.	Not reported.
Catheter time and Hospital stay	3 days	Variable	Variable
Operative time	42.8 min	Not available	Not available
TURP syndrome	0%	1.1% 3	Not applicable
Transfusion requirement	0%	8.4 % 1	7-14% 4, 7
Re-treatment rate	3.2%	1-2% per year	0% (at 5 years) 4, 5, 6

these patients had H-TURP for acute urinary retention and 18 for bothersome lower urinary tract symptoms which failed initial pharmacotherapy. No episodes of TURP syndrome was noted (serum sodium mean reduction from 140 to 139), and no patient required blood transfusion. Patients had an average of 12 months post operative follow-up. The mean IPSS reduction is 51.5% and QoL score came down from average of 3.7 to 0.93 post-operatively. The mean Qmax improved from an average of 10.11 to 19.75ml/sec (195% improvement rate). The PSA was reduced 49.5% after H-TURP. Only one patient required further resection (3.2%) at 12 months time.

Conclusion: Although this is a small study, however H-TURP appears to be an effective technique in comparison to the gold-standard TURP and open prostatectomy published data. The H-TURP offered clear objective and subjective improvements with a low complication rate and may be suitable for patients with large or vascular prostate. However, the long-term durability of this technique needs to be addressed with longer term follow-up.

MP-02.09

Hybrid Bipolar Prostatectomy for the Large Prostate

Kasem A, El Fayoumy H, Abdel Hamid M, Abdel Mohsen M, El Gammal M, Bedair A
Cairo University, Cairo, Egypt

Introduction and Objectives: To evaluate safety and efficacy of a new hybrid technique for bipolar prostatectomy in large prostates without morcellation.

Materials and Methods: Twenty patients with BOO due to BPH were included from June 2011 to July 2012. Fifteen patients were catheterized for refractory retention, five had severe LUTS. We excluded patients with prostate cancer, neurogenic bladder, previous prostatic surgery, urethral stricture, and UTIs. Prostate size was 95.94 ± 25 gm. We used the bipolar high-frequency generator UES-40SurgMaster (Olympus Winter & Ibe GmbH, Hamburg, Germany). The procedure starts by developing a plane between the adenoma and the surgical capsule using the button loop to open the anterior commissure and to make an incision at 5 and 7 o'clock then proceeding to enucleation with the resection loop and tip of resectoscope until each lobe is attached only to the bladder neck, then the resection loop is employed and the lobes are sequentially resected. The button loop is employed again at the end of the procedure for evaporization of residual tissues and hemostasis. Perioperative parameters were recorded and the patients were followed up by IPSS, PVRU and Q-max at 1, 6, and 12 months.

Results: Mean operative time was146.88 ± 30.92 min, mean catheterization time 3.81 ± 1.47 days, and postoperative hospital stay was 4.25 ± 1.76 days. One patient required blood transfusion, no TUR syndrome, no clot retention. Hemoglobin reduction was 16.04% ± 5.85. PSA reduction was 82.22% ± 12.2 ng/mL. All patients had spontaneous voiding postoperatively. The mean Q-max after catheter removal, 1 month, 6 months and 12 months was 15.95 ± 4.51, 16.65 ± 4.97, 16.62 ± 3.84 and 18.15 ± 4.53ml/s, respectively. The mean IPSS at 1 month, 6 months and 12 months was 4.75 ± 2.35, 3.87 ± 1.25 and 4.13 ± 1.36 respectively. The mean post voiding RU after catheter removal,1 month, 6 months and 12 months was 6.56 ± 17.96, 12.56 ± 17.25, 2.14 ± 5.79 and 3.21 ± 7.23 ml, respectively.

Conclusion: The hybrid bipolar prostatectomy is safe and effective in relieving bladder outlet obstruction by the large prostate.

MP-02.10

Clinical Course of Patients Receiving Anti-Platelets Therapy Who Underwent Thulium Laser Enucleation of the Prostate

Carmignani L, Marenghi C, Finkelberg E, Macchi A, Ratti D, Bozzini G, Casellato S, Ani Bani M, Jara M, Picozzi S
Dept. of Urology, IRCCS Policlinico San Donato, Milano, Italy

Introduction and Objectives: With the progressive ageing of the population, the prevalence of vascular disease as the prevalence of benign prostatic enlargement is increasing. In recent years, laser prostatectomy is emerging as a replacement for the standard transurethral resection of prostate (TURP). The aim of this study was to evaluate the clinical course of patients receiving anti-platelets therapy who underwent Thulium Laser Enucleation of the Prostate.

Materials and Methods: From September 2011, we started a prospective study on patients who underwent ThuLEP. All candidates for surgical therapy show lower urinary tract symptoms (LUTS) and obstruction due to a BPH. This work evaluated the surgical outcomes of 42 ThuLEP in patients taking anti-platelet therapy to 50 procedures performed in patients who have never taken anti-platelet agents before surgery.

Results: The study group included 39 patients who had been on anti-platelet monotherapy with ASA 100 – 300 mg and 3 in Ticlopidine. In the study group 37 procedures (88%) were performed under spinal anesthesia, while 5 were performed under general anesthesia. There was no significant difference in operative time. A comparison test between groups was not statistically significant with regards to the decrease in haemoglobin concentration. Transfusional support was required in one procedures performed in patients taking anti-platelet therapy, and in no procedures in controls. There were no adverse cardiac events (myocardial infarction, angina, cardiovascular failure, hypovolemic shock). One patient in the treatment group required re-intervention to ensure haemostasis. During this period one case of haematuria happens two week in every of the two group that was treated conservatively. No further bleeding or cardiac events were recorded.

Conclusion: In this study we demonstrated for the first time that patients undergoing ThuLEP, who continued taking anti-platelet agents had no significantly increased incidence of perioperative bleeding-associated morbidity compared with those who were not taking any anti-platelet medication.

MP-02.11

Sexual Outcome of Patients Undergoing Thulium Laser Enucleation (ThuLEP) for BPH: First Study of 110 Patients

Carmignani L, Bozzini G, Casellato S, Maruccia S, Marenghi C, Macchi A, Picozzi S, Finkelberg E, Jara M
Dept. of Urology, IRCCS Policlinico San Donato, Milano, Italy

Introduction and Objectives: To assess the effect of ThuLEP on sexual function in a group of patients with LUTS secondary to BPH. To assess whether ThuLEP has any effect on retrograde ejaculation reduction.
Materials and Methods: Prospective study that analyzes changes in sexual function and urinary symptoms in a group of 110 consecutive patients that underwent ThuLEP. To assess the changes on erection and ejaculation, urinary symptoms and their interference on quality of life, three validated questionnaires were used: ICIQ-MLUTSsex, AUA questionnaire and QoL index of the ICC. Patients were evaluated before surgery and 3 and 6 months after ThuLEP. Patients with previous abdominal surgery were excluded. Statistical analysis was performed by the Student t and chi-square Test and logistic regression analysis. For all statistical comparisons significance was considered at $p<0.05$.
Results: Mean age was 67.83 years. The table shows the changes in scores on the questionnaires employed. No significant differences were observed between the number of patients about erectile function before and after surgery. The percentage of patients with conserved ejaculation increased with ThuLEP to 52.7%.
Conclusions: ThuLEP causes an improvement in the scores of questionnaires that assess urinary symptoms and the interference of the symptoms in the quality of life of patients. Although endoscopic management of BPH (TURP and new technologies) causes most of patients have retrograde ejaculation, in patients who underwent ThuLEP there is a conserved ejaculation.

MP-02.12

Transurethral Thulium Laser Vapo-Resection versus Transvesical Open Enucleation for Prostate Adenoma Greater Than 80 G: A Study of 78 Patients

Carmignani L, Bozzini G, Casellato S, Macchi A, Marenghi C, Finkelberg E, Ratti D, Ani Bani M, Jara M, Picozzi S
Dept. of Urology, IRCCS Policlinico San Donato, Milano, Italy

Introduction and Objectives: Prostate adenomas greater than 80 ml have traditionally been treated with open prostatectomy or transurethral resection by skilled resectionists. This procedure may involve considerable blood loss, morbidity, prolonged hospital stay and recovery time. We compare transurethral Thulium laser enucleation (ThuLEP) of the prostate to open prostatectomy for the surgical management of large prostate adenomas.
Materials and Methods: A total of 78 obstructed patients with a prostate larger than 80 ml on transrectal ultrasound undergo ThuLEP or open prostatectomy. All patients were assessed preoperatively and postoperatively. Patient baseline characteristics, perioperative data and postoperative outcome were compared. All complications were noted.
Results: Forty eight patients underwent ThuLEP, and 30, open prostatectomy. Mean patient age is 78 in the ThuLEP group and 72 in the open adenomectomy group. Mean preoperatory transrectal adenoma volume is 126 ml and 115 ml respectively. Mean Hemoglobin loss was significantly less ($p<0.05$), and catheterization time ($p<0.05$) and hospital stay ($p<0.05$) were significantly shorter in the ThuLEP group. Adverse events ($p<0.05$) were more frequent in the open prostatectomy group such as prolonged haematuria, surgical infection, fever and analgesic drugs use. None of the Thulium group patients needed blood transfusions in contrast to 6 patients (20%) in the prostatectomy group.
Conclusion: ThuLEP and open prostatectomy are equally effective procedures for removal of large prostatic adenomas. ThuLEP resulted in significantly less perioperative morbidity and may become the endourological alternative to open prostatectomy.

MP-02.11, Table 1.

Outcomes Data	Pre-Op	At 3 months	At 6 months
IPSS	18.1 SD 6.7	6.8 SD 5.3	4.3 SD 4.9
QoL	4.2 SD 1.4	2.1 SD 1.7	1.4 SD 1.6
IIEF 5	16.8 SD 4.4	16.4 SD 3.1	18.1 SD 3.8
Erection conserved ICIQ-MLUTSsex	87/110	100%	100%
Ejaculation conserved MSHQ-EjD	74/110	58 (52.7%) / 76%	58 (52.7%) / 76%

MP-02.13

Irritative Symptoms after Thulium Laser Enucleation of the Prostate (ThuLEP): Our Personal Experience

Carmignani L, Marenghi C, Macchi A, Finkelberg E, Ratti D, Bozzini G, Casellato S, Ani Bani M, Maruccia S, Picozzi S
Dept. of Urology, IRCCS Policlinico San Donato, Milano, Italy

Introduction and Objectives: A recent technological advance for the surgical treatment of BOO has been the Thulium laser. The objective of the present study was to definite the immediate irritative symptoms following the endoscopic surgical treatments for benign prostatic obstruction with the Thulium laser enucleation of the prostate (ThuLEP).
Materials and Methods: From January 2012 to December 2013 we start a prospective study on patients who underwent ThuLEP in order to investigate the immediate post-operative irritative symptoms. All candidates for surgical therapy present of lower urinary tract symptoms (LUTS) and obstruction due to a prostate gland enlargement. All these patients have LUTS refractory to medical management. Thulium laser prostatectomy was performed by Quanta Cyber TM Thulium Laser.
Results: A total of 200 patients performed the surgical treatment. The patients' mean age was 67.4 years. Mean preoperative prostatic adenoma volume was 78 mL. Forty-six of the patients have an indwelling urethral catheter. Mean total operative time, including cystoscopy, enucleation and morcellation was 84 min. The average Foley catheter-time was respectively of 36 hours. IPSS, QoL and F Max improvement don't vary considering prostate volume, the presence of an indwelling urethral catheter and a significant PVR. In all, 4% of the patients reported urge incontinence 7 days after the procedure that reduce to 0.5 % at 30 days after the procedure and disappeared in the follow-up period. Urgency was present in the 12% of the patients 7 days after the procedure that reduce to 5 % at 30 days after the procedure and disappeared in the follow-up period. Mean follow-up was of 14 months (range 1-24 months). The result in reduction of IPSS, improvement of QoL, F Max were maintained in time.
Conclusion: ThuLEP and the reduced depth of coagulation zone in the prostate tissue could explain the reduction of these symptoms in the immediate post-operatory period. So, the use of ThuLEP can reduce the frustrating irritative symptoms in the immediate post-operatory period, with equivalent results in the relief of LUTS and uroflowmetry parameter in the long period follow-up.

MP-02.14

Holmium Laser Enucleation of the Prostate: Validation of a Virtual Reality Simulator

Kuronen-Stewart C[1], Ahmed K[1], Aydin A[1], Khan M[2], Dasgupta P[1], Challacombe B[2], Popert R[2]

[1]King's College London, London, UK; [2]Guy's Hospital, London, UK

Introduction and Objectives: Holmium laser enucleation of the prostate (HoLEP), though proven an effective and worthwhile surgery, is a difficult operation to learn associated with a long learning curve. Virtual reality simulation with its novel and varied capabilities may allow the learning curve to be shortened. However, validation is required to assess its potential for use in training. The objective of this study was to assess the Face, Content, and Construct validity of the VirtaMed UroSim™ simulator (VirtaMed AG, Zurich, Switzerland).

Materials and Methods: This prospective observational study recruited 42 participants, comprising of expert HoLEP surgeons (>100 HoLEPs, n=6), Enodurological trainees without HoLEP experience (n=18), and HoLEP novices (n=18). All participants received the same educational package on HoLEP, comprising of didactic lectures on technique, instructional videos, and videos of live surgeries. They then completed a 15-minute familiarisation exercise consisting of a cystoscopy exercise with the VirtaMed UroSim™ simulator (VirtaMed AG, Zurich, Switzerland) before carrying out a full enucleation on a standardised 60cc prostate. Data was collected using in-built simulator metrics and a quantitative questionnaire. The Mann-Whitney U test was used to compare expert, trainee, and novice groups.

Results: Experts had a significantly increased enucleation efficiency (grams enucleated/hour) compared to Endourological trainees ($p<0.001$) and to Novices ($p<0.001$), with trainees significantly outperforming novices ($p<0.001$). Intraoperative complications were also increased in the novice group, with external sphincter damage being twice as common among novices compared to experts.

86% of participants agreed that simulator based assessment is essential for patient safety, 61% thought that the overall experience was similar to the real life setting, and 87% agreed that there was a role for a validated VR simulator for use in HoLEP training. Eighty two percent thought it feasible to incorporate simulation into training programmes, and 68% of non-experts reported that the simulation session had improved their skills.

Conclusion: This study demonstrated construct, face, and content validity for this novel Virtual reality HoLEP simulator. The majority of participants also agreed that it was a feasible and acceptable training model.

MP-02.15

Prospective Randomized Controlled Trial Comparing GreenLight 180-W XPS PVP and Transurethral Resection of Prostate for the Treatment of Benign Prostate Obstruction (The Goliath Study): One-Year Analysis of Sexual Function and General Health Status Stratified by Prostate Size

Thomas A[1], Tubaro A[2], Barber N[3], d'Ancona F[4], Muir G[5], Witzsch U[6], Grimm M[7], Benejam J[8], Stolzenburg J[9], Riddick A[10], Pahernik S[11], Roelink H[12], Ameye F[13], Saussine C[14], Bruyère F[15], Loidl W[16], Larner T[17], Gogoi N[18], Hindley R[19], Muschter R[20], Thorpe A[21], Shrotri N[22], Graham S[23], Hamann M[24], Miller K[25] , Schostak M[26] , Capitán C[27], Knispel H[28], Bachmann A[29]

[1]Dept. of Urology, Princess of Wales Hospital, Bridgend, UK; [2]Dept. of Urology, Sant'Andrea Hospital, Sapienza University of Rome, Rome, Italy; [3]Dept. of Urology, Frimley Park Hospital, Frimley, Camberley , UK; [4]Dept. of Urology, Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands; [5]Dept. of Urology, King's College Hospital and King's Health Partners, London, UK; [6]Dept. of Urology and Pediatric Urology, Krankenhaus Nordwest, Frankfurt, Germany; [7]Dept. of Urology, University Hospital of Jena, Jena, Germany; [8]Dept. of Urology, Hospital de Manacor, Manacor, Spain; [9]Dept. of Urology, Universitätsklinikum Leipzig, Leipzig, Germany; [10]Addenbrookes Hospital, Cambridge, UK; [11]Dept. of Urology, University Hospital of Heidelberg, Heidelberg, Germany; [12]Dept. of Urology, Ziekenhuis Groep Twente, Almelo/Hengelo, The Netherlands; [13]Dept. of Urology, AZ Maria Middelares Gent, Gent, Belgium; [14]Dept. of Urology, Nouvel Hopital Civil de Strasbourg, Strasbourg University, Strasbourg, France; [15]Dept. of Urology, CHRU Bretonneau, Tours, France; Université François Rabelais de Tours, PRES Centre- Val de Loire Université, Tours, France; [16]Dept. of Urology, Krankenhaus der Barmherzigen Schwestern Linz, Linz, Austria; [17]Dept. of Urology, Brighton and Sussex University Hospitals NHS Trust, Brighton, UK; [18]Dept. of Urology, Mid Yorkshire NHS Trust, Dewsbury and District Hospital, Dewsbury, UK; [19]Dept. of Urology, Basingstoke and North Hampshire NHS Foundation Trust, Hampshire, UK; [20]Dept. of Urology, Diakoniekrankenhaus Rotenburg, Rotenburg, Germany; [21]Dept. of Urology, Freeman Hospital Newcastle, Newcastle-upon-Tyne, UK; [22]Dept. of Urology, Kent and Canterbury Hospital, Kent, UK; [23]Dept. of Urology, Whipps Cross University Hospital, London, UK; [24]Dept. of Urology, Universitätsklinikum Schleswig-Holstein, Campus Kiel, Kiel, Germany; [25]Dept. of Urology, Charite, Berlin, Germany; [26]Dept. of Urology, University Hospital Magdeburg, Magdeburg, Germany; [27]Dept. of Urology, Hospital Universitario Fundacion Alcorcon, Madrid, Spain; [28]Dept. of Urology, Uro-Forschungs GmbH im St. Hedwig Krankenhaus, Berlin, Germany; [29]Dept. of Urology Basel, University Hospital Basel, University Basel, Basel, Switzerland

Introduction and Objectives: To prospectively evaluate at one year, changes in sexual function and general health status by prostate size in men undergoing XPS or TURP in a large RCT for benign prostate obstruction.

Materials and Methods: A total of 291 patients at 29 sites in 9 European countries were randomized 1:1 to undergo XPS or TURP.

MP-02.15, Table 1.

	Total			XPS			TURP			p value		
Event	**XPS**	**TURP**	**P value**	**Small (≤40)**	**Medium (40-80)**	**Large (≥80)**	**Small (≤40)**	**Medium (40-80)**	**Large (≥80)**	**Small**	**Medium**	**Large**
Retrograde ejaculation - de novo	91 (66.9%) (n=136)	89 (66.9%) (n=133)	1.000	39 (73.6%) (n=53)	47 (64.4%) (n=73)	5 (50.0%) (n=10)	35 (58.3%) (n=60)	46 (73.0%) (n=63)	8 (80.0%) (n=10)	0.113	0.356	0.350
IIEF-5 Total at Baseline	13.2 ± 7.6 (n=132)	13.7 ± 7.5 (n=129)	0.639	13.0 ± 8.2 (n=53)	13.1 ± 7.3 (n=69)	15.2 ± 5.5 (n=10)	13.6 ± 7.5 (n=58)	14.2 ± 7.7 (n=61)	11.2 ± 7.0 (n=10)	0.705	0.429	0.173
IIEF-5 Total at 12 Months	12.8 ± 7.5 (n=128)	14.1 ± 8.2 (n=119)	0.189	12.5 ± 8.0 (n=50)	12.5 ± 7.2 (n=68)	16.3 ± 6.8 (n=10)	14.9 ± 7.1 (n=55)	13.5 ± 9.1 (n=57)	13.7 ± 10.1 (n=7)	0.118	0.501	0.537

General health status was evaluated by the EQ-5D-3L questionnaire (index score and visual scale) at baseline, 3 weeks, 6 months and 1 year. Erectile function and ejaculatory status were analysed at baseline and at one year. The results were stratified by a baseline TRUS prostate volume (≤40ml, 40-80ml, and ≥80ml).

Results: Of the 291 patients, 269 received treatment. After one year, 95.5% of the treated patients remained in the trial (130 XPS and 127 TURP). De novo retrograde ejaculation occurred in 66.9% after XPS and 66.9% post TURP (p=1.000), with no significant difference for any prostate size (Table 1). Mean IIEF-5 score at baseline was similar in both groups, 13.2±7.6 for XPS, versus 13.7±7.5 for TURP (p= 0.639). At 1 year, there was a minor decrease in mean IIEF-5 after XPS to 12.8±7.5 and a minor increase with TURP to 14.1±8.2, with no significant difference between XPS and TURP (p=0.189), for any prostate size (Table 1). The mean EQ-5D-3L baseline index score and visual scale were similar in XPS (0.8±0.2; 74.5±15.1) and TURP (0.8±0.2; 72.9±17.9). Similar improvements in quality of life were seen with both techniques at 3 weeks and were maintained at 1 year.

Conclusions:

1. There are no deleterious effects to general health or erectile function in the first year after either XPS or TURP.
2. The incidence of de novo retrograde ejaculation is similar with XPS and TURP and the difference was not statistically significant for any prostate size.

MP-02.16

The Use of the 180W XPS 'Greenlight' Laser in Men with Refractory Urinary Retention

Jones J, Laird A, Lingard J, Riddick A, Cuttress M, Phipps S

Dept. of Urology, NHS Lothian, Western General Hospital, Edinburgh, UK

Introduction and Objectives: Urinary retention is an established marker of disease progression in benign prostatic hyperplasia (BPH) and an indicator for surgical intervention, with monopolar transurethral resection of prostate (TURP) remaining the gold-standard treatment. Photoselective-vaporisation of prostate (PVP) has proven to be effective for men with BPH however few reports exist of use in men with urinary retention. The aim of this study was to determine the safety and efficacy of PVP 180W XPS 'Greenlight' laser prostatectomy (XPS-GLLP) in men with refractory urinary retention in our institution.

Materials and Methods: From a prospectively maintained database, patients with refractory urinary retention undergoing XPS-GLLP between October 2010-2013 were identified. Notes were reviewed retrospectively for age, PSA, presenting symptoms, intra-operative details, complications and outcomes.

Results: A total of 155 patients were identified with a mean age of 74 years (52-93 years) and PSA of 7.3 (0.2-89). Pre-operatively 14 patients were undertaking intermittent self-catheterisation and 141 catheterised, for a median duration of 5 months (0.5–28 months). Thirty nine patients had high-pressure systems and 16 had known prostate cancer. Intra-operatively the mean lasing time was 25:42 minutes and mean energy used was 203,397kJ. All patients were catheterised routinely post-procedure. The mean hospitalisation was 23 hours (12 hours–10 days). Within 30-days, 25 (16.1%) patients had documented complications (3 with urinary retention, 12 with urinary-tract infections, 8 with significant haematuria). Of these patients, 18 (11.6%) required re-admission, of whom two required surgical intervention for ongoing haematuria. At a median 18 months (5-39 months) follow-up, the catheter-free rate was 88.5%, with mean IPSS/QOL scores of 4 and 1 respectively at 6 months post-operatively. Ten (6.5%) patients have required secondary treatments (1 bladder neck incision, 2 urethral dilatations and 7 further XPS-GLLP for residual tissue).

Conclusions: To our knowledge, this is one of the first reports of the use of XPS-GLLP in the management of refractory urinary retention. We show XPS-GLLP to be an effective treatment option for these patients, with short hospitalisation and catheterisation times, high safety profile and almost 90% success rate. XPS-GLLP therefore offers an excellent alternative to traditional TURP in men with refractory urinary retention.

MP-02.17

First-in-Human Clinical Experience of a Novel Treatment for BPH: Image Guided Robotically-Assisted Waterjet Ablation of the Prostate

Gilling P[1], Karpman E[2], Mantri S[2], Aljuri N[2]

[1]Tauranga Hospital, Tauranga, New Zealand; [2]Procept Biorobotics, Redwood City, USA

Introduction and Objectives: To report the initial clinical experience in males with symptomatic BPH undergoing ablation of the prostatic adenoma using a novel robotic water-jet technology (Aquablation™, PROCEPT BioRobotics, Redwood Shores, CA).

Materials and Methods: The Aquablation System incorporates a console, a fixed robotic arm and a probe that delivers a high power saline stream designed to selectively excise prostatic adenoma under the direct visual guidance of real-time trans-rectal ultrasound (TRUS). To obtain hemostasis standard electro cautery can be used as necessary.

Results: Sixteen males with symptomatic BPH were enrolled and 15 males were treated with Aquablation. Monitored data are available on all 15 males treated. The mean age was 73 years (SD=7.1, 59-86) and baseline prostate size of 54g (SD=17.4, 27-85). A median lobe was present in 6 of the 15 subjects treated. All procedures were technically successful with a mean operative time of 45 minutes (SD=17.9, 25-94) and Aquablation treatment time of 8.2 minutes (6.5, 2.0-22.3). No cases of urinary incontinence or erectile dysfunction were reported. Other peri-operative complications were comparable to those observed with other available BPH therapies. Quality of life and functional outcomes are summarized in the following table.

Conclusions: The preliminary results from this initial study show promise for this treatment as a potential ablative treatment option for BPH. Further patient data will be required to validate this early clinical experience.

MP-02.18

Greenlight XPS-180W Laser Vaporization of the Prostate for Benign Prostatic Hyperplasia: A Global, Multi-Center Study Including 1053 Patients, Analysis of Complication Rates and Outcomes at 2 Years According to Prostate Size

Hueber P[1], Bienz M[2], Liberman D[1], Misrai V[3], Rutman M[4], Te A[5], Chughtai B[5], Barber N[6], Emara A[6], Gonzalez R[7], **Zorn K**[1]

MP-02.17, Table 1.

Variable	Baseline n = 14*	1 month n = 14*	3 month n = 10*
IPSS **Mean Change from Baseline**	23.1 (4.9, 16 – 33) -	11.8 (6.8, 3 – 27) **-11.3**	7.8 (4.6, 3 – 19) **-14.7**
Quality of Life **Mean Change from Baseline**	5.0 (0.9, 4 – 6) -	2.6 (1.9, 0 – 6) **-2.4**	1.5 (0.8, 0 – 3) **-3.6**
Qmax (ml/s) **Mean Change from Baseline**	8.6 (2.0, 4.8 – 12.1) -	13.8 (6.1, 7.5 – 27.9) **5.2**	16.3 (5.4, 9.4 – 26.0) **7.9**

*Matched patients. One patient was not available for follow up at 1 month

[1]University of Montreal Hospital Center, Montreal, Canada; [2]University of Montreal, Montreal, Canada; [3]Clinique Pasteur Toulouse, Toulouse, France; [4]Columbia University, New York, USA; [5]Cornell University, New York, USA; [6]Frimley Park Hospital, Frimley, UK; [7]Baylor College of Medicine, Houston, USA

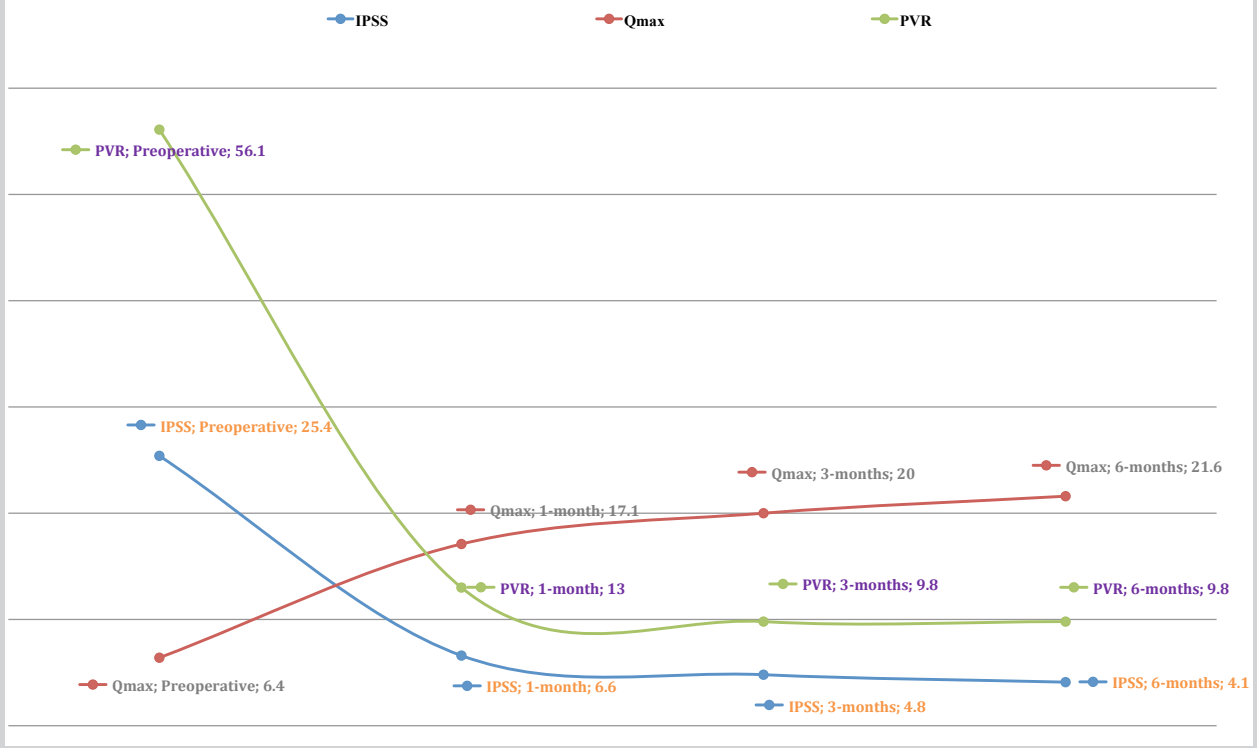
Introduction and Objectives: The aim of this study was to evaluate the safety and outcomes at 2 years of the new Greenlight XPS-180W laser system (AMS, Minnetonka, MI, USA) for the treatment of BPH in a large multicenter cohort. In addition analysis of safety and efficacy was assessed according to prostate size.
Materials and Methods: A total of 1053 patients underwent Greenlight laser photoselective vaporization in 6 international centers between 2010 and 2012. Perioperative variables IPSS, QoL, Qmax, post-void residual (PVR) and PSA levels were recorded at baseline, 3-6-12-24 months post-operatively when available. Patients were stratified according to prostate volume ± 80 cc.
Results: Patients' mean age was 70.17±9.23 years, with a PV of 74.54±45.1 cc and PSA of 4.38±5.00 ng/ml. In between prostate size groups, age (70.45 vs. 67.36 years), PSA (5.8 vs. 3.9 ng/ml), IPSS (22.5 vs. 20.8), Qmax (6.1 vs. 7.1ml/s) and PVR (267 vs. 202 ml) were significantly different (p<0.001). Mean operative time (96.4 vs. 55.8 min), laser time (55 vs. 28 min) and energy usages (402.8 vs. 211 kJ) were all significantly increased in prostates >80cc. Conversion to TURP was more prevalent in patients with larger glands (11.2% vs. 1.1%; p<0.001). All other rates of complications including perforation (0.6% vs. 0.6%), bleeding obscuring vision (3.8% vs. 6.7%), bleeding hematuria (0.5 vs. 0%) and blood transfusion (0.3% vs. 0.5%) were relatively low and without significant incidence between groups. Significant improvements compared to baseline were noted in all key clinical outcome parameters postoperatively at 3, 6, 12 and 24 months without significant difference between the two groups. At 24 months compared to baseline, median IPSS decreased from 21.0 to 4.2 while Qmax increased from 6.9 to 19 and QoL improved from 5 to 1. Mean PSA decreased from 4.4 to 2.7 (p<0.05).
Conclusion: XPS systems provide safe and effective tissue vaporization with significant clinical relief of BPH obstruction associated with objective outcomes and PSA reduction at 24 months confirming the mid-term durability of this procedure regardless of prostate size. Nevertheless, prostate volume has direct implications on operating parameters and was associated with a higher conversion to TURP.

MP-02.19
Management of Benign Prostatic Obstruction Using Bipolar Plasma Kinetic Energy in Coagulopathic Patients: Initial Series

Abou- Taleb A, Khalil M, Sebaey A, Shaher H, Abdelbaky A, **Noureldin Y**
Dept. of Urology, Benha University Hospitals, Benha University, Kalyobiya, Egypt

Introduction and Objectives: To assess feasibility, safety and efficacy of bipolar plasma kinetic energy for management of benign prostatic obstruction (BPO) in patients on anticoagulant therapy (ACT) or platelet aggregation inhibitors (PAIs).
Materials and Methods: After institutional review board approval, transurethral bipolar plasma kinetic enucleation of the prostate was performed in patients presenting with BPO and on concomitant ACT or PAIs. Patient demographics and perioperative data were collected. Moreover, the type of ongoing ACT or PAIs was recorded. Patients' Baseline and follow-up data were compared in terms of the International Prostate Symptoms Score (IPSS), peak flow rate (Qmax) and residual urine volume (PVR) at 1, 3, and 6 months using paired *t*-test.
Results: Between December 2012 and February 2014, 30 patients underwent transurethral bipolar plasma kinetic enucleation of the prostate was included. Seven patients were on oral ACT (Warfarin) whereas 23 patients were on PAIs,

MP-02.19, Figure 1. Follow-Up Data of the Improvements in IPSS, Qmax (Ml/S), And PVR (Ml) from the Baseline at 1, 3, and 6 Months



including 18 on Acetyl Salicylic Acid (ASA) and 5 on Clopidogrel Bisulfate. Patients on Warfarin were shifted to low molecular weight heparin preoperatively; meanwhile Clopidogrel or ASA was continued perioperatively. The median age was 68.5 years (range: 60-80), with median prostate volume of 60cc (30-100), median PSA of 2.4 ng/ml (1-4), median preoperative hemoglobin (Hb) of 12.8 gm/dL (11-15). Five patients (16.7%) presented with preoperative indwelling urethral catheter secondary to refractory urinary retention. The mean preoperative IPSS, Qmax, and PVR were 25.4±0.6, 6.4±0.3 mL/sec, and 56.1±3.0 mL, respectively. Only one patient (3.3%) had intraoperative bleeding necessitaed blood transfusion. Two patients (6.7%) failed to void after catheter removal. No patients developed either thromboembolic complications or post transurethral resection (TUR) syndrome. Postoperative Hb was comparable to the preoperative level (12 vs. 12.8, $p>0.05$). Mean hospital stay and catheter time were 25.7±10.6 hours, and 16±4.1hours, respectively. IPSS, Qmax, and PVR significantly improved at all follow-up times (all $p<0.001$) (Figure 1).
Conclusion: Transurethral Bipolar Plasma kinetic Enucleation of the Prostate seems to be feasible, safe and effective in management of coagulopathic patients with BPO. It is associated with less bleeding, short catheterization time and hospital stay.

Moderated Poster Session 3
Prostate Cancer: Detection & Screening
Monday, October 13
1300-1430

MP-03.01

Early Detection of Clinically Significant Prostate Cancer: Low Free Prostate-Specific Antigen Levels as a Criterion for Prostate Biopsy in Patients with Low Total Prostate-Specific Antigen Levels

Sasaki M[1], Ishidoya S[2], Ito A[3], Numahata K[1], Shibuya D[4], Arai Y[3]

[1]Yamagata Prefectural Central Hospital, Yamagata, Japan; [2]Sendai City Hospital, Sendai, Japan; [3]Tohoku University Graduate School of Medicine, Sendai, Japan; [4]Miyagi Cancer Society, Sendai, Japan

Introduction and Objectives: The present study investigated whether applying the fPSA ratio (%fPSA) as a criterion for prostate biopsy in patients with low PSA (≤4.0 ng/mL) could facilitate early diagnosis of clinically significant prostate cancer.

Materials and Methods: Subjects comprised 9,522 patients (age range, 40-79 years) who underwent screening for prostate cancer between July 2001 and June 2011. Patients with %fPSA ≤12% and PSA 2.0–10.0 ng/mL with no gaps in prostate biopsy histopathological diagnosis (n=260) were divided into the following two PSA groups: low (PSA: 2.0–4.0 ng/mL) and mildly elevated (PSA: 4.1–10.0 ng/mL). Malignancy was evaluated based on Gleason scores of biopsy specimens. Statistical significance was assessed using Pearson's χ^2 test.

Results: Median age (range), PSA, and %fPSA were 66 years (49–79 years), 4.5 ng/mL (2.1–9.8 ng/mL), and 9.9% (3.5–12.0%), respectively. A total of 129 patients (49.6%) were diagnosed with prostate cancer based on biopsy of all patients in the low PSA (n=114, 43.8%) and mildly elevated PSA (n=146, 56.2%) groups. No significant differences were observed between the low PSA group (43.9%) and the mildly elevated PSA group (54.1%; p=0.1010) in prostate cancer detection rate. Patients were then further classified as low, medium, or high risk (Gleason scores ≤6, 7 and ≥8, respectively) based on biopsy histopathological diagnosis. However, no significant differences were observed between the low and mildly elevated PSA groups (p=0.9974) in malignancy. Overall detection rate in the medium- and high-risk patients was 76%, and highly malignant prostate cancer was efficiently detected.

Conclusion: If %fPSA is low, clinically significant prostate cancer is likely to be diagnosed, even in patients with low total PSA (2.0–4.0 ng/mL). A high detection rate of 76% was achieved in medium- and high-risk patients, demonstrating that highly malignant prostate cancer was efficiently detected. In addition to existing criteria such as age and total PSA, including %fPSA as a criterion for prostate biopsy could facilitate early diagnosis of clinically significant prostate cancer, even in patients with low total PSA.

MP-03.02

Performance of Serum Prostate-specific Antigen Isoform [-2]proPSA (p2PSA) and the Prostate Health Index (PHI) in a Chinese Hospital-based Biopsy Population

Na R[1], Ye D[2], Liu F[3], Chen H[4], Qi J[5], Wu Y[1], Sun J[6], Jiang H[1], Ding Q[1], Xu J[6], Zhang L[1], Wang M[6], Wang W[6], Sun J[6], Yu G[1], Zhu Y[2], Zheng L[6]

[1]Fudan Institute of Urology and Dept. of Urology, Huashan Hospital, Fudan University, Shanghai, China; [2]Dept. of Urology, Fudan University Shanghai Cancer Center and Dept. of Oncology, Shanghai Medical College, Fudan University, Shanghai, China; [3]Fudan Institute of Urology, Huashan Hospital, Fudan University, Shanghai, China; [4]State Key Laboratory of Genetic Engineering, School of Life Science, Fudan University, Shanghai, China; [5]Dept. of Urology, Xinhua Hospital, School of Medicine, Shanghai Jiaotong University, Shanghai, China; [6]Center for Cancer Genomics, Wake Forest School of Medicine, Winston-Salem, USA

Introduction and Objectives: The performance of serum p2PSA and its derivative, the prostate health index (PHI), in detecting prostate cancer (PCa) from prostate biopsy has been extensively evaluated in the United States and Europe. However, their performance in Chinese patients has not been reported.

Materials and Methods: We recruited consecutive patients who underwent prostate biopsy in three tertiary hospitals in Shanghai, China, during 2012-2013. Serum total PSA (tPSA), free PSA (fPSA), and p2PSA were measured. Discriminative performance of PCa and high-grade PCa were assessed using the area under the receiver operating characteristic curve (AUC) and detection rate. High-grade PCa was defined as having a Gleason Score of 4+3 or worse.

Results: Among 636 patients who underwent prostate biopsy (mean age=68.8 years), 274 (43.1%) and 158 (24.8%) were diagnosed with PCa and high-grade PCa, respectively. The AUC for discriminating PCa and non-PCa was 0.81, 0.75, 0.84, and 0.88 for tPSA, fPSA, p2PSA, and PHI, respectively, and the AUC for discriminating high-grade PCa from all others was 0.83, 0.78, 0.84, and 0.86 for tPSA, fPSA, p2PSA, and PHI, respectively. The difference in the AUC between PHI and tPSA was 0.07 for discriminating PCa, P=1.94x10^{-6}, and 0.03 for discriminating high-grade PCa, P=0.06. In the patients with tPSA 2-10 ng/mL, the difference in the AUC between PHI and tPSA was larger for discriminating PCa (0.71-0.51=0.20, P=8.08x10^{-3}) and for discriminating high-grade PCa (0.69-0.54=0.15, P=0.33). The added value of PHI over tPSA was also demonstrated by PCa detection rate (Table 1). For example, in patients with tPSA 2-10 ng/mL where the average detection rate of PCa and high-grade PCa was 17.6% and 6.3%, these rates raised to 60% and 40% if they were in the highest quartile of PHI.

Conclusion: PHI provided added value over tPSA in discriminating PCa and high-grade PCa in men who underwent prostate biopsy in China.

MP-03.02, Table 1. Detection rate of prostate cancer and high-grade prostate cancer based on tPSA and PHI

		Detection rate (95%CI) of PCa based on PHI				Detection rate (95%CI) of high-grade PCa based on PHI			
tPSA level (ng/mL)	No. of Patients	All	Low(Q1)	Mid(Q2-Q3)	High (Q4)	All	Low(Q1)	Mid(Q2-Q3)	High (Q4)
2.0-10.0	222	17.6 (12.8-23.2)	8.4 (3.7-15.9)	23.0 (15.8-31.4)	60.0 (14.7-94.7)	6.3 (3.5-10.4)	2.1 (0.3-7.4)	8.2 (4.0-14.6)	40.0 (5.3-85.3)
10.1-19.99	178	36.5 (29.4-44.1)	6.8 (1.4-18.7)	44.4 (35.4-53.6)	70.0 (34.7-93.3)	14.6 (9.8-20.7)	2.3 (0.1-12.0)	18.6 (12.1-26.5)	20.0 (2.5-55.6)
≥20.0	215	75.8 (69.5-81.4)	10.0 (0.3-44.5)	46.9 (34.3-59.8)	93.6 (88.2-97.0)	53.0 (47.1-59.8)	10.0 (0.3-44.5)	28.1 (17.6-40.8)	67.4 (59.0-75.0)

tPSA: total PSA; PHI: Prostate Health Index; Q: quartile; PCa: prostate cancer

MP-03.03

The Rotterdam Prostate Cancer Risk Calculator: Improved Prediction with More Relevant Pre-Biopsy Information, Now in the Palm of Your Hand

Roobol M[1], Azevedo N[2]

[1]Dept. of Urology, Erasmus University Medical Center, Rotterdam, The Netherlands; [2]Dept. of Urology, Hospital do Espírito Santo, Évora, Portugal

Introduction and Objectives: The Rotterdam prostate cancer risk calculator (RPCRC, www.prostatecancer-riskcalculator.org/ www.uroweb.org) has been developed to risk stratify potential candidates for a prostate biopsy. To improve the user-friendliness and accessibility the risk calculator has been transformed to a mobile application (app, Figures 1 right). Here we assess the change in predictive capability when using more relevant pre biopsy information in the form of a decision tree incorporated into the app (Figure 1 left).

Materials and Methods: Analyses are based on the biopsy outcome of 3,600 men screened for the first time and 2,910 men with a previous PSA test/biopsy within ERSPC, section Rotterdam. Predictive capability of models within the RPCRC app (1: PSA alone, 2: PSA+DRE, 3: PSA+DRE+DRE assessed volume, 4: PSA+DRE+TRUS+volume) were assessed in terms of discrimination (C-statistic) for both predicting the probability of PC on biopsy and serious PC (defined as > T2B and/or Gleason ≥ 7).

Results: Applying model 1 to model 4 resulted in AUC's of from 0.69 respectively 0.79 for predicting PC and AUC's for predicting serious PC of 0.74 respectively 0.86. Similar data for men with a previous PSA test/ Biopsy were 0.62 respectively 0.69 for predicting PC and 0.69 respectively 0.82 for predicting serious PC (Table 1), confirming that including more relevant information increases predictive capability.

MP-03.03, Table 1 and Figure 1.

No previous biopsy	Predicting PC on biopsy (AUC)	95% CI	Predicting serious PC on biopsy (AUC)	95% CI
1. PSA	0.69	0.67-0.71	0.74	0.71-0.77
2. PSA+DRE	0.73	0.71-0.75	0.82	0.79-0.84
3. PSA +DRE+DRE ass. volume	0.77	0.75-0.79	0.85	0.82-0.87
4. PSA+DRE+TRUS+volume	0.79	0.77-0.81	0.86	0.84-0.88
Previous PSA test/biopsy				
1. PSA	0.62	0.59-0.64	0.69	0.65-0.74
2. PSA+DRE	0.64	0.62-0.67	0.78	0.74-0.82
3. PSA +DRE+DRE ass. volume	0.68	0.65-0.71	0.81	0.78-0.85
4. PSA+DRE+TRUS+volume	0.69	0.66-0.71	0.82	0.79-0.86

Conclusion: The Rotterdam risk calculators, based on the robust data from the ERSPC, section Rotterdam, were developed with the prime objective of helping to reduce unnecessary biopsies and the over-diagnosis of indolent prostate cancers. The new mobile app tool takes this one step further, providing doctors and patients with an increasingly powerful tool which is easy to use and always accessible.

MP-03.04

Validation of PSA-Age Volume (PSA-AV) Formula for Predicting Prostate Biopsy Outcomes in a UK Cohort

Thakare N, Chinegwundoh F
Barts Health NHS Trust, London, UK

Introduction and Objectives: Predictive tools for prostate cancer diagnosis have been devised since PSA alone is an inaccurate marker. A novel formula [Patel et al. Urology 2013; 81(3): 602-606] incorporates PSA, age, prostate volume and ethnicity to predict positive biopsy rates. PSA-AV score obtained using these variables with a cut-off value of 700 is considered significant. We evaluated the predictive value of this score in a UK cohort of men undergoing transrectal prostate biopsy.
Materials and Methods: Men who underwent TRUS biopsies were retrospectively included in the study. PSA-AV score was calculated using PSA level, age and prostate volume for each patient. In African-Caribbean men, a multiplication factor of 0.9 was used to adjust for increased risk, in keeping with the original study. Receiver Operating Characteristic (ROC) curve analysis was performed to assess the diagnostic utility of the PSA-AV formula.
Results: Data was analysed for 301 men, 46% Caucasian and 34% African-Caribbean. Median age was 68; PSA 9.7; prostate volume 43cc and cancer was detected in 50.16% (151/301). Positive biopsies and Gleason scores for different PSA-AV values are summarized (Table 1). ROC curve analysis showed good discriminative ability with AUC=0.75 (0.70–0.80; 95% CI), p<0.001. For a cut-off value of 700, the PSA-AV score had a sensitivity of 98% and specificity of 17% with positive predictive value (PPV) of 54%. With a cut-off of 500, sensitivity was 91%, specificity 29% and PPV 56%.
Conclusion: The PSA-AV formula has good predictability and higher PPV than PSA. A cut-off value of 700 has high sensitivity to exclude positive biopsy. In our study, the significance of the score improved when a lower cut-off was used. It has a role in cancer detection risk counseling for men with raised PSA.

MP-03.05

Poor Glycemic Control of Diabetes Mellitus Is Associated with Higher Risk of Prostate Cancer Detection in a Biopsy Population

Park J[1], Cho S[1], Lee Y[2], Lee S[1], Son H[1], Jeong H[1]
[1]Metropolitan Government Seoul National University Boramae Medical Center, Seoul, South Korea; [2]Seoul National University Hospital, Seoul, South Korea

Introduction and Objectives: We evaluated the impact of glycemic control of DM on prostate cancer detection in a biopsy population.
Materials and Methods: We retrospectively reviewed the records of 1,368 men who underwent prostate biopsy at our institution. We divided our biopsy population into three groups according to their history of DM, and their Hemoglobin A1c (HbA1c) level: a no-DM (DM–) group; a good glycemic control (DM+GC) group (HbA1c < 6.5%); and a poor glycemic control (DM+PC) group (HbA1c ≥ 6.5%). For subgroup analyses, the DM+PC group was divided into a moderately poor glycemic control (DM+mPC) group (6.5 ≤ HbA1c < 7.5%) and a severely poor glycemic control (DM+sPC) group (HbA1c ≥ 7.5%).
Results: Among 1,368 men, 338 (24.7%) had a history of DM, and 393 (28.7%) had a positive biopsy. In men with negative biopsies, the mean prostate-specific antigen (PSA) level was significantly different among the groups (P = 0.015), and the figure was 9.10 ng/ml in DM– group, 7.52 ng/ml in DM+GC group, 7.28 ng/ml in DM+PC group. In the multivariate analysis, the DM+PC group was significantly associated with a higher rate of overall prostate cancer detection in biopsy subjects compared to the DM– group (OR = 2.313, P = 0.001). In subgroup analysis, DM+sPC group (HbA1c ≥ 7.5%) was significantly related to a higher risk of high-grade diseases compared to the DM– group (OR = 2.446, P = 0.048).
Conclusion: In men with negative biopsies, the mean PSA level was significantly different according to the history of DM, and the HbA1c level. Poor glycemic control of DM was associated with a higher risk of prostate cancer detection, including high-grade disease, in the biopsy population.

MP-03.06

Impact of the U.S. Preventive Services Task Force Recommendations against PSA-based Screening on Prostate Biopsy and Cancer Detection Rates

Bhindi B[1], Mamdani M[2], Kulkarni G[1], Finelli A[1], Hamilton R[1], Trachtenberg J[1], Zlotta A[1], Toi A[1], van der Kwast T[1], Evans A[1], Fleshner N[1]
[1]University Health Network, Toronto, Canada; [2]St. Michael's Hospital, Toronto, Canada

Introduction and Objectives: In May 2012, the U.S. Preventive Services Task Force (USPSTF) released recommendations against routine Prostate-Specific-Antigen (PSA) screening for prostate cancer (PC). Our study objective was to examine if our institutional biopsy rates and cancer detection rates have changed following the USPSTF recommendation using a time-series analysis.
Materials and Methods: We examined our institutional prostate biopsy database from Oct. 2008 to Jun. 2013. Biopsies for active surveillance or solely targeting MRI-detected lesions were excluded. Low risk PC (LRPC) was defined as no Gleason pattern ≥4, ≤3 cores involved or ≤1/3 of total number of cores involved, and no core with >50% cancer involvement. High grade PC (HGPC) was defined as Gleason 7-10. A time-series analysis using interventional auto-regressive integrated moving average (ARIMA) models with step intervention functions were conducted to examine the effect of the recommendations on number of biopsies performed and cancer detection per month.
Results: Within the study period, 3408 biopsies were performed and 1601 (47.0%) PCs were detected (LRPC = 563 (16.5%); HGPC = 914 (26.8%)). The median for biopsies per month decreased from 64 (IQR=58-78) before recommendations to 34 (IQR=27-39) afterward (p=0.003), while median number of patients undergoing their first-time biopsies decreased from 45 (IQR=41-57.5) to 24 (IQR=20-32, p=0.025). The median number of LRPCs detected per month decreased from 10 (IQR=8-14) to 5 (IQR=4-7, p=0.012), while the median number of HGPCs detected per month decreased from 17 (IQR=15.5-21) to 10 (IQR=9-11, p<0.001).
Conclusion: Since the USPSTF recommendations, the number of biopsies performed (total and first-time biopsies), based on referrals from our catchment area, have decreased. This is likely due to decreased PSA-screening and referral by general practitioners. Although encouraging that less low risk PCs are being diagnosed, the magnitude of sudden decrease in detection rate of Gleason 7-10 PCs is concerning.

MP-03.04, Table 1. Positive Biopsy Findings for Different PSA-AV Score Categories

PSA-AV score	Positive Biopsy (%)	Gleason 6	Gleason 7	Gleason >7
<300	105/163 (64.4%)	17	53	35
300 - 500	33/81 (40.7%)	7	20	6
500 - 700	10/29 (34.5%)	5	5	0
>700	3/28 (10.7%)	0	2	1

MP-03.07

Demographics, Clinical and Pathological According to the Prostate Biopsy Scheme: A Prospective Multicenter Study

Plata Bello A[1], Concepcion Masip T[1], Cózar Olmo J[2], Miñana López B[3], Gómez Veiga F[4], Rodríguez Antolín A[5], GESCAP GROUP[6]

[1]Dept. of Urology, University Hospital of Canary Islands, La Laguna, Spain; [2]Hospital Virgen de las Nieves, Granada, Spain; [3]Hospital Morales Meseguer, Murcia, Spain; [4]C.H.U.A.C, A Coruña, Spain; [5]Hospital 12 de Octubre, Madrid, Spain; [6]Spanish group of prostate cancer research-25 institutions

Introduction and Objectives: Current data support the utility of extended and saturation schemes in TRUS prostate biopsy instead of the traditional sextant scheme proposed by Hodge. The aim of this study is to compare diagnosis features (demographics, clinical and pathological) between four different numerical schemes of TRUS-prostate biopsies used in daily clinical practice.

Materials and Methods: We conducted during one year (2010) a prospective multicenter epidemiological study. We analyzed the performance of prostate biopsy in 25 public hospitals in Spain. We grouped the patients depending on the number of cores taken during TRUS-prostate biopsy (≤6, 7-12, 13-19, ≥20 cores). Demographics, clinical and pathological features in each group were analyzed. Statistical analysis with STATA vs. 10.0 and contingency tables using Chi Square test were performed.

Results: We included 4087 patients with prostate cancer. The frequency of use of prostate biopsy schemes: 12.97% (≤6 cores), 63.35% (7-12 cores), 16.54% (13-19 cores) y 3.35% (≥20 cores). There were differences (p<0.001) between groups in age, comorbidity, PSA value and digital rectal examination (DRE). Older patients with more comorbidity and higher suspicion of prostate cancer (higher levels of PSA and suspicious DRE) were frequently observed in less extensive schemes. Prostate volume didn't´ t show differences between the groups (p=0.057). Gleason ≥7 were frequency observed in the group in which ≤6 cores were obtained (p<0.001).Organ confined disease was higher in the saturation group (≥20 cores) while advanced disease was predominantly in the group were 13-19 cores were taken and metastac stages in the ≤6 cores. In terms of progression of localized prostate cancer (d'Amico criteria) the highest ratio of high risk localized prostate cancer was observed in the saturation group (≥20 cores).

Conclusions: Sextants TRUS prostate biopsies schemes continue to be used in daily clinical practice for certain patients (fragile and with advanced disease) in order to reduce the morbidity associated with this procedure. This study shows that currently there isn't a consensus protocol of prostate biopsy in our country. It appears that obtaining more adequate tissue sampling by increasing the number of cores doesn't result in an increase of low risk prostate cancer in comparison with less extensive schemes.

MP-03.08

Evaluating the Clinical Utility of Template-Guided Transperineal Biopsy on Treatment Recommendations

Shanmugabavan Y, Freeman A, Jameson C, Valerio M, Emberton M, Ahmed H

UCL, London, UK

Introduction and Objectives: Evaluate the impact on management decision-making of template-guided transperineal biopsy of the prostate when compared to a standard transrectal ultrasound biopsy of the prostate.

Materials and Methods: Retrospective analysis of 152 men with prostate cancer who were diagnosed on standard TRUS biopsy and then went onto have a Template Prostate Mapping (TPM) biopsy. The management recommendation after each biopsy result was prospectively recorded.

Results: Median age at TPM biopsy was 63 years (range 39 to 82). Among all, 79/152 (52%) transitioned to a higher risk cancer, 26/152 (17%) transitioned to lower risk cancer and 47/152 (31%) had no change in risk category following TPM biopsy. After TPM biopsy, 43/65 men had a change in recommendation from Active Surveillance to active treatment, 44/87 men had a change in the type of active treatment they were offered and 41 men had no change in treatment recommendation made. Eight men, who were offered active treatment or Surveillance, were discharged after their TPM biopsy due to a 'no cancer' diagnosis.

Conclusion: Template-guided transperineal biopsies, when compared to TRUS biopsies, carry significant clinical utility by having a direct impact on management recommendations made to men with prostate cancer. It has a high rate of transitioning men from surveillance to active treatment recommendations although a significant number were provided reassurance in following a surveillance approach rather than a radical therapeutic approach.

MP-03.09

Transperineal Template Biopsies as Part of Active Surveillance: Medium-Term Follow-Up

Chetwood A, Zhakri R, Niraghallaigh H, Pereira N, Montgomery B, Bott S

Frimley Park Hospital, NHS Foundation Trust, Camberley, UK

Introduction and Objectives: Active surveillance (AS) is a valid treatment option for men with low risk prostate cancer. Its effectiveness relies on correct stratification of disease risk at the outset. Several AS series using TRUS biopsies report a 30% conversion to radical treatment with medium term follow-up. Transperineal template biopsies (TTBs) enable detailed sampling and in some cases targeting of suspicious areas within the prostate. At our institution we offer TTBs to patients prior to embarking on AS and this study aimed to review the progress of our AS cohort.

Materials and Methods: Since 2005 we have kept a prospective database of all patients undergoing TTBs from 2005 – 2013. Patients were identified who were/are on AS and had had a TTB, either as a primary diagnostic biopsy or for re-staging following a trans-rectal biopsy (TRUS).

Results: A total of 185 men were commenced on AS following a TTB. They had a median age of 66 years (range 42-78) and median PSA of 7 (range 0.40 – 22). The mean number of cores taken was 52 with an average positive core number of 2 per patient. Twenty patients are no longer on AS and have embarked on the following treatment options: brachytherapy (12), hormones and radiotherapy (2), surgery (4), HIFU (2). At a median of 31 months (range 4 – 66 months) follow-up, 165 patients (89.1%) are still on AS.

Conclusions: TTBs in patients considered for AS result in more accurate risk stratification. This means men with genuinely significant disease are treated with radical therapy without undue delay and men with insignificant disease can be reassured.

MP-03.10

Transperineal Prostate (TP) Biopsies: The First Prospective Evaluation of Patient Reported Experience and Effects on Symptoms and Life Style

Carmona-Echeverria L[1], Dimov I[2], Gaziev G[1], Serrao E[1], Kuru T[2], Acher P[3], Doble A[1], Gnanapragasam V[1], Muir G[4], Hadaschik B[2], **Kastner C**[1]

[1]Addenbrookes Hospital, Cambridge, UK; [2]Heidelberg University Hospital, Heidelberg, Germany; [3]Southend University Hospital Westcliff-on-Sea, UK; [4]King's College Hospital, London, UK

Introduction and Objectives: Many urologists are choosing the transperineal biopsy approach (TP) for detection of prostate cancer, with alleged higher detection and negligible infection rates compared to the transrectal approach. There is no published PROM data to assess patient reported experience and effects on symptoms. We aimed to prospectively assess their occurrence using a validated PROM tool.

Materials and Methods: Using the PROBE PROM tool, validated for TRUSP biopsies as part of the ProtecT study, we collected data prospectively in four centres in 2013. All patients undergoing TRUSP or TP biopsies were

MP-03.10, Table 1. Demographics and Symptoms scores.

	TRUS biopsy (n= 228)	TP biopsy (n = 201)	Difference TRUS-TP
Age (years)	66.7 ± 8.1 (42-88)	63.9 ± 7.9 (36-83)	p=0.265 (ns)
PSA (ng/ml)	13.5 ± 16.3 (1-116)	11.2 ± 8.4 (0.2-53.2)	p=0.000 (s)
Prostate Volume (ml)	56.4 ± 32.1 (7-211)	56.4 ± 36.1 (6-210)	p=0.496 (ns)
Symptom scores presented as the mean of the difference (follow-up - baseline)			
IPSS	-0.61 ± 5.35 (ns)	-0.23 ± 4.05 (ns)	p=0.50 (ns)
Quality of life	-0.36 ± 1.21 (ns)	-0.08 ± 1.22 (ns)	p=0.06 (ns)
IIEF-5	-2.95 ± 6.92 (s)	-1.96 ± 6.86 (s)	p≤0.01 (s)
Sexual desire (worse/much worse) since biopsy	14.5% (n=33)	28.3% (n=62)	
Pain			
Pain during period following biopsy	28.1% (n=64)	46.8% (n=94)	
Patients "little or not affected" by pain	76.5% (n=49)	91.4% (n=86)	
Patients that required painkiller prescription by GP	8.2% (n=18)	8.8% (n=20)	
Patients' experience			
Patients describing procedure as 'uncomfortable'	19.2% (n=42)	23.2% (n=53)	
Patients unhappy to have repeat biopsy	11% (n=25)	10% (22)	
Patients describing procedure as a minor intervention	93.9% (n=214)	82.6% (n=181)	
ns: Not significant, s: Significant			

asked to complete the questionnaires immediately after the procedure and at follow-up.
Results: A total of 655 patients were included in the study, of these 429 of patients in total completed both questionnaires (228 for TRUS and 201 for TP biopsy). Outcomes and demographics are shown in Table 1. Twice the numbers of cores were taken for TP biopsies (12.27 vs. 27.1), yet, there was no clinically significant difference in IPPS from before to after biopsy in both groups. However, there was significant change in IIEF score and sexual desire following both procedures, more so for TRUS. Pain was experienced in both groups in days after biopsy with only little impact on patients' life.
Conclusion: This study reports the first prospective PROM-based assessment of patients' experience and effects on symptoms of TP biopsies. Despite acuring more biopsies, TP appears to have similar impact to TRUSP. Patients should be warned of the effect of both techniques on sexual desire and erectile function.

MP-03.11
Side-Effects and Complications of Transperineal Prostate (TP) Biopsies: The First Prospective Evaluation Using a Validated Patient Reported Outcome Measures (PROM) Tool
Carmona-Echeverria L[1], Dimov I[2], Gaziev G[1], Serrao E[1], Kuru T[2], Acher P[3], Doble A[1], Gnanapragasam V[1], Muir G[4], Hadaschik B[2], **Kastner C[1]**
[1]Addenbrookes Hospital, Cambridge, UK; [2]Heidelberg University Hospital, Heidelberg, Germany; [3]Southend University Hospital, Westcliff-on-Sea, UK; [4]King's College Hospital, London, UK

Introduction and Objectives: Transrectal ultrasound guided biopsies of the prostate (TRUSP) are standard for detection of prostate cancer (CaP). Increasing sepsis rates have turned many urologists to using the TP approach with alleged higher detection rates and negligible infection rates. There is no published PROM data to assess side-effects and complications of TP biopsies. We aimed to prospectively assess their occurrence using a validated PROM tool.
Materials and Methods: Using the Probe PROM tool, validated for TRUSP biopsies as part of the ProtecT study, we collected data prospectively in four centres between February and November 2013. All patients undergoing TRUSP or TP biopsies were asked to complete

MP-03.11, Table 1. Demographics and side effects.

	TRUS biopsy (n= 228)	TP biopsy (n=201)	Difference TRUS-TP
Age (years)	66.7 ± 8.1 (42-88)	63.9 ± 7.9 (36-83)	p=0.265
PSA (ng/ml)	13.5 ± 16.3 (1-116)	11.2 ± 8.4 (0.2-53.2)	p=0.000
Prostate Volume (ml)	56.4 ± 32.1 (7-211)	56.4 ± 36.1 (6-210)	p=0.496
Side effect profile at follow-up			
Haematospermia	64.5% (n=147)*	63.2% (n=127)*	
Haematuria	71.5% (n=163)	74.6% (n=150)	
Haematochezia	30.7% (n=70)	10.0% (n=20)	
Acute urinary retention	7.5% (n=17)	5% (n=11)	
GP review post procedure	11.8% (n=33)	11.9% (n=24)	
Fever	12.7% (n=29)	6.5% (n=13)	
Antibiotics by GP for suspected UTI	9.2% (n=21)	9.0% (n=18)	
*Patients who had not had sexual activity were excluded			

the questionnaires immediately after the procedure and at follow-up.
Results: A total of 655 patients were included in the study, of these 65% (429) of patients in total completed both questionnaires (228 for TRUS and 201 for TP biopsy). The side effect profile and demographics can be seen in Table 1. There was one confirmed case of sepsis in the TRUS group, and 4 patients had clot retention in the TP group (1.99%). More than twice the numbers of cores were taken for TP biopsies (12.17 vs. 27.1), yet, subjective infection and urinary retention rates were measured significantly less in the TP group.
Conclusion: This study reports the first prospective PROM based assessment of side-effects and complications from TP biopsies. Despite acuring more biopsies TP appears to have a similar side effect profile to TRUS with fewer septic events and – surprisingly – lower urinary retention rate.

MP-03.12
Comparison between Two Different Schemes of Prostate Biopsy: Classic Sextant Biopsy vs. Volume-Dependent Prostate Biopsy
Montoya-Chinchilla R, Rodriguez-Tardido A, Cachay-Ayala M, Sala L, Jimenez-Penick F, Cao-Avellaneda E, Hita-Rosino E, Garcí a-Espona C, Montes-Diaz J, Moreno-Aviles J
Hospital Santa Lucía, Cartagena-Murcia, Spain

Introduction and Objectives: Prostate biopsy (PB) schemes vary widely between centers. There isn't a consensus in the number of cores, nor sampling sites. Currently, the use of a 12 cores scheme, an extended or a saturation prostate biopsy, is controversial. The objective of this study is to compare the detection rate of prostate cancer (PC) obtained by a classic double sextant scheme (DSS) versus the volume-dependent scheme (VDS).
Materials and Methods: We performed a prospective study including all patients with an indication of PB in the last 5 months of 2013 (n = 74). Patients were divided in two groups according to the order of inclusion. DSS (n = 44) was performed by a 6 core per lobe needle biopsy, while the VDS (n = 30) consist of 6, 7 or 8 core per lobe biopsy depending in the prostate volume (<25, 25-45 and >45 cc). In both schemes additional cores were obtained from suspect areas in the digital rectal examination (DRE) or transrectal ultrasound (TRUS). We used SPSS 17 software to create the contingency tables and to compare the means.
Results: The study groups were comparable in all variables (age, PSA, prostate volume, PSA density, suspect DRE, suspect TRUS, Gleason score and post-biopsy complication rate) except in the rate of PC detection, being higher in the VDS group (70% vs. 43.2%, P 0.033). The subgroup analysis shows that the PC detection rate was similar in both biopsy schemes when the prostate volume was under 25 cc (near 84%), but it was higher in the VDS when the prostate volume was 25-45 cc (88.9% vs. 42.9%) and over 45 cc (50% vs. 25%).
Conclusions: In our study, the volume-dependent scheme of prostate biopsy shows a better prostate cancer detection rate with similar post-biopsy complications especially when the prostate volume was over 25 cc.

MP-03.13
Comparative Analysis of MRI-Targeted/ Fusion-Guided vs. Transperineal Template-Saturation Prostate Biopsy: First START and PIRADS Conform Prospective Evaluation
Radtke J[1], Kuru T[1,2], Boxler S[3], Popeneciu I[1], Hüttenbrink C[1], Steinemann S[1], Roethke M[2], Hohenfellner M[1], Schlemmer H[2], Hadaschik B[1]
[1]Dept. of Urology, Heidelberg University Hospital, Heidelberg, Germany; [2]Dept. of Radiology, German Cancer Research Center, Heidelberg, Germany; [3]Dept. of Urology, University of Berne, Berne, Switzerland

Introduction and Objectives: Multiparametric-MRI (mp-MRI) and MRI-targeted prostate biopsy improve detection of clinically significant prostate cancer (PCa) but standardized prospective evaluation is limited. Here we comparatively analyze MRI-targeted/fusion-guided prostate biopsy versus transperineal saturation biopsy on a per-patient level.
Materials and Methods: A total of 294 consecutive men with suspicion of prostate cancer (108 primary and 186 repeat biopsies) enrolled in 2013 underwent 3T mp-MRI according to ESUR guidelines and transperineal prostate biopsy. Systematic transperineal cores (mean 24) were placed independently of MRI suspicion and MRI-targeted cores to allow evaluation according to Standards of Reporting for MRI-targeted Biopsy Studies (START) criteria. Software registration was used to perform fusion-guided biopsies (mean 4.1 cores). The highest Gleason score from each biopsy method was compared. Student-t-tests and McNemar tests were used to compare detection rates of both modalities.
Results: Overall, 150 cancers and 86 significant cancers (Gleason score≥3+4) were diagnosed. Saturation biopsy missed 18 significant tumors, while MRI-guided targeted biopsies did not detect 11. Targeted biopsy alone overlooked 90% of Gleason 3+3 tumors. McNemar tests for detection of significant cancers by one modality against the other modality were not statistically significant both for primary and repeat biopsies (p=0.08 and p=0.5).
Conclusions: Compared to transperineal saturation as reference, MRI/US-fusion-guided biopsy alone detected as many significant tumors as saturation biopsy. Simultaneously, the targeted approach mitigated the detection of lower-grade disease and may consequently prevent overtreatment.

MP-03.14
Multiparametric Magnetic Resonance Imaging (mpMRI) of Prostate Cancer Lesions: How Much Do We Have to Learn?
Gaziev G[1], Wadhwa K[1], Barrett T[2], Koo B[2], Gallagher F[2], Serrao E[3], Warren A[4], Gnanapragasam V[1], Doble A[1], **Kastner C**[1], Frey J[1], Seidenader J[1], Carmona Echeverria L[1]
[1]Dept. of Urology, Addenbrooke's Hospital, Cambridge, UK; [2]Dept. of Radiology, Addenbrooke's Hospital and University of Cambridge, Cambridge, UK; [3]Dept. of Biochemistry, University of Cambridge and Cancer Research, Cambridge, UK; [4]Dept. of Histopathology, Addenbrooke's Hospital and Univerisity of Cambridge, Cambridge, UK

Introduction and Objectives: The introduction of functional mp-MRI imaging has enabled imaging to evolve from having a limited role in local staging of prostate cancer to being able to detect tumours with a relatively high sensitivity and specificity. This study is aimed at determining the accuracy of multiparametric Magnetic Resonance Imaging (mpMRI) during the learning curve of radiologists in a tertiary-referral cancer centre using MRI targeted, transrectal ultrasound guided transperineal fusion biopsy (MTTP) for validation.
Materials and Methods: Prospective data on 340 consecutive patients was collated. Patients underwent mpMRI read by two radiologists in line with ESUR standards followed by MTTP biopsy of the lesion (targeted biopsy). A 5-point likert scale of probability was used to determine lesions suspicious for cancer, with scores ≥3 taken as a positive MR-target. We compared sequential groups to determine the learning curve. Statistical analysis was performed with chi-square correlation test.
Results: We detected a positive mpMRI in 64 patients from Group A (91%) and 52 patients from Group B (74%). Prostate cancer (CaP) detection rate on mpMRI increased from 42% (27/64) in Group A and 81% (42/52) in Group B (*p value* 0.003). CaP detection rate by targeted biopsy increased from 27% (17/64) in Group A and 63% (33/52) in Group B (*p value* 0.001). The negative predictive value of MRI for significant cancer (> Gleason 3+3) was 88.9% in Group B vs. 66.6% in Group A (see Table 1).
Conclusions: We demonstrate an improvement in detection of CaP for MRI reporting over time, suggesting a learning curve for the technique. Despite an improved negative predictive value for significant cancer, this did not reach a level whereby biopsy can be avoided in MR negative cases.

MP-03.14, Table 1.

	First 70 pt 2012 (Group A)	Last 60 pt 2012	First 70 pt 2013	Second 70 pt 2013	Last 70 pt 2013 (Group B)	p value
N positive (Likert scale ≥3) MRI (% all patients)	64 (91%)	51 (85%)	56 (80%)	55 (78%)	52 (74%)	0.007
N patients Likert scale 5	35	12	13	17	22	
N patients Likert scale 4	19	15	16	16	22	
N patients Likert scale 3	10	24	27	22	8	
CaP detection rate in positive MRI group (N)	42% (27/64)	53% (27/51)	64% (36/56)	73% (40/55)	81% (42/52)	0.003
CaP detection rate in positive MRI group by sector biopsy (N)	39% (25/64)	45% (23/51)	64% (36/56)	71% (39/55)	77% (40/52)	0.004
CaP significance (GZ / AZ / RZ)* sector biopsy (detection %)	25 / 12 (19%) / 5 (8%)	23 / 10 (20%) / 5 (10%)	36 / 15 (27%) / 8 (14%)	39 / 16 (29%) / 8 (14%)	40 / 15 (29%) / 10 (19%)	
CaP detection rate in positive MRI group by target biopsy (detection %)	17/64 (27%)	15/51 (29%)	23/56 (41%)	24/55 (44%)	33/52 (63%)	0.001
out of Likert scale 5 (detection %)	12/35 (34%)	5/12 (42%)	9/13 (69%)	10/17 (59%)	21/22 (95%)	
out of Likert scale 4 (detection %)	5/19 (26%)	4/15 (27%)	8/16 (50%)	8/16 (50%)	10/22 (45%)	
out of Likert scale 3 (detection %)	0/10 (0%)	6/24 (25%)	6/27 (22%)	6/22 (27%)	2/8 (25%)	
CaP significance (GZ / AZ / RZ)* target biopsy (detection %)	17 / 10 (16%) / 5 (8%)	15 / 9 (18%) / 5 (10%)	23 / 12 (21%) / 7 (12%)	24 / 17 (31%) / 9 (16%)	33 / 27 (52%) / 14 (27%)	0.003
N negative (Likert scale <3) MRI (% all patients)	6 (9%)	9 (15%)	14 (20%)	15 (21%)	18 (26%)	0.008
CaP detection rate in negative MRI group (N)	33% (2/6)	33% (3/9)	36% (4/14)	40% (6/15)	39% (7/18)	
CaP significance (GZ / AZ / RZ)* in negative MRI (detection %)	2 / 2 (33%) / 1 (17%)	3 / 2 (22%) / 0	4 / 2 (14%) / 1 (7%)	6 / 3 (28%) / 2 (12%)	7 / 2 (11%) / 0	

CaP = prostate cancer; N = number of patients; * Classification based on UCL criteria: GZ = green zone, AZ = amber zone, RZ = red zone. p value obtained comparing Group A with Group B

MP-03.15

Correlation of High PIRADS Score on Three-Tesla Magnetic Resonance with in-Gantry Magnetic Resonance Guided Biopsy

Jyoti R**, Jina N**, Haxhimolla H
Calvary Hospital, Bruce, Australia

Introduction and Objectives: Prostate cancer detection is a difficult process despite the various modalities available. The current standard of practice is based on stratifying risk using Prostate Specific Antigen (PSA), digital rectal examination (DRE) and performing a transrectal ultrasound (TRUS) or transperineal (TP) guided biopsy. Recent advances in three-tesla multiparametric magnetic resonance imaging (MP-MRI) technology and the availability of in-gantry MRI guided biopsies (MRGB) have added another diagnostic tool to help facilitate this. We review MRGB performed on high Prostate Imaging Reporting and Data System (PIRADS) score lesions in a single centre retrospective study.
Materials and Methods: There were 77 patients (mean age of 63) with high PIRADS score (4 and 5) that underwent in-gantry MRGB. All the biopsies were performed utilizing dynacad prostate biopsy system on a three-tesla MRI scanner by an urologist with assistance of an experienced radiologist. Two to three samples were obtained from each lesion using an MRI compatible 18-gauge biopsy needle. Three experienced pathologists evaluated the samples and provided the results and Gleason score in each positive sample.
Results: Out of the total 77 high PIRADS patients, 54 were PIRADS score 4 (70%) and 23 PIRADS score 5 (30%). There were 22 positive biopsies for adenocarcinoma of prostate with Gleason's score of 3+3=6 or higher. Out of the 54 PIRADS score 4 lesions, 13 were positive (24%) and out of 23 PIRADS 5 lesions, 9 were positive (39%). The remaining 55 biopsies were negative for prostate cancer.
Conclusion: We present our series of MRGB in patients with a high PIRADS score for prostate cancer. While this diagnostic paradigm is in its infancy stages, MRGB was positive in 24% of PIRADS 4 and 39% of PIRADS 5 lesions in this series.

MP-03.16

The Role of Magnetic Resonance Imaging as a Patient Selection Tool for Initial Prostate Biopsy in Cases with a PSA Value in the Gray Zone and a Normal Digital Rectal Examination

Uno H[1], Saito A[1], Komeda H[2], Nakano M[2], Deguchi T[2]
[1]Chuno Kosei Hospital, Seki-city, Japan; [2]Gifu Municipal Hospital, Gifu-city, Japan

Introduction and Objectives: With the change of the role of prostate biopsy from pure cancer detection to detection of clinically significant cancer, the timing of initial prostate biopsy could vary (immediate or deferred). If MRI has the potential to exclude clinically significant cancer, this could be a useful tool to offer deferral of biopsy, resulting in avoidance of unnecessary prostate biopsies. Moreover, several reports have suggested that transrectal biopsy may be insufficient to detect anterior cancer, so a transperineal approach should be selected to evaluate the diagnostic accuracy of MRI. In this study, the characteristics of prostate cancers detected by the transperineal approach in patients with normal MRI findings, PSA values in the gray zone, and normal digital rectal examinations (DREs) were analyzed, and whether patients with normal MRI could be offered deferral of biopsy was investigated.
Materials and Methods: A total of 302 participants (median age, 66 years) with PSA values of 4–10 ng/mL and normal DREs who underwent transperineal 16-20 cores biopsy were studied. All patients underwent 1.5-T multiparametric MRI, and MRI findings were assessed by 2 radiologists using a 5-point scale; 163 subjects who were assigned a score 1 or 2 were diagnosed as having normal MRI findings. Significant cancer was defined as 1 or 2 positive cores and Gleason score ≤3+4.
Results: Prostate cancer was diagnosed in 34 of the 163 patients (20.9%) with normal MRI findings. The number of positive cores was 1 or 2 in 33 cases (97.1%) and 3 in one patient. The Gleason score was 6 in 20, 3+4 in 6, 4+3 in 4, and 4+4 in 4, resulting in 25 of 34 (73.5%) with insignificant cancer. No significant differences were found between the clinically significant cancer group and the clinically insignificant cancer group in PSA, PSAD, or percent free PSA.
Conclusion: Most cancers with normal MRI were clinically insignificant, and men with mildly elevated PSA levels and normal DREs could be offered deferral of biopsy. Further investigation to exclude significant cancers before biopsy in cases with normal MRI is needed.

MP-03.17

MRI/3D TRUS Fused Targeted Biopsies for Detecting Anterior Prostate Cancer

Baco E[1], Rud E[2], Vlatkovic L[3], Svindland A[3], Bernhard J[1], Matsugasumi T[4], Ukimura O[4], Eggesbø H[5]
[1]USC Institute of Urology, Norris Comprehensive Cancer Center and University of Southern California, Los Angeles, USA; [2]Oslo University Hospital Aker, Oslo, Norway; [3]Oslo University Hospital Radiumhospitalet, Oslo, Norway; [4]University of Southern California, Institute of Urology, Los Angeles, USA; [5]Oslo University Hospital, Oslo, Norway

Introduction and Objectives: To evaluate the capability of magnetic resonance imaging (MRI) and three-dimensional transrectal ultrasound (3D-TRUS) image fused targeted biopsy (TB)

to diagnose anterior prostate cancers (APCa).
Materials and Methods: In period from 1/2010 to 7/2013, we retrospectively analyzed 211 consecutive patients with rising prostate specific antigen (PSA) and MRI suspicious APCa who underwent MRI/3DTRUS elastic fusion guided TB. The MRI pre-biopsy protocol included 3D T2-weighted (T2w) and diffusion weighted imaging (DWI) with apparent diffusion coefficient (ADC) calculated from b50 and b1000. Additional b2000 sequences was used. APCa was defined as >50% of MRI tumor volume (MTV) located anteriorly to the urethra. Suspicious APCa were highlighted on T2w images and segmented on workstation (Urostation® Koelis). MR/TRUS elastic image fusion guided TB were performed. Number of TB, maximum cancer core length (MCCL), cancer core involvement (CCI), primary Gleason grade (GG) and Gleason score (GS) were registered. Cancer detection rate (CDR) according to three degree of cancer suspicions on MRI was calculated. The concordance between GS and GG on TB and prostate specimen was assessed in 70 patients treated by radical prostatectomy (RP).
Results: Histopathological prostate cancer was affirmed in 170/211 (81%) patients. The median (range) number of TB per patient was 2 (1-5) and of these, 2 (1-4) were cancer positive. The mean±SD of MCCL and CCI in TB were 9±4.5 mm and 57±26%. CDR according to degree of cancer suspicions on MRI was 96/114 (96%) for high, 46/57 (80%) for medium and 10/35 (29%) for low degree of cancer suspicion. MTV median (range) was 1.2 (0.1-24) ml. ADC for positive and negative TB (mean±SD) were 78.4±15.7 (95% CI: 76-80) and 92±12 (95% CI: 88-96) [$10^{-5}mm^2/s$], p<0.0001. Concordance of primary GG pattern and GS and between TB and RP was and 90%, (κ=0.7) and (77%), κ=0.64).
Conclusion: MRI/3D TRUS elastic fusion guided TB technique is accurate method in diagnosing APCa.

MP-03.18
Whole-Gland Magnetic Resonance Imaging (MRI)-Guided Transurethral Ultrasound Ablation of Prostate Cancer: Preliminary Outcomes of a Phase I Clinical Trial
Billia M[1], Burtnyk M[2], Pahernik S[3,4], Roethke M[3,4], Relle J[5], Hafron J[5], Schlemmer H[3,4], Romagnoli C[1], **Chin J[1]**
[1]University of Western Ontario, London Health Sciences Center, London, Canada; [2]Profound Medical Inc, Toronto, Canada; [3]German Cancer Research Center DKFZ, Heidelberg, Germany; [4]Dept. of Urology, University Hospital, Heidelberg, Germany; [5]Beaumont Health System, Royal Oak, USA

Introduction and Objectives: MRI-guided transurethral ultrasound ablation (TULSA) is a new minimally-invasive technology to treat localized prostate cancer (PCa), aiming to provide good local disease control with low side-effect profile. This modality consists of a transurethral device emitting planar ultrasound and generating a continuous and precise volume of thermal coagulation shaped to conform to the prostate, using real-time MRI monitoring and active temperature feedback control. The aim of this prospective, multi-center phase I clinical trial is to determine the safety and feasibility of MRI-guided TULSA.
Materials and Methods: A total of 30 patients with low-risk PCa (cT1c-T2a, N0, M0; PSA≤10ng/ml; GS≤6) are enrolled. Under general anesthesia, suprapubic catheter (SPC) is inserted and left in for 2 weeks. The TULSA device (PAD-105, Profound Medical Inc.) is inserted manually and positioned precisely in the prostatic urethra with MRI guidance (3-Tesla unit). Treatment planning is performed with therapeutic intent of conservative whole-gland ablation. Treatment is delivered under continuous MR thermometry feedback control, and patients recover with an outpatient protocol. Primary endpoints are safety and feasibility, with follow-up to 12 months. Complete clinical monitoring is 5 years, including serial PSA, TRUS biopsy and QoL questionnaires (IPSS, IIEF).
Results: All patients were treated with no intraoperative complications. Median treatment time was 36 (range: 24 - 61) min and prostate volume 44 (21 - 95) cc. Spatial control of the thermal ablation was within ±1.3 mm and contrast-enhanced MRI confirmed the resulting conformal non-perfused volume. Clavien II complications included urinary tract infections (7 patients), and epididymitis (1), all resolved. Clavien I complications included hematuria (11), and acute urinary retention after SPC removal (4) resolving with prolonged- or re-catheterization. Median PSA decreased from 5.8 (1.3 - 9.4) ng/ml to 0.7 (0.1 - 3.1) ng/ml at 1 month (n=22) and remaining stable to 0.7 (<0.1 - 1.2) ng/ml at 6 months (n=11). Normal micturition resumed after SPC removal, with median IPSS and IIEF values returning to baseline at 3 months.
Conclusion: MRI-guidance enables accurate planning and real-time dosimetry and control of the thermal ablation volume. Preliminary results indicate that MRI-guided TULSA is safe and clinically feasible with a well-tolerated, low side effect profile.

MP-03.19
Histoscanning Accuracy: Single Centre Based Analysis Matching Each Quadrant in Prostate Specimens Slices with this New Imaging Technique
Busto Martin L[1], Pertega S[2], Simmons L[3], Arumainayagam N[4], Shamsuddin A[4], Winkler M[4]
[1]Complexo Hospitalario de A Coruna, A Coruna, Spain; [2]Dept. of Biostatistics, Complexo Hospitalario de A Coruna, A Coruna, Spain; [3]Dept. of Urology, Imperial College Healthcare NHS Trust, London, UK; [4]Div. of Surgery and Interventional Sciences, University College London Hospitals NHS Foundation Trust, London, UK

Introduction and Objectives: Prostate Histoscanning™ ('PHS') is a novel technique using computer-aided analysis of raw data from 3D-transrectal ultrasound (TRUS), to identify and visualize cancer foci within the prostate. The aim of this study was to assess the accuracy of PHS in detecting and ruling-out clinically significant prostate cancer lesions using radical whole-mount prostatectomy specimens as the reference standard.
Materials and Methods: Sixty eight men (mean age 62 years, mean PSA 11.63 ug/L), with prostate cancer had preoperative 3D-TRUS and Histoscanning analysis performed and subsequently underwent radical prostatectomy (RP). RP specimens were processed by a single experienced histopathologist using 5mm transverse whole mount step sectioned analysis. These transverse RP slices were digitally captured. PHS images were displayed on a 5x5mm grid and 5mm transverse slices allowing for direct comparison with RP histology digital images. Computer software was used to digitally overlay corresponding PHS and RP digital images for each transverse slice, to allow comparison. Each prostate was divided in quadrants (right and left apex, right and left base) for the purposes of analysis. Two-by-two contingency tables were constructed to calculate sensitivity, specificity, positive (PPV) and negative predictive (NPV) values with 95% confidence intervals.
Results: PHS had a sensitivity of 58%, specificity of 71%, PPV of 68% and NPV of 61% for all cancer.
Conclusions: Pre-operative imaging with Prostate HistoScanning™ may be a useful adjunct in determining location of cancer in order to plan nerve sparing surgery and also help guide focal therapy using ablative technologies.

MP-03.20
Transrectal Ultrasound (TRUS) Guided Prostate Biopsies in Men Aged 75 Years and Over: Does It Affect Management?
Lee E, Varnavas M, Banerjee G
Ipswich Hospital NHS Trust, Ipswich, UK

Introduction and Objectives: Transrectal ultrasound (TRUS) guided prostate biopsy is a key tool used in prostate cancer diagnosis and risk stratification. Infection is a well recognised complication, with sepsis reported as <1%, but the incidence is rising due to increasing antibiotic resistance. With increasing life expectancy and increased PSA testing, more men aged ≥75 years are being investigated for prostate cancer. We therefore reviewed whether TRUS prostate biopsies in men aged ≥75 years affected management decisions.

Materials and Methods: All men aged ≥75 years undergoing TRUS prostate biopsy under local anaesthetic over a 1-year period (January 2012 – December 2012) in a single institution were identified retrospectively. Patients age, indication for biopsy, digital rectal examination (DRE) findings, PSA at biopsy, histology, staging, D'Amico risk stratification, initial and actual treatment at 1 year were recorded.
Results: Eighty two (24%) of 340 TRUS prostate biopsies were performed in men aged ≥75 years, of which 56 men (68%) were diagnosed with prostate cancer compared to 130 men (50%) aged <75 years. Mean PSA was 31.3 (range 2.3 to 389.0) and DRE abnormal in 38 men (68%). Fifty one men (91%) were classed D'Amico intermediate or high risk. Nineteen men (63%) aged 75-79 years had treatment with curative intent compared to only six men (23%) aged ≥ 80 years. Twenty men (36%) were treated with radical radiotherapy, five (7%) with active surveillance of which one went on to have radiotherapy, twenty (36%) with hormonal therapy alone and eleven (20%) with watchful waiting. Only one of eight men who took part in clinical trials was ≥ 80 years. Biopsy upgraded the risk group in 15 men (27%) and all 8 men aged 75-79 years had radical radiotherapy, compared to 2 men (29%) aged ≥ 80 years.
Conclusion: Prostate biopsies in men aged 75-79 years does affect management decisions compared to men aged ≥ 80 years. Therefore, prostate biopsies in this age group are only recommended for men suitable and willing to have curative treatment or participate in clinical trials.

MP-03.21

High-Intensity Focussed Ultrasound in the Treatment of Localised Prostate Cancer: Focal Salvage Transition Rates

Guillaumier S[1], Dickinson L[1], Punwani S[1], Stone H[1], McCartan N[1], Thiruvel M[1], Maru M[1], Hindely R[2], Emberton M[1], Ahmed H[1]
[1]University College London, London, UK; [2]Basingstoke and North Hampshire Hospital, Basingstoke, UK

Introduction and Objectives: Focal therapy has shown encouraging low rates of genitourinary side-effects in the treatment of localised prostate cancer. As biochemical failure is difficult to define discussion has centred on rates of transition to whole-gland local therapy and need for systemic therapy. We report on our registry experience of over 1,000 men treated with transrectal HIFU.
Materials and Methods: Our independent academic HIFU registry incorporates a total of 830 patients with low, intermediate and high risk, stage T2a-T3aN0M0 prostate adenocarcinoma treated between 2004 and 2012 in a primary setting. Of these, 509 had focal HIFU treatment (Sonablate 500); 313 had whole-gland treatment. We defined our composite failure as need for whole-gland therapy and/or systemic therapy.
Results: Of 509 men undergoing focal HIFU therapy, 84 required redo-HIFU (17%). None of the patients in this group went on to have radical prostatectomy. One percent (5/509) had salvage radiotherapy and <0.5% (1/509) had salvage chemotherapy due to lung metastases following a renal primary. One percent (5/509) were subsequently treated with androgen deprivation therapy alone. In the same period, 313 patients had whole-gland HIFU treatment. Of these, 40% (124/313) had redo-HIFU and 5% (15/313) had androgen deprivation for treatment failure. Six percent (18/313) underwent salvage radiotherapy and <1% (2/313) were further treated with salvage radical prostatectomy. Finally, <0.5% (1/313) had salvage chemotherapy and <0.5% (1/313) had cryotherapy. The results are tabulated in Table 1.
Conclusions: Focal therapy demonstrates reassuringly low short to medium term rates of transition to whole-gland local therapy or systemic therapy in 11%. Longer follow-up will determine rates of metastases and mortality.

MP-03.21, Table 1.

	Total	Redo HIFU	Radical Prostatectomy	EBRT	Hormones	Chemotherapy	Cryotherapy
Focal	509	84	0	5	5	1	0
Whole Gland	313	124	2	18	15	1	1

Moderated Poster Session 4
Pediatric Urology
Monday, October 13
1300-1430

MP-04.01

Overactive Bladder Symptom Score (OABSS) Questionnaire for Children

Tsugaya M[1], Ohno K[1], Komatsu S[1], Usami M[2], Ito T[3], Endo S[3], Shiraya H[3]
[1]Ohno Urology Clinic, Toyokawa, Japan; [2]Nagoya City West Medical Center, Nagoya, Japan; [3]Toyokawa City Hospital, Toyokawa, Japan

Introduction and Objectives: Most children are not conscious of urgency when urgency incontinence occurs, and their parents are unaware of their conditions. We examined questions about three behaviors of children, seen as urgency, with the overactive bladder symptom score (OABSS) questionnaire.
Materials and Methods: The OABSS questionnaire with three additional items were given to 191 children (127 boys and 64 girls), 5 to 15 years of age, with complaints of bedwetting, incontinence, and daytime frequency. Additional items were sudden urge to urinate when leaving home (urge to urinate when going out), urgency to urinate while bathing and urinating in the bathroom (urge to urinate while bathing), and behavior of tolerating urges to urinate (tolerating behavior). Each frequency was classified into 6 stages ranging from 0 to 5. We then examined associations between extents of urgency and urge to urinate when going out, urge to urinate while bathing, tolerating behavior, and urgency incontinence.
Results: Correlations between the extent of urgency incontinence and extents of urgency, urge to urinate when going out, tolerating behavior, daytime frequency, and nighttime frequency were examined. Correlations with urgency (r=0.572), tolerating behavior (r=0.512), urge to urinate when going out (r=0.485), and urge to urinate while bathing (r=0.282) were observed. Daytime frequency (r=0.191) and nighttime frequency (r=0.0689) showed no correlations. However, the numbers of cases without urgency, urge to urinate when going out, tolerating behavior, and urge to urinate while bathing despite having urgency incontinence were 37, 28, 22, and 12, respectively.
Conclusion: The extent of urgency incontinence correlated with extent of urgency, and with the extents of each of the three added items: tolerating behavior, urge to urinate when going out, and urge to urinate while bathing. However, numbers of children answering that they had no urgency, no urge to urinate when going out, no tolerating behavior, and no urge to urinate while bathing despite having urgency incontinence were 37, 28, 22, and 12, respectively. Therefore, urge to urinate while bathing and tolerating behavior may be useful items for overactive bladder screening in children not able to recognize urgency.

MP-04.02

New Symptom Scale for Lower Urinary Tract Dysfunction for Children

Ebiloglu T[1], Kibar Y[2], Irkilata H[2], Ergin G[3], Kaya E[2], Sahin S[2]
[1]Dept. of Urology, Etimesgut Military Hospital, Ankara, Turkey; [2]Dept. of Urology, Gulhane Military Medical Academy, Ankara, Turkey; [3]Dept. of Urology, Sarikamis Military Hospital, Sarikamis, Turkey

Introduction and Objectives: Symptom scales (SS) are questionnaires for evaluating and following up of special illnesses. SS used for the diagnosis of lower urinary tract dysfunction (LUTD) in children is named Lower Urinary Tract Dysfunction Symptom Scale (LUTDSS). LUTDSS has 13 questions. In this research, we wanted to identify the questions which are more important for the diagnosis of LUTD and create a simpler SS.
Materials and Methods: From October 2010 to April 2012, 91 children between the age of 5 and 15 were evaluated with the suspicion of LUTD. Eleven children with active urinary tract infections were excluded from the study. Forty-eight children were attending to hospital for routine body weight and height control and had no urinary complaints. Their LUTDSS score was <9 and they were designed as control group. Thirty-two children with LUTDSS score ≥9 were thought as having LUTD and diagnoses were verified with 3-day bladder diaries and 2-time Uroflow-EMG-PVR tests. The answered questions of LUTDSS in patient and control group were compared.
Results: Overall, 1, 3, 7, and 8 questions were detected statistically significant for the diagnosis of LUTD. Children with daylight incontinence (first question of LUTDSS) were 49.8 (4.8-510) times, children with enuresis (third question) were 77.6 (6.2-961) times, children with pause while urinating (eighth question) were 96.3 (4.4-2090) times more likely to have LUTD than the opposites. Also pain while urinating (seventh question) was reported as statistically significant. The area under ROC curve created by using 1, 3, 7, and 8 questions was calculated 96.1%. Although it was not statistically significant, sudden need for urinating (tenth question) was thought to be one of the important aspect of LUTD.
Conclusions: This means that using only 1, 3, 7, 8 and 10 questions can make diagnose of LUTD. And we formed a simpler SS by using 1, 3, 7, 8 and 10 questions.

MP-04.04

Pediatric PCNL in the Split-Leg Modified Lateral Position and Using "Adult" Instruments

Lezrek M, Bazine K, Assebane M, Ammani A, Qarro A, Kasmaoui E, Beddouch A, Alami M
Dept. of Urology Military Hospital Militaire Moulay Ismail, Meknes, Morocco

Introduction and Objectives: We present our experience of percutaneous nephrolithotmy (PCNL) in children with our standard adults' technique, in the split-leg modified lateral position and using a 20.8 Fr adult nephroscope.
Materials and Methods: Between January 2007 and August 2010, 5 boys and 2 girls, aged between 5 to 15 years, undergone PCNL. The indication was failure of SWL in 3 cases and complex stones for the others. Operative technique: The children were placed in the same position throughout the whole procedure, with the trunk in the lateral position, the pelvis in oblique position and the lower limbs are split and bent in the lowest position. Retrograde ureteroscopy in 2 children and all ureteral catheter placements were performed with an 8 Fr adult ureteroscope. Caliceal puncture and tract formation using "one step" dilation with 24 Fr Amplatz dilator and sheath, were performed under fluoroscopic control. A 20.8 Fr nephroscope was used.
Results: The pediatric PCNL was possible in the split-leg modified position, using standard "adult" 20.8 Fr nephroscope, and 8 Fr ureteroscope. 9 PCNL were performed (3 left, 2 right, 2 bilateral), 5 under spinal-anesthesia and 4 under general anesthesia. Six approaches were through the upper calyx and 3 via a central calyx. Postoperatively, 8 renal units have been rendered stone free. In a renal unit, with multiple locations, the intended goal has been achieved with persistence of parenchymal calcification. No hemorrhagic, splanchnic, or intra-thoracic complication was noted. No transfusion was required. The Clavien score distribution was: no complication in 7 PCNL (77%) and grade 1 in 2 PCNL (23%).
Conclusion: The pediatric PCNL technique is safe and possible with the split-leg modified lateral position. In this position, there is no change of position throughout the procedure, so it is time saving and cost-effective with only one set of draping. Moreover, it allows simultaneous antegrade and retrograde approach with rigid instruments. The use of our standard adult instruments, 20.8 Fr adult nephroscope 8 Fr ureteroscope, was possible. Thus, "adult" urologists can also perform pediatric PCNL, with no need of specialized additional instruments.

MP-04.05

Effect of Site, Size and Number of Upper Urinary Tract Stones on the Outcome of Extracorporeal Shock Wave Lithotripsy (ESWL) in Children: A Single Centre Study

Muhammad S**, Nawaz G**, Rahim W, Khan M, Hussain T, Hussain I, Akhter S
Shifa International Hospital, Islamabad, Pakistan

Introduction and Objectives: The treatment of urinary stones has been revolutionized since the first presentation of extracorporeal shock wave lithotripsy (ESWL) in West Germany, in the early1980's. It is now accepted worldwide because of its being user friendly, noninvasive, with high efficacy rate and wide availability of lithotripters. Our objective was to determine the effect of site, size and number of upper urinary tract stones on the outcome of extracorporeal shock wave lithotripsy (ESWL) in children.
Materials and Methods: A total of 56 children with mean age 8.11 years (range 1-16) underwent ESWL for urinary stones. Double J stent was placed prior to ESWL when indicated. Renal stones of 0.5 to 5cm (mean size 1.10cm) in size were treated. The impulse rate per treatment varied from 1300 to 4,000 (mean 3021). Exclusion criteria were coagulopathies, pyelonephritis, outflow obstruction, non-functioning kidney and hypertension. ESWL was performed under general anesthesia in 38 cases. Follow-up period was 3-6 months.
Results: A total of 77 stones were treated: 29 calyceal, 34 pelvic, 9 proximal ureteral stones, 4 combined in renal pelvis and proximal ureter and 1 stone in renal pelvis extending into lower pole. Mean stone size was 1.10cm. A total of 77 sessions were performed. The mean number of shock waves per session was 3021. Overall stone-free rate was 85.71% (48/56 patients). Stone clearance rate was 100% for upper (6/6 stones) and mid calyceal stones (2/2 stones), after placing DJ stents as ancillary procedure in one of the patients in each group respectively, as compared to lower pole stones where clearance rate was (12/18 stones) 66.67%. Rate of stone clearance was 33.34% less in lower calyceal stones as compared to upper or middle calyx. For stones larger than 1 cm, number of lithotripsy sessions per stone were more 1.14 (31 sessions in 27 stones) as compared to 1.08 (46 sessions in 50 stones) for stones smaller than 1cm. In stones more than 1cm the failure rate was 8.92% (5/56) as compared to 5.35 % (3/56) in stones less than 1cm. The ratio of ancillary procedures was 1:1.46 in stones larger than 1cm, as compared to 1:3 for stones less than 1cm. Need for ancillary procedure for single stone was (5/36) 13.88%, for two stones (1/2) 50%, for three (2/4) 50% and for four (1/1) 100% respectively. Similarly sessions of ESWL also increased with number of stones in a single collecting system, i.e. single session of ESWL was required in 87% of single stones and 28.57% of two stones of in a single renal unit. On the other hand 80% of the 3 stones in a single system were cleared by 2 sessions of ESWL and for four stones required at least three sessions. Stone clearance rate was also higher 90.47 % (38/42 stones) in single stone as compared to 75 % (12/16 stones), 80 % (12/15 stones) and 0 % (0/4 stones) in two, three and four stones in a single unit respectively. Complications were encountered in 13 patients. Ancillary procedures were required in total 17 (29.82%) patients. DJ stenting was required in 13 (22.8%) patients, 3 (5.26%) patients required ureterorenoscopy with DJ stenting and only 1 (1.75%) patient required percutaneous nephrolithotomy after ESWL.
Conclusion: ESWL is a safe and effective method for treatment for stones at least up to 1 cm in pediatric population. Rate of stone clearance is less in lower calyceal stones as compared to upper or middle calyx. The number of lithotripsy sessions, along with rates of failure and ancillary procedures increase in stones more than 1cm in size. There is increase in need for ancillary procedures and number of ESWL sessions along with a decrease in rate of stone clearance in case of multiple stones in a single renal unit.

MP-04.06

Laparoendoscopic Single-Site Surgery (LESS) for Treatment of Different Urologic Pathologies in Pediatrics: Single-Center Single-Surgeon Experience

Abdel-Karim A, Moussa A, Aboelfotoh A, Elmissery M, Elsalmy S
Alexandria University, Alexandria, Egypt

Introduction and Objectives: Laparoendoscopic single-site surgery (LESS) has been recently reported as a valid treatment option for various urologic pathologies in adults. However, the current applications of LESS in pediatric urology is still limited. In this report we present our initial experience of LESS for treatment of different urologic pathologies in pediatrics.
Materials and Methods: Twenty two children with mean age of 6.25±4.23 years had LESS for undescended testes (bilateral=7, unilateral=6), varicocele (left=3, bilateral=1), non-functioning kidney (n=1), multicystic dysplastic kidney (n=1) and ureteropelvic junction obstruction (UPJO) (n=3). Both R-port (n=16) and Covidien port (n=6) were inserted through a periumbilical incision. We used pre-bent (with R-port), articulating (with Covidien port) and straight instruments. Pyeloplasty was done through hand-free intracorporeal suturing using 4/0 vicryl. All procedures were done by a single experienced laparoscopist. Data were collected during and after surgery then analysed retrospectively.
Results: Thirty nine LESS procedures were performed including orchiopexy (n=10), first stage Fowler- Stephens orchiopexy (n=9), second stage Fowler- Stephens orchiopexy (n=9), orchiectomy (n=1), varicocelectomy (n=5), nephrectomy (n=2), dismembered pyeloplasty (n=2) and non-dismembered Y-V plasty (n=1). No conversion to conventional laparoscopy, open surgery or adding an extra-port in any patient. Mean operative time was 89.6±22.8 minutes. Mean blood loss was 32.2±22.1 cc. No intraoperative or post-operative complications were reported. Mean hospital stay was 0.52±0.25 days. Mean visual analogue pain scale at discharge was 0.52±0.33. Mean follow-up was 16.6± 6.4 months.
Conclusion: LESS is a feasible and safe option for treatment of different urologic pathologies in pediatrics. However, more patients, indications and prospective comparative studies are needed for further evaluation of the role of LESS in pediatric urology.

MP-04.07

Minimally Invasive Percutaneous Nephrolithotomy in Children: Experience from a Single UK Institution

Miller S, Taylor A, Ahmad R, Ratan H, Lloyd J, Lemberger J, Scriven S
Nottingham City Hospital, Nottingham, UK

Introduction and Objectives: Children with urolithiasis are at increased risk of forming multiple calculi during their lifetime, particularly if they have underlying metabolic or renal disorders such as cystinuria or Dent's disease. Minimising renal trauma and preserving nephrons is essential in children who face the prospect of multiple procedures. Equally, reduced scarring from smaller access sites can facilitate subsequent percutaneous intervention and preserve renal function. Consequently, minimally invasive techniques were developed to address these issues. We present our experience of using mini-PCNL in our paediatric population over the last 4 years.
Materials and Methods: Retrospective analysis of 11 mini-PCNL's performed on 10 patients between 1st January 2009 and 31st December 2013. Patient demographics, stone size and composition, operative data, outcomes and complications were recorded. A patient was considered stone free if no residual fragments were identified on follow-up imaging. Complications were classified according to the Clavien system and outcomes compared to other series in the literature.
Results: Ten patients (7 boys, 3 girls) were included, with 11 PCNL's performed (one had two procedures during the study period). Average age was 10.2 years (range 3-16 years). Average operating time was 206 minutes with average length of stay 3.27 days. Four children had staghorn calculi, 3 had renal pelvis stones and 4 had calyceal stones (2 upper pole, 2 lower pole). Stone composition is as follows: 4 cystine, 3 calcium oxalate, 2 carbapatite, 1 calcium phosphate (other) and 1 struvite. Average Stone

size 25.4mm (range 9mm-63mm). Four (40%) patients had complete clearance, but only 3 (27%) required secondary treatment. Overall 73% patients were stone free or had clinically insignificant fragments that required no further treatment. Average blood loss was 2.6g/dL but no patients required blood transfusion. One child had a post-operative UTI (Clavien grade 2). No significant sepsis occurred.
Conclusions: Mini-PCNL is a safe, effective approach to treating large renal stones in children. No patients required blood transfusion and only 1 patient needed treatment for post-operative UTI. Stone clearance rates approach those of other contemporary series, with a 27% ancillary procedure rate.

MP-04.08
Resource Utilization and Costs Associated with the Diagnostic Evaluation of Nonrefluxing, Primary Hydronephrosis in Infants
Akhavan A[1], Shnorhavorian M[1], Garrison L[2], **Merguerian P**[1]
[1]Seattle Children's Hospital, Seattle, USA; [2]University of WA, Seattle, USA

Introduction and Objectives: The long-term evaluation of postnatal nonrefluxing, primary hydronephrosis presents a dilemma for urologists, as most cases resolve without surgery. We report longitudinal resource utilization and costs associated with the diagnostic evaluation of infants with isolated, primary nonrefluxing hydronephrosis to determine the costs associated with diagnosing a surgical case, and assess the implication using a cost-consequences analysis.
Materials and Methods: A retrospective chart review was used to capture resource utilization for all infants less than 6 months of age with hydronephrosis evaluated at our institution over a 5-year period. Infants with confounding urological diagnoses were excluded. Both payer and societal perspectives were utilized. Costs were estimated from resource utilization, including radiographic imaging and clinical encounter types. Data were collected from first clinic visit until surgery or resolution or 3 years, whichever was shortest.
Results: Of 165 included patients, surgical rates for grades 1 - 4 hydronephrosis were: 0, 5%, 21% and 74%, respectively. Median costs of identifying a single surgical case per increasing grade of hydronephrosis were: infinite, $37,600, $11,741, $2,124, respectively ($p<0.001$).
Conclusion: The diagnostic evaluation of higher grades of hydronephrosis is significantly more productive in terms of identifying patients requiring surgery than the evaluation of patients with lower grade disease. A more abbreviated diagnostic strategy may be warranted in patients with grades 1-2 hydronephrosis than the current standard of care. We project for the population in this analysis that a less intensive approach for lower grades of hydronephrosis could save about 24% of costs.

MP-04.09
The Double Barrel Shotgun Technique: Description of a Technique for Implantation of Dextranomer Hyaluronic Acid in Children with Vesicoureteral Reflux
Mesrobian H
Medical College and Children's Hospital of Wisconsin, Milwaukee, USA

Introduction and Objectives: We describe a new technique for implantation of dextranomer/hyaluronic acid (Deflux) for the endoscopic treatment of vesicoureteral reflux (VUR) in children. We present our initial experience and analyze early outcomes.
Materials and Methods: Following IRB approval, we reviewed a database collected on 100 evaluable children who underwent this procedure between January of 2005 and December of 2012. Mean patient age at the time of the procedure was 69 months and ranged from 6 to 193. The female to male ratio was 97/3. The main indication for the procedure was the presence of documented febrile urinary tract infection(s) (FUTI) and VUR. A positional instillation cystogram (PIC) at the end of each procedure was performed to document resolution of VUR, in addition to visual evaluation. The presence or absence of a FUTI was the primary outcome. Follow-up at 1 month and at 1 year consisted of a tailored pelvic ultrasound to assess the volume of the Deflux mounds and their relation to the ipsilateral ureteral jet.
Results: A total of 185 implantation procedures -accounting for bilateral disease- were performed to treat VUR in 100 children. In 162 ureters with low grade VUR, the mean volume of Deflux utilized was close to 1 ml per ureter (range 0.5 to 3). In 23 ureters with high grade VUR, the mean volume/ureter was 1.5 (range 1 to 3.5). In one patient, asymptomatic hydro ureter was encountered at the initial follow-up. There were no immediate complications. At a mean postoperative follow-up of 14 months (range 1-84), 12 patients in the low-grade group had developed a FUTI, for an infection free success rate of 88%. In the high-grade group, the success rate was 71%. It was 83% for the entire cohort.
Conclusions: The double barrel shotgun technique is safe and simple while it maintains a high infection-free success rate. In this era of value driven health care, the reduced volume of Deflux needed to achieve these results represents an advantage over other techniques. We are cautiously optimistic and acknowledge the need for long-term follow-up to see if these favorable outcomes persist.

MP-04.10
Classic versus 12 O'clock Incision of Posterior Urethral Valve: A Prospective Randomized Study
Elderwy A[1], Al-Hazmi H[2], Neel K[2], Hammouda H[1], Abdelmoneim A[1]
[1]Dept. of Urology, Div. of Pediatric Urology, Assiut University Hospital, Assiut, Egypt; [2]Div. of Urology, King Khalid Hospital, Riyadh, Saudi Arabia

Introduction and Objectives: Endoscopic management of posterior urethral valve (PUV) is the gold standard. Various incision techniques and instruments were studied. Our aim is to evaluate the efficacy and safety of two commonly used incision approaches.
Materials and Methods: Between September 2007 and September 2012, 68 consecutive patients with PUV were randomly treated with either classic incision at the 5, 7, and 12 o'clock positions (Group I; 33 cases), or incision at the 12 o'clock position (Group II; 35 cases). Primary ablation was performed using either diathermy hook (in 26 patients) or sickle-shaped cold knife (in 42 patients). Urethral catheter was removed one day postoperatively for all cases. Voiding cystourethrogram was done for all patients at 2 months follow-up. All patients with persistent dilatation of posterior urethra on follow-up underwent revision cystoscopy. Recovery of bladder and renal function as well as resolution of vesicoureteral reflux (VUR) and hydroureteronephrosis (HUN) within the 2 treatment groups were compared.
Results: The median age at presentation was 6 months (range, day1- 9 years). Median follow-up was 3 years (range, 1-6). No significant difference was present between the two groups at presentation regarding age, renal function, VUR and HUN. Mean operative time was 20 vs. 10 minutes for groups I and II respectively ($p<0.001$). Although the use of electro-ablation was comparable, revision valve ablation was indicated for 4 cases in the classic incision arm ($p=0.035$). At last follow-up, the median estimated glomerular filtration rates were 70 and 78 ml/min/1.73 m^2 for groups I and II respectively ($p=0.193$). Complete toilet training was achieved in 55% of Group I compared to 69% in Group II ($p=0.234$).
Conclusion: Both PUV incision techniques are fairly comparable. However, single incision at the 12 o'clock position provides a shorter ablation time with relatively less morbidity.

MP-04.11
High-Risk Oncogenic Human Papilloma Virus Infection of the Foreskin in Prepubertal Boys
Balci M, Tuncel A, Baran I, Guzel O, Keten T, Aksu N, Atan A
Ankara Numune Training and Research Hospital, Ankara, Turkey

Introduction and Objectives: The high-risk human papillomavirus (HPV) subtypes that are related to penil cancer. The aim of the present study was to evaluate the prevalence and genotypes of HPV infection of the foreskin in asymptomatic prepubertal boys.
Materials and Methods: A total of 100 prepubertal healthy boys who underwent a standard circumcision procedure were included in the study. High-risk HPV status was determined by real-time polymerase chain reaction for the genotypes 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66 and 68.
Results: The median age at the time of surgery was 5.7 years (range, 2 months-9 years). High-risk HPV was detected in 9 foreskins (9%). Positive samples showed are HPV 16 (n=3), 31 (n=2), 39 (n=3) and 51 (n=1).
Conclusion: Our results showed that subclinical high-risk HPV infections are found in the foreskin, which could be a reservoir for HPV-associated diseases.

MP-04.12
Severe Complications of Circumcision: An Analysis of 72 Cases at Komfo Anokye Teaching Hospital, Kumasi, Ghana
Appiah K[1], Gyasi-Sarpong K[2], Aboah K[2], Azorliade R[1], Nyamekye B[1], Otu-Boateng K[1], Amoah G[1], Maison P[1], Arthur D[1], Frimpong-Twumasi B[1], Opoku-Antwi I[1]
[1]Komfo Anokye Teaching Hospital, Kumasi, Ghana; [2]School of Medical Sciences, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

Introduction and Objectives: Circumcision is the commonest operation performed on young boys. Like any other operation, it is not without complications that can range from trivial to the most tragic. We report the findings of 72 cases referred for serious complications after circumcision that needed secondary surgical interventions. The aim of this study is to emphasize the important problem of circumcision complications.
Materials and Methods: The 72 cases (mean age 36months, range < 1month-63.5 months) with complications of circumcision were reviewed prospectively. Circumcisions were performed at various medical centers by mainly nurses (77.8%), doctors (8.3%) and in environments other than the hospital by traditional circumcisionists (20.8%). All the Patients were examined by urologists and the injury category assigned.
Results: The most commonly observed complication was urethrocutaneous fistula, seen in 56 cases (77.8%). The other complications were: glans amputation in 5 (6.9%), iatrogenic hypospadia in four (5.6%), epidermal inclusion cysts in three (4.2%), skin bridges in 2 (2.8%) and excess foreskin in 2 (2.8%). All patients with urethrocutaneous fistula had simple closure of their fistulas and patients with iatrogenic hypospadia were repaired by Mathieu (two patients) and tubularized incised plate urethroplasty techniques. Of the glans amputations, three were complete and two were partial. The complete glans amputations were seen much later after the injuries had completely healed with meatal stenosis and disfigured penis. We used buccal mucosa to reconstruct a neo glans penis in each case ensuring acceptable cosmesis and long term urethral opening. The partial amputations had also healed with constriction bands and urethrocutaneous fistula and in one patient penile distortion. Formal urethroplasty were done in each case with longitudinal incisions made on the lateral aspect of each corpora which were then closed transversely. Adhesion freeing as well as revision were performed in all cases of skin bridges and excess foreskin.
Conclusion: Circumcision may be associated with many serious complications whether done at home or in the hospital. To prevent these complications, the operation should be performed by trained and experienced personnel.

MP-04.13
Urethral Mobilization and Advancement versus Meatal Advancement and Glanuloplasty Incorporated for Anterior Hypospadias Repair: A Prospective Comparative Study
Elderwy A**, Abdelmoneim A**
Dept. of Urology, Div. of Pediatric Urology, Assiut University Hospital, Assiut, Egypt

Introduction and Objectives: To evaluate the hypospadias repair created by Urethral mobilization and advancement (UMA) versus Meatal Advancement and Glanuloplasty Incorporated (MAGPI) in terms of cosmesis and preventing adverse events in anterior hypospadias repair.
Materials and Methods: Between June 2007 and January 2013, 247 consecutive boys (median age, 4 years) were enrolled. Preoperative position of the hypospadic meatus was glandular in 18, coronal in 101, and in the distal shaft in 128 boys. Ventral penile curvature, hypoplastic distal urethra and flat/small glans were noted in 201, 33 and 29 patients respectively. UMA (Group I; n=112) and MAGPI (Group II; n=135) techniques were compared as regards cosmesis and complications.
Results: Both groups were comparable regarding patients' age and severity of hypospadias. After a median follow-up period of 2 years (range: 1 - 5), urethrocutaneous fistula/dehiscence was noted in 3 patients in Group I vs. 7 patients in Group II (p=0.355). No urethral stenosis was encountered. The independent risk factors for secondary surgery were distal meatal location (OR 5.54, CI 95% 0.99-30.82), hypoplastic distal urethra (OR 10.32, CI 95% 2.12-50.14) and flat/small glans (OR 14.88, CI 95% 3.32-66.61). A cosmetically normal slit-like meatus was obtained by single procedure in 93.8% of patients in Group I vs. 81.5% in Group II (p=0. 004). Normal circumcised penis was achieved in 92% and 93.3% of patients in groups I and II respectively (p=0. 807).
Conclusions: There are no significant differences in complication rates between the two techniques, and the UMA technique is usually of better cosmesis.

MP-04.14
Objective Long-Term Evaluation after Bladder Autoaugmentation with Rectus Muscle Backing
Stojanovic B[1], Vukadinovic V[2], Bizic M[1], Radojicic Z[2], Krstic Z[2]**, Djordjevic M**[2]
[1]University Children's Hospital, Belgrade, Serbia; [2]School of Medicine, University of Belgrade, Belgrade, Serbia

Introduction and Objectives: Bladder autoaugmentation with rectus muscle backing has been demonstrated to be an efficient surgical technique for bladder augmentation. Our aim was to objectively evaluate the long-term outcomes and to define value of this procedure.
Materials and Methods: Between August 1999 and June 2004, autoaugmentation was performed in 29 patients (18 girls and 11 boys) aged 4 – 13 years (median 8). Indication was neurogenic bladder with small capacity (no less than 60% of that expected for age) and poor compliance (myelomeningocele in 18, posterior urethral valve in 6, tethered cord in 3 and sacral agenesis in 2 patients). Detrusorectomy usually involved the whole upper half of the bladder. Prolapsed bladder urothelium was hitched to both rectus muscles to prevent its retraction and to offer easier bladder empting with muscle contractions. Of the 29 patients, 22 participated, 3 were unavailable and 4 did not participate in complete evaluation.
Results: At the median follow-up of 27 months (ranged 9 to 49), bladder volume was increased significantly in all 22 patients and ranged from 190 to 462 mL (median 322 mL). Now, at the median follow-up of 135 months (ranged from 94 to 164), bladder volume ranged from 296 to 552 mL (median 417 mL). All patients had normal bladder compliance for age and confirmed continence. Voluntary voiding was achieved in 17 patients without residual urine; of 12 patients who used clean intermittent catheterization, only 5 were not able to empty bladder voluntary.
Conclusion: Detrusorectomy with rectus muscle hitch and backing can be used successfully for bladder autoaugmentation. This is minimally invasive, completely extraperitoneal, simple and safe to perform. Voluntary contractions of the rectus muscle enable bladder acting as "pseudodetrusor". Main disadvantage is that this technique is indicated only in selected cases with small bladder capacity and without anomaly of anterior abdominal wall.

MP-04.15

Disparities in Presentation and Outcomes of Children, Adolescents and Young Adults with Renal Cell Carcinoma: An NCDB Database Study

Akhavan A, Richards M, Goldin A, Gow K, **Merguerian P**
Seattle Children's Hospital, Seattle, USA

Introduction and Objectives: We analyzed age-related differences in presentation and outcomes of children, adolescents and young adult patients with renal cell carcinoma (RCC) using data from the National Cancer Database (NCDB). We hypothesize that children have delayed diagnosis leading to higher stage and decreased survival.
Materials and Methods: The NCDB is a nationwide oncology data set that captures 75% of newly diagnosed cancer cases from over 1400 facility based cancer registries in the US. This database was queried for patients under 30 years of age with RCC diagnosed between 1998-2011with at least a 5 years follow-up. Cases were examined according to age (10-15yrs, 15-21yrs and 21-30yrs) in relation to American Joint Committee on Cancer stage, grade, histology, tumor size, treatment, insurance status, income, race and mortality. Statistical analysis included both univariate and multivariate logistic regression.
Results: Of 1,358 patients, 77 (5.7%) were younger than 15, 142 (10.5%) were between 15-21 years old, and 1,139 (83.9%) were between 21-30 years old. Patients under 15 years compared to those over 21 presented with higher stage (26.2% vs. 10% stage 4, p<0.0001), higher grade tumors (10% vs. 4.6% grade, p=0.003), larger tumor size (67.8mm vs. 52mm, p<0.001), and higher incidence of lymph node positivity (60% vs. 35.1%, p=0.002). Papillary RCC was more common in the younger age group (17.8% vs. 7.8%, p<0.001). Race, region, insurance status was not significantly different between the groups. We also discovered that a significantly higher proportion of children and adolescents underwent lymph node dissection (51% vs. 14.9%, p<0.001), chemotherapy (14.1% vs. 4.8%, p=0.001) and immunotherapy (8% vs. 3%, p<0.001). In multivariate logistic regression analysis, stage, grade, margin status, and insurance were associated with increased mortality.
Conclusions: RCC is rare in patients younger than 15. Due to late diagnosis children present with higher grade and higher stage tumors and therefore have worse prognosis. Screening for microscopic hematuria may help identify these patients earlier and reduce mortality.

MP-04.16

Ureteroscopy in Children: Is Routine Pre-Operative Ureteral Stent Insertion Necessary?

Nagappan P, Hennayake S
Dept. of Paediatric Urology, Royal Manchester Children's Hospital, Manchester, UK

Introduction and Objectives: The role of pre-operative stent insertion before flexible and rigid ureteroscopy in children is debatable. We aimed to assess the outcome after rigid and flexible ureteroscopy in children who did not have routine pre-operative ureteral stent insertion, focusing on the ability to advance the ureteroscope up to the kidney and complication rate.
Materials and Methods: A total of 165 children (175 renal units) with urolithiasis were managed in our institution over a 11 year period (2002 to 2013). Forty nine of them underwent flexible or rigid ureteroscopic procedures. Their age range was 2 to 15 years (mean 8.6 years; median 9 years). Twenty seven patients were male and 22 were female. Fifteen children underwent retrograde intrarenal surgery with flexible ureteroscope for renal stones and 34 children underwent lithotripsy with rigid ureteroscope for ureteral stones. Stone size ranged from 3 to 18 mm (mean 8.5 mm). Forty six of the 49 patients did not have pre-operative ureteral stent insertion. The procedures were performed under general anaesthesia in the standard manner. Ureteral dilators were used in 15 patients to improve access into the ureter. Ureteral access sheath was used in 2 patients. Analysis of prospectively collected data was done, focusing on rates of failure to complete the procedure and immediate complications.
Results: We were able to complete the procedure by passing the ureteroscope up to the renal pelvis in 41 of the 46 patients (89.1%) who did not have pre-operative ureteral stent insertion. Fifteen (32.6%) of patients required ureteral dilatation. We failed to advance the ureteroscope in 5 patients (10.8% failure rate); mainly due to complex stone burden. One patient urine extravasation requiring post-operative stent insertion (2.2% minor complication rate) and 1 patient developed post-operative sepsis (2.2% major complication rate).
Conclusion: Flexible and rigid ureteroscopy in children can be safely performed without routine pre-operative ureteral stent insertion. Our overall success rate in advancing the ureteroscope up to the kidney is 89.1%. The morbidity rates are low.

Moderated Poster Session 5
Urinary Incontinence
Monday, October 13
1300-1430

MP-05.01
Microstimulation of Hippocampus Inhibits Micturition Reflex in Urethane-Anesthetized Rats
Matsuta Y[1], Shen B[2], Roppolo J[2], de Groat W[2], Tai C[2], Yokoyama O[1]
[1]University of Fukui, Fukui, Japan; [2]University of Pittsburgh, Pittsburgh, USA

Introduction and Objectives: Hippocampus is known to be involved in emotion and memory functions. Although recent brain imaging studies have indicated the activation of hippocampus during micturition control, there is no report that directly examines the role of hippocampus in micturition reflex. The purpose of this study is to investigate how direct stimulation of hippocampus affects the micturition reflex.
Materials and Methods: A total of 8 female Sprague-Dawley rats weighing 300g under urethane anesthesia (1.2 g/kg, subcutaneous administration) were used in this study. The bladder was cannulated through urethra using a PE-50 catheter, and isovolumetric bladder contractions were recorded. After the catheter insertion, rat was fixed on a stereotaxic frame and then the brain was exposed by removing a small piece of skull. A concentric tungsten electrode was inserted stereotaxically into the hippocampus following the coordinates of the rat brain map by Paxinos and Watson. An electrical stimulation (0.2 ms pulse width and 20 V) with frequencies from 1 to 200 Hz was applied to the hippocampus to evaluate its effect on isovolumetric bladder contraction. After the stimulation, the brain was resected and preserved in the formalin for histology.
Results: An electrical stimulation of 20 Hz frequency maximally inhibited the isovoliumetric bladder contractions with the microelectrodes in the dorsal areas of hippocampus. The inhibition lasted for a much longer time than the stimulation duration. Intraperitoneal administration of naloxone (1 mg/kg) shortened the duration of inhibition, but it did not completely eliminate the inhibition. The stimulation never induced any excitatory response.
Conclusion: These results suggest that the electrical activation of neurons in the hippocampus inhibits the micturition reflex. Understanding the brain function in micturition control is important for the treatments of bladder dysfunctions caused by brain damages or disorders.

MP-05.02
Brindley Device Results the Treatment in Patients with Spinal Cord Injury
Ospina-Galeano I[1], Lopera-Toro A[2], Gonzalez-Borrero I[2], Illanes-Goméz R[3], **Castaño-Botero J**[2]
[1]Hospital Universitario 12 de Octubre, Madrid, Spain; [2]Hospital Pablo Tobón Uribe, Universidad CES, Medellín, Colombia; [3]Hospital del Trabajador, Santiago de Chile, Chile

Introduction and Objectives: To analyze the clinical and urodynamic results as well as to evaluate the complications arised from the SARS implantation with extradural technique in the treatment of patients with spinal cord injury (SCI) associated with neurogenic detrusor overactivity (NDO).
Materials and Methods: We made a descriptive study of the results obtained from 104 patients diagnosed SCI with NDO. These patients had been implanted since 2009. Descriptive variables and clinical variables were taken into account, frequent and descriptive analysis was made using SPSS 15 statistical program.
Results: Patients had an average age 38 ±10 years, 91% were male. Trauma was the main cause of the lesions (99%).The patients had an average time of lesion evolution of 110+-86 months. In total, 90% of the patients showed ASIA A classification, 60% located at dorsal level. The urinary infection rate before SARS was 91%, and 15% after the procedure (p<0.69). Before SARS all patients suffered urinary incontinence, after 86% of the patients has been cured. The patients with autonomic dysreflexia before the procedure was 66% after the SARS only 5% (p<0.07). After SARS 94% of the patients had a bladder capacity greater than 300 ml .In 6% of the patients it was necessary to implant of a readjustable suburethral mesh due to stress urinary incontinence. There was 91% of patients that achieved an effective voiding, with a residual post-voiding lower than 50ml. In addition, 59% of the patients used the device for erectile function and 88% of the cases use for the bowel function. Two cases of infection in the receiver block have been shown four and five months after the implant. These cases have been solved by withdrawal of the device and subsequent provision of antibiotic therapy. Failure of the device was shown in one of the patients six months later, which was repaired without negative effects by substitution of the receiver block. Due to the increased experience, complications have been meaningfully reduced, as well as the infections, following the routine use of prophylactic antibiotics both in the pre and post-surgery phase.
Conclusion: Since 2009, our group has been carrying out the SARS implant using the extradural technique. Our experience in Latin America turned us into the group with the largest series of extradural technique implants worldwide, we found very good clinical and urodynamic results in SARS implantation with extradural technique and the posterior rhizotomy, leading to improvement of urinary incontinence, urinary infection rate and autonomic dysreflexia in adequately selected patients with NDO due to SCI. Moreover, it proves to be a safe procedure, given the scarce complications it shows, being most of them easily solved.

MP-05.03
Are We Dosing Our Patients Right in the Management of Neurogenic Detrusor Overactivity (NDO) of Spinal Cord Injury (SCI)?
Suman D
Indian Spinal Injury Centre, Vasant Kunj, New Delhi, India

Introduction and Objectives: Anticholinergics are used as the first line of management to control the NDO of SCI. Based on symptoms, dose is often doubled or additional anticholinergics added to achieve clinical control of leaks. Though good symptom control is often achieved with anticholinergics but the same degree of improvement is less frequently documented urodynamically. We undertook this study to ascertain if the optimal dose for symptom relief means the same thing as the dose required for adequate suppression of NDO.
Materials and Methods: Fifty patients (age range 20-55 years, 30 males and 20 females) of SCI with documented NDO, undergoing treatment with tolterodine (long acting) 8 mg at bedtime and well controlled in terms of leaks per week (0-4) were included. All patients underwent routine UDS and IWT at 1 month of treatment.
Results: All patients presented their 3-day bladder diaries to show good control of leaks (0-4 per week) and were subjectively satisfied with the outcome of oral anticholinergic therapy. IWT was found to be still positive in 30% of patients. UDS showed persistence of NDO in 40% of patients. Maximum pressure of NDO above 40 cm was seen in 30% of patients. Interpretation: Symptom control in the form of prevention of leaks is not akin to objective urodynamic control in patients with NDO after SCI. Persistence of high pressure storage is an important factor in ongoing pressure induced morphological changes in patients with SCI. Thus, the goal of oral anticholinergic therapy should be to achieve adequate suppression of NDO and achieve low pressure storage in such patients.
Conclusion: Even oral anticholinergic treatment in the management of NDO should be titrated with IWT and urodynamics to ensure adequate storage pressure control rather than rely only on the symptomatic improvement in terms of reduction of leaks. Failure to achieve such objective optimal control should be a

factor to consider alternate treatment options.

MP-05.04

Are Baseline Characteristics Predictive of Sacral Neuromodulation Test Stimulation Response in a Large Multicenter Trial?

Siegel S[1], Bennett J[2], Mangel J[3], Comiter C[4], Bird E[5], Griebling T[6], Culkin D[7], Sutherland S[8], Noblett K[9], Berg K[10], Kan F[10]
[1]Metro Urology, Woodbury, USA; [2]Female Pelvic Medicine, Grand Rapids, USA; [3]MetroHealth Medical Center, Cleveland, USA; [4]Stanford University, Stanford, USA; [5]Scott and White Healthcare, Temple, USA; [6]University of Kansas, Kansas City, USA; [7]University of Oklahoma, Oklahoma City, USA; [8]University of Washington, Seattle, USA; [9]University of California, Irvine, USA; [10]Medtronic, Minneapolis, USA

Introduction and Objectives: This sub-analysis of the InSite Trial aims to characterize the association of baseline subject characteristics with response to sacral neuromodulation (SNM) test stimulation in a prospective, multicenter post-approval study. Subjects with bothersome symptoms of overactive bladder (OAB) including urinary urge incontinence (UI) and/or urgency-frequency (UF), who had failed at least 1 anticholinergic medication and had at least 1 medication not tried were included.
Materials and Methods: Subjects completed test stimulation with an implanted tined lead and external neurostimulator for a mean of 14 ± 3 days. Therapeutic success for UI was defined as a ≥50% improvement in average leaks/day and for UF as a ≥50% reduction in voids/day or a return to normal (<8 voids/day). Those that met criteria went on to receive the implantable neurostimulator. Subjects with both UI and UF required therapeutic success for just one indication to be implanted. Logistic regression was used and test stimulation response was regressed separately for UI and UF subjects on baseline characteristics, including age, race, gender, previous medications tried, years since diagnosis, daily voids or leaks, and medical history at baseline.
Results: A total of 340 subjects completed test stimulation; 339 subjects were implanted with the tined lead and 1 received a temporary lead. Mean age was 57 years and 91% were female. After test stimulation, 82% of UI subjects and 65% of UF subjects had therapeutic success. UI subjects were more likely to be test stimulation responders if they had previously tried 1 to 2 OAB medications as compared to 3 or more (OR(Odds Ratio)=2.08, p=0.045), and if they had a constipation history at baseline (OR=2.25, p=0.045). UF subjects were more likely to be test stimulation responders if they had a history of diarrhea at baseline (OR=2.36, p=0.015). No relationship of previous medication use with test stimulation response for UF subjects was observed.
Conclusions: This multicenter study shows that fewer prior medication trials (<3 vs. ≥3) is a predictor of a successful test stimulation response in UI patients. Constipation and diarrhea history were observed to be related to positive test stimulation response in UI and UF patients, respectively.

MP-05.05

The Effect of Animated Biofeedback Training in Treating Patients with Voiding Dysfunction

Almousa R, Alabbad A, Alshaikh A, Agammy M, Alkawai F, Gomha M
King Fahad Specialist Hospital, Dammam, Saudi Arabia

Introduction and Objectives: To determine the effect of animated biofeedback training in treating patients with voiding dysfunction in the urology department of King Fahd specialist Hospital, Dammam.
Materials and Methods: A retrospective single centre study for all patients with voiding dysfunction who underwent animated biofeedback sessions training using urostym machine between March 2010 and Feb 2014. Study included all patients who underwent Biofeedback training age 5 years and more and completed at least 6 sessions of biofeedback. Success was considered as completely cured or 50% or more improvement of the presenting complaint.
Results: Among 80 patients who underwent biofeedback training sessions during the mentioned period, 13 patients were excluded due to failure to complete at least 6 sessions of training. There were seventeen males (25.4%) versus 50 females (74.6%). Mean age was 29.94 (range 6-69 years). Diagnosis included 33 dysfunctional voider, 13 with stress urinary incontinence, others 21 (31.3%). The major complaints were analysed as follow: 41 patients with urinary incontinence, 46 patients with frequency /urgency, 22 patients with recurrent UTI, 18 patients with high post void residual, and 17 patients with Nocturnal enuresis. The results were:

1. Forty one patients with urinary incontinence, 2 were dry after treatment (4.9%), 29 improvement (70.7%) with success of overall 75.6% and 10 patients no change (24.4%).
2. Frequency/urgency resolved in 4 out 46 patients (8.7%), improved in 30 patients (65.2%) with overall success of 73.9% and 12 patients with no change (26.1%).
3. Recurrent UTI improved in 18 out of 22 patients (81.8%) with 4 patients didn't improve (18.2%)
4. Nocturnal enuresis resolved in 3 out 17 patients (17.6 %), improved in 8 patients (47.1%), with overall success of 64.7% and 6 patients didn't show any improvement (35.3 %).

All the results were statistically significant with overall success rate of 74.8%.

5. Post void residual improved in 12 out 18 patients (66.7 %) with 6 patients (33.3 %) no change in residual.

Conclusion: Treatment of patients with voiding dysfunction using biofeedback urostym training is associated with improved urinary incontinence, urgency frequency symptoms, nocturnal enuresis episodes and decreased urinary tract infection rates.

MP-05.06

Conservative Management for Postprostatectomy Urinary Incontinence: Cochrane Systematic Review and Meta-Analysis

Anderson C[1], Glazener C[1], Omar M[1], Campbell S[2], Hunter K[3], Cody J[4], Moore K[3]
[1]University of Aberdeen, Aberdeen, UK; [2]University of East Anglia, Norwich, UK; [3]University of Alberta, Edmonton, Canada; [4]Cochrane Incontinence Group, Aberdeen, UK

Introduction and Objectives: Urinary incontinence (UI) is common after both radical prostatectomy and transurethral resection of the prostate. Conservative management incorporates numerous interventions such as: pelvic floor muscle training (PFMT) with or without biofeedback; electrical stimulation; lifestyle changes; penile clamps; pads; and combinations of these interventions. However, there is uncertainty concerning treatment efficacy and optimal timing of delivery. The aim of this updated Cochrane Systematic Review is to determine if conservative interventions are effective at treating and preventing UI in men after prostate surgery.
Materials and Methods: Randomised controlled trials (RCT) comparing conservative interventions for postprostatectomy UI were searched (5th February 2014) using the databases: Cochrane Incontinence Group Specialised Register; CENTRAL; EMBASE; CINAHL; ClinicalTrials.gov; and WHO ICTRP. Two independent review authors performed abstract and full-text screening, data extraction and risk of bias assessment. The quality of evidence was assessed using GRADE methodology. Primary outcomes for this review included: number of incontinent men; quality of life; adverse events; and cost-effectiveness.
Results: We assessed 764 reports, from which 92 reports of 52 trials were included in the review. The trials included 4545 men, of whom 2736 received an active treatment. For men with UI after surgery, there was no statistically significant difference in the number of incontinent men receiving PFMT with or without biofeedback (57% with UI versus 62% in the control group, Risk Ratio (RR) 0.85, 95% CI 0.60 to 1.22) after 12 months. This was reflected in a lack of difference in quality of

life measures after 12 months assessed using the ICIQ-SF (MD -0.50, 95% CI -1.35 to 0.35). In contrast, for men who received an intervention to prevent incontinence, there was a statistically significant difference in the UI rate at 12 months (10% versus 32%, RR 0.32 95% CI 0.20 to 0.51). However, risk of bias showed methodological limitations: the quality of evidence using GRADE methodology was moderate.
Conclusion: The evidence on whether or not conservative interventions are effective at treating or preventing UI post-prostatectomy is conflicting. Rigorous and adequately powered RCTs are still needed to obtain a definitive answer.

MP-05.07
Do We Need to Change Our Counseling to Patients Undergoing AUS for Post Prostatectomy Incontinence?
Serag H, Almallah Z
Queen Elizabeth Hospital, Birmingham, UK

Introduction and Objectives: Urinary incontinence post radical prostatectomy (PPI) is a common functional complication with significant impact on the patient quality of life. The artificial urinary sphincter (AUS) remains the gold standard surgical treatment for PPI. Historically, literature reported AUS outcome in both neurogenic and non-neurogenic incontinence with high complications and re-operation rates. Aim to present a modern AUS experience in treating PPI only patients from a large volume single centre in the UK.
Materials and Methods: A retrospective review of patients underwent AUS implantation (AMS 800) from 2007-2013. Data were collected on patient demographics, infections, erosion rate, mechanical failure, reoperation rate and continence rates. All patients included were strictly post-radical prostatectomy.
Results: Eighty four AUS were implanted over a 6-year period. Patient's age ranged between 51 -78 (median 69, mean 69.25). Mean follow-up 2.1 years, Median 2 years, and range 3 months to 6 years. 36.9% (31/84) reported that they are completely dry with no pads; 41.6% (35/84) of patients are socially continent (using 1 pad/day), 19% (16/84) are using >2 pads / day. Two lost follow-up. Reoperation rate was 8.3% only (7/84) including 5 mechanical failures (6%). Three abdominal wound infections, one of which required admission and removal of device. Three perineal wound infections and 2 UTIs. One patient had an erosion (1.2%). No urethral atrophies reported. Bladder over activity developed in 6% of patients. Recurrence of bladder neck stricture occurred twice in 1 patient after the AUS implantation.
Conclusion: AUS outcome in patients with post radical prostatectomy is very good with low complications and re-operation rates. Historical re-operation figures to counsel patients should be avoided. However, the limitation of our results is relatively short follow-up.

MP-05.08
To What Extent Does Radiotherapy Affect the Outcome of Bulbar Artificial Urinary Sphincter Implantation in the Treatment of Post-Prostatectomy Sphincter Weakness Incontinence?
Bugeja S, Frost A, Andrich D, Mundy A
University College London Hospitals, London, UK

Introduction and Objectives: This study evaluates the impact of radiotherapy on the functional outcome and explantation rate of the bulbar artificial urinary sphincter (AUS) in the management of sphincter weakness incontinence (SWI) following prostate cancer treatment.
Materials and Methods: A total of 188 men (mean age 67.9 years) underwent AUS implantation at our institution between 2006 and 2013 for SWI following prostate cancer treatment. These were analysed in 2 groups: Group A, post–radical prostatectomy (RP), n=116; Group B, post-radiotherapy, n=72 (adjuvant to RP in 44). There were 151 primary implantations. Thirty seven were revisions for malfunction, infection or erosion. Mean follow-up was 19.2 months (3.5-92.8 months). Functional outcome was assessed only in patients with follow-up of at least 1 year (67 in Group A; 44 in Group B; mean 27.6 months; range 12.0-92.8 months).
Results: Eleven out of 116 (9.1%) unirradiated patients had their device explanted for infection and/or erosion compared to an explantation rate of 13.9% (10 of 72) in the irradiated group. This occurred significantly earlier in Group B (mean 9.2 vs. 20.5 months). Three non-irradiated patients had their device replaced for malfunction compared to 1 in the irradiated group. In terms of continence, at a minimum of 1 year follow-up there was interestingly no difference between radiated and irradiated patients (79.5% vs. 80.6%) This may be related to the fact that more patients in Group A underwent revision surgery (23.8% vs. 15.9%). In fact, of the 13 incontinent in Group A, 5 had at least one previous AUS (38.5%) compared to only 1 out of 9 in Group B (11.1%). Detrusor overactivity was a commoner cause for recurrent incontinence in unirradiated patients (46% vs. 22.2%) possibly indicating a more careful selection of patients referred for AUS after radiotherapy.
Conclusion: Radiotherapy is associated with an increased incidence of AUS infection and erosion which occurs much earlier following implantation. Nonetheless, in carefully selected and appropriately councelled patients, a functional outcome comparable to unirradiated patients is achievable.

MP-05.09
Surgical Outcomes of Artificial Urinary Sphincter Revision and Replacement
Eswara J[1], Vetter J[2], Brandes S[2]
[1]Brigham and Women's Hospital, Harvard Medical School, Boston, USA; [2]Washington University, St. Louis, USA

Introduction and Objectives: AUS failure can be due to urethral atrophy/erosion, device failure, or infection. The purpose of this study was to characterize the results of AUS revisions and replacements.
Materials and Methods: From 1988-2012, 261 men underwent 388 AUS placements (214), revisions (76), or replacements (98). Revision was performed for recurrent/persistent SUI. Replacement was performed for urethral erosion/infection or mechanical failure. Endpoints included reoperation, worsening SUI, urethral erosion, and infection.
Results: Mean age at time of final surgery was 69.1 years and median follow-up 34.6 months with no difference in follow-up among the groups (p=0.16). AUS replacement was associated with higher rates of mechanical failure (p=0.036) and urethral erosion (p<0.001) than virgin AUS placement. AUS replacement after urethral erosion was associated with a higher rate of subsequent urethral erosions (p<0.001) than virgin AUS placement, while AUS replacement after mechanical failure had no higher rate of persistent SUI (p=0.980), mechanical failure (p=0.112), or urethral erosion (p=0.332). There was no difference between the virgin AUS placement group and the AUS revision group with regard to persistent SUI (p=0.244), mechanical failure (p=0.310), urethral erosion (p=0.448), or overall failure (p=0.336). Median times to revision and replacement after virgin AUS placement were 33.1 months and 48.6 months, respectively. After initial AUS placement, the rate of subsequent revision was 21% and replacement was 17%. Among AUS replacements, median time to erosion was 5.7 months and median time to mechanical failure was 33.1 months.
Conclusions: AUS replacement is associated with higher rates of mechanical failure and urethral erosion. AUS revision surgery is as safe, effective, and durable as virgin AUS placement.

MP-05.10
Comparing the Effectiveness between Mid Urethral Retropubic TVT and Transobturator TOT or TVT-O in Mixed Pattern Urinary Incontinence with Stress Incontinence Predominating
Gaur A[1,2], Guy P[3]
[1]Salisbury District Hospital, Salisbury, UK; [2]Ashford and St Peter's Hospital NHS Foundation Trust, Surrey, UK; [3]Salisbury District Hospital NHS Foundation Trust, Salisbury, UK

Introduction and Objectives: We compared

the effectiveness of mid urethral Retropubic TVT and transobturator TVT-O or TOT performed in single centre in female patients with mixed pattern urinary incontinence with stress Incontinence predominating.
Materials and Methods: A detailed study of the operating log and the patients follow-up notes was performed to identify the patients treated with midurethral tapes for mixed pattern urinary incontinence with stress incontinence predominating. From March 2006 till March 2011, 74 females patients were identified with symptoms of mixed pattern urinary incontinence with stress incontinence predominating. Thirty eight out of 74 (51.35%) underwent retro pubic TVT insertion, 28/74 (37.83%) underwent transobturator (TVT-O/TOT tapes), 9.45% (7/74) miniarc and 1 TVT Secure. Fifteen out of 74 (20.27%) patients had no prior urodynamic study. Only 3/59 (5.08%) patients who underwent urodynamic study showed mild bladder overactivity and rest had sensory urgency. Of these 3, 2 underwent transobturator tape and 1 miniarc.
Results: In the TVT (Retropubic) group 60.52% (23/38) patients were fully continent while 8/38 (21.05%) had partial improvement even with anti cholinergics. Out of these 23 patients 10 (43.47%) needed anti cholinergics while 5/23 (21.73%) needed Botulinum toxin in addition. While in the Transobturator group 24/28 (85.71%) patients were completely continent without complications and only 7/24 (29.16%) needed anti cholinergics and 1 (4.1%) needed Botulinum toxin. One out of 28(3.57%) had partial improvement. 3.57% (1/28) had late failure after initial complete response for 3years. Two out of 3 patients which showed bladder overactivity on urodynamics study and underwent transobturator tape had complete response without any additional treatment. Six out of 38 (15.78%) patients in TVT group presented post op with dysfunctional voiding compared to none in TOT/TVT-O group. Out of these, 2 needed tape division and 1 needed chronic SIC and 1 pt needed early SIC only. In TVT arm 3/38 (7.89%) had AUR all had chronic diff voiding 2 on SIC and 1 Partial response while none in TOT group. In TOT/TVT-O group 3.57% (1/28) Perennial pain needing tape division and 3.57% (1/28) short-term leg pain was seen but not in TVT group.
Conclusion: Transobturator tapes are more efficacious and should be considered as first choice in such category.

MP-05.11
A Pattern of Detrusor Overactivity in Urodynamic Analysis Is Associated with Lower Urinary Tract Symptoms But Not with Renal Function Deterioration in Neurogenic Bladder Dysfunction
Song S, Lee D, Sohn M, Hong B, Jeong I, Park S, Kim K, Kim C, Kim M, Kim K
Asan Medical Center, University of Ulsan College of Medicine, Seoul, South Korea

Introduction and Objectives: We aimed to evaluate whether the pattern of DO (phasic or terminal) on urodynamic study is associated with lower urinary tract symptoms or renal function deterioration in pediatric neurogenic bladder patients.
Materials and Methods: We retrospectively analyzed the medical records of pediatric patients who underwent urodynamic evaluations and were diagnosed with a neurogenic bladder in our hospital during the last two years. After a thorough review of the urodynamic data in our study cohort, we categorized DO as phasic versus terminal or single versus multiple DO. Renal function deterioration was defined by photon defects on a DMSA renal scan.
Results: Forty-eight patients were included in this analysis (Table 1) and comprised cases of spina bifida (29.2%), tumors of the central nervous system (16.7%), and other neurologic diseases (14.6%). DO was observed in 83.3% of all patients. The pattern of DO was revealed as phasic (77.5%) or terminal (22.5%) and as either single (10%) or multiple (90%). Patients with terminal DO complained of urgency or urge incontinence more frequently than those with phasic DO. No patients with single DO but all patients with multiple DO had urgency or urge incontinence (p=0.029). The pattern of DO was not related to the occurrence of photon defects on a DMSA scan. After adjustment for bladder compliance, the detrusor pressure at maximal cystometric capacity was found to be the only significant predictive factor for the presence of a photon defect on a DMSA scan in multivariate regression analysis (OR=1.15, CI 1.01-1.32, p=0.027).
Conclusion: Urgency or urge incontinence is more prevalent when DO shows a multiple or terminal rather than a single or phasic pattern. A significant predictor of renal function loss was the maximal cystometric capacity but not the DO pattern.

MP-05.11, Table 1. Patient Characteristics

Patient Data (n=48)	Mean ± SD	Range	Median
Age (years)	10.83 ± 5.58	1-18	12.0
Uroflowmetry			
Qmax (ml/sec)	10.03 ± 10.24	0-34	7.0
VV (ml)	113.73 ± 123.21	0-492	76.0
PVR (ml)	110.35 ± 164.65	0-520	12.5
Urodynamics			
Detrusor profiles			
PdetQmax (cmH_2O)	33.29 ± 25.37	0-109	30.50
MCC (ml)	221.31 ± 158.16	25-520	185.0
PdetMCC (cmH_2O)	6.79 ± 9.19	0-38	0.00
DO profiles			
MDOP (cmH_2O)	42.26 ± 43.35	0-164	32.0
Volume at DO	86.98 ± 109.16	0-521	56.0

Qmax, peak flow rate; VV, voided volume; PVR, post void residual; MCC, maximal cystometric capacity; DO, detrusor overactivity; MDOP, maximum detrusor overactivity pressure.

Moderated Poster Session 6
Penis/Testis/Urethra, Benign Disease
Monday, October 13
1435-1600

MP-06.01
Catheter Associated Urethral Stricture: Not an Uncommon Occurrence
Gyasi-Sarpong K[1], **Appiah K**[2], Azorliade R[2], Aboah K[1], Nyamekye B[2], Otu-Boateng K[2], Amoah G[2], Maison P[2], Arthur D[2], Opoku-Antwi I[2], Frimpong-Twumasi B[2]
[1]Kwame Nkrumah University of Science and Technology, Kumasi, Ghana; [2]Komfo Anokye Teaching Hospital, Kumasi, Ghana

Introduction and Objectives: Urethral catheters are employed for diagnostic and therapeutic purposes. However its use may be associated with long term morbidity for the patient. Scanty data exist in Ghana on catheter related strictures. The aim of this study is to highlight the serious problem of urethral strictures developing as a result of catheterization either from traumatic catheterization, allergic reaction to catheters or infection and to make recommendations to reduce the incidence of catheter associated urethral strictures.
Materials and Methods: Between October 2012 and January 2014, a total of 28 patients had urethroplasty done for urethral strictures which were as a result of urethral catheterizations. The mean age was 45.3 years (range 12 to 80). This represented 22.2% of all strictures treated with urethroplasty at the Komfo Anokye Teaching Hospital, Kumasi. A database was kept prospectively for all patients.
Results: Strictures resulting from traumatic catheterizations were all in the bulbar urethra whereas non traumatic catheterizations were more likely to cause strictures in both penile and bulbar urethra. Traumatic catheterization caused singular strictures (100%) whereas non traumatic catheterization injury was more likely to cause multiple strictures (75%). Traumatic catheterization injuries were more likely to cause strictures of less than 3cm (100%) whereas strictures of non traumatic origin were more likely to be more than 3cm (62.5%). Non urologic indications accounted for most catheterizations resulting in these catheter related strictures. Laparotomy for General surgery indications accounted for more than half (57.1%) of these catheter related strictures. Two patients on regular catheter change for refractory urine retention for BPH whiles waiting for surgery also developed long strictures.
Conclusions: Catheter associated urethral strictures are common and non traumatic strictures are more complex compared to traumatic strictures. There is need to sensitize health care providers to avoid passing catheters for short procedures and to use good quality catheter materials under strict asepsis when there is an indication for catheterization.

MP-06.02
Identifying Patients at Risk of Failure after Direct Vision Internal Urethrotomy Combined with Self-Dilation for Short Segment Strictures Anterior Urethra
Mahmoud O, Fakher I, A.Elbakry A, Harraz A, Tharwat M, El-Assmy A, Mosbah A
Urology and Nephrology Center, Mansoura, Egypt

Introduction and Objectives: Patients underwent direct vision internal urethrotomy (DVIU) for short strictures of the anterior urethra might be kept on self-dilation in attempt to decrease recurrence rate. We prospectively evaluated this patient cohort to identify the subgroup requiring further surgery.
Materials and Methods: Between October 2013 and March 2014, patients attending at our tertiary referral center for self-dilation after DVIU were interviewed and underwent assessment for their voiding pattern using validated LUTS scores, uroflowmetry, postvoiding residual urine (PVR) and flexible cystoscopy. Patients characteristics including duration and frequency of self-dilation, maximal catheter diameter used for self-dilation and urine cultures were determined. Further patients' demographics at time of surgery were retrospectively collected. We defined patients requiring further intervention when they had moderate to severe LUTS (I-PSS more than 7) and/or maximal flow rate less than 10 ml/min with unsatisfactory quality of life because of urinary symptoms.
Results: A total of 70 patients attended the outpatient clinic for self-dilation from which 49 patients completed their evaluation. A total of 21 (42.9%) patients were defined as requiring further intervention. These patients showed significantly higher PVR (median 50 cc vs. 30 cc) ($p < 0.001$). This group of patient were older (median age was 58 vs. 49.5 years) ($p=0.03$) and had previous history of DVIU (62.5% vs. 33.3%) ($p=0.03$). On the other hand, patients' age, BMI, associated comorbidities, stricture length, site or duration of catheterization and preoperative positive cultures did not show significant association with outcome. Similarly, the duration of self-dilation and catheter size did not show significant association with the outcome. On multivariate analysis, only patients with previous history of DVIU are at risk of failure (OR: 3.437; 95%CI: 1.1 – 12.358; $p = 0.05$).
Conclusions: A significant portion of patients undergoing self-dilation after DVIU showed unsatisfactory outcome. Patients with previous history of DVIU are at higher risk of treatment failure.

MP-06.03
Combined Inlay and Onlay Buccal Mucosa Urethroplasty for Long and Narrow Bulbar Urethral Strictures
Pardeshi A[1], Raghoji V[2]
[1]Kidney and Urology Super-specialty Clinic, Pune, India; [2]Raghoji Kidney Hospital, Solapur, India

Introduction and Objectives: Long urethral strictures with a very narrow lumen pose an immense challenge for buccal mucosa augmentation urethroplasty. Larger discrepancy in the size of the graft and the native urethral plate makes the graft vulnerable for contracture and fibrosis. Increasing the width of the urethral plate by a vertical midline mucosal incision and applying an additional inlay buccal graft may lessen the discrepancy and help in improving the adequacy of the urethral lumen.
Materials and Methods: Eighteen patients between the age group of 28 to 65 years (mean 47 years) were operated for a combined inlay and onlay buccal mucosa graft urethroplasty from April 2011 to June 2013. Inlay graft was applied either dorsally or ventrally depending upon the urethrotomy incision. The inlay graft length was between 2.5 to 5 cm (mean 3.52 cm), and the onlay graft length varied between 4.7 to 7.6 cm (mean 5.97 cm). Dorsal urethrotomy with ventral inlay was done in 5 (27.8%) and ventral urethrotomy with dorsal inlay was done in 13 (72.2%) patients respectively. Previously operated patients and traumatic strictures were excluded from this retrospective study. Combined grafting was only done in the bulbar urethra. Per-urethral catheter was kept for an average duration of 36 days.
Results: Results were analyzed on the basis of pre- and post-operative uroflowmetry and any kind of post-operative instrumentation was considered as failure of the procedure. The mean follow-up duration was 630 days. Stricture length varied from 1.2 to 4.5 cm. (mean 2.74 cm). All the 18 patients managed to have significantly better flow rates after surgery and till date we haven't encountered any failures. The mean maximum flow after surgery was 23.82 ml/sec. Two patients developed a transient fistula through the operative site which resolved after further catheterization for 3 weeks and did not require any instrumentation till date.
Conclusion: Combined inlay and onlay graft technique improves the success rates of long and very narrow bulbar strictures. Incising the scarred urethral plate with inlay graft augmentation helps in achieving adequacy of the urethral lumen.

MP-06.04
Gapometry Urethrometry Index: Can It Predict Need for Inferior Pubectomy during Progressive Perineal Urethroplasty
Mandal A, Bhogesha S, Mavuduru R**, Singla K**

MP-06.04, Table 1. Univariate analysis of predictors of extent of surgery in repair of PFUDD

	Group 1 (n= 29)	Group 2 (n=14)	Odds Ratio (95% CI)	p-value
Length of urethral defect (cm)	1.990±1.014	3.305±0.877	1.310 (0.671 - 1.950)	**<0.001**
Length of bulbar urethra (cm)	7.688±1.642	6.998 ±0.671	-.689 (-1.615 - .236)	0.141
Gapometry Urethrometry index	0.304±0.211	0.472±0.114	-.168 (-.290 - -.045)	**0.008**

MP-06.04, Table 2. Multivariate analysis of significant predictors of extent of surgery in repair of PFUDD

	β coefficient	Wald Test	OR (95% CI)
Length of bulbar urethra	1.386	1.715	3.99 (0.502 - 31.823)
Gapometry/Urethrometry index	2.465	3.711	11.76 (0.958 - 144.542)
Constant	-3.226	9.115	0.040

Postgraduate Institute of Medical Education and Research, Chandigarh, India

Introduction and Objectives: This study was conducted with an aim to identify preoperative predictors of need for inferior pubectomy during progressive perineal urethroplasty (PPU).
Materials and Methods: Data on 43 patients with isolated pelvic fracture urethral distraction defect (PFUDD) was analyzed. The gapometry urethrometry index was calculated as the ratio of distraction length and bulbar urethral length on preoperative combined ascending and descending urethrogram. The patients were divided into Group A (men who required inferior pubectomy) and Group B (men who could be managed without inferior pubectomy). Univariate and multivariate analysis were used to identify predictive aspects of the evaluated parameters using ROC analysis.
Results: On univariate analysis, longer distraction length and higher gapometry index were significant predictors for need for inferior pubectomy. However, on multivariate analysis, gapometry index remained strong and independent predictor compared to distraction length. ROC curve for gapometry index showed an optimal cutoff of 0.365 with sensitivity of 92.9% and specificity of 31% (Table 1 and Table 2).
Conclusion: Higher gapometry index and longer urethral distraction length are predictors for need for inferior pubectomy during perineal urethroplasty. The gapometry index is a stronger predictor with an optimal cut off index of 0.365.

MP-06.05
A Novel Cell Based Therapy Using Buccal Epithelium Expanded and Encapsulated in Scaffold (BEES-HAUS): Hybrid Approach to Treat Urethral Stricture
Vaddi S, Abraham S, **Gouru V**, Godala C, Vasanthu V, Kumar A
Narayana Medical College, Nellore, India

Introduction and Objectives: We describe the feasibility of a novel cell based technique using buccal epithelium expanded and encapsulated in Thermogelation Polymer (TGP) scaffold for the treatment of urethral stricture. In this procedure autologous cultured buccal epithelial cells embedded in TGP were instilled at the stricture site after a wide endoscopic urethrotomy.
Materials and Methods: Four Patients with urethral stricture were included in the study after informed consent. The Thermogelation Polymer (TGP) used in the study is a co-polymer composed of thermo-responsive polymer blocks. TGP is in liquid state at lower than sol-gel transition temperature but turns to gel immediately upon heating and returns to liquid state again when cooled. The lyophilized TGP vial was obtained from Nichi In Biosciences (P) Ltd, Chennai, India. A buccal mucosal biopsy was taken and was transported to the laboratory in phosphate buffer saline (PBS) and TGP at 4°C. Buccal epithelial cells were separated after enzymatic digestion. The cells were cultured along with TGP for 10-12 days. After cell culture, wide urethrotomy was done dorsally from 9 o'clock to 3 o'clock position. The cultured buccal epithelial cells suspended in TGP were instilled to cover the entire urethrotomy site.
Results: Per urethral catheter was removed after 3 weeks and all voided well with good stream. A check urethroscopy was done at 1 month. It revealed that stricture site was healthy, covered by pinkish epithelium and negotiated with 17 Fr cystourethroscope easily. A repeat check scopy at 6 months revealed same findings. No patient required auxillary procedure.
Conclusions: Our initial case series showed that novel cell based therapy using and BEES-HAUS is a promising alternative for the open substitution buccal graft urethroplasty. It is possible to get the benefits of open substitution buccal urethroplasty with this endoscopic technique without donor site morbidity.

MP-06.06
Tunica Vaginalis as a Vascular Bed for Onlay Buccal Mucosal or Minipatch Skin Grafts for Salvage Reconstruction of Failed Hypospadias Repair: A Preliminary Report
Elbakry A, Zakaria A, Matar A
Dept. of Urology, Suez Canal University, Ismailia, Egypt

Introduction and Objectives: To evaluate the reconstruction of a neourethra in crippled hypospadias in one stage; the graft was implanted on the vascular surface of appropriately dissected tunica vaginalis, then the graft is laid in an onlay fashion to complete the neourethra. To our knowledge this the first report on the use tunica vaginalis as a vascular bed for onlay free grafts.

MP-06.05, Table 1.

slno	Age (yrs)	Prior interventions	Graft size (cms)	Initial cell count	Final cell count (milion)	Stricture length (cm)	Follow-up	Auxillary procedure
1	38	VIU (twice)	0.5x0.5	0.3	1.4	2.5 cm	1 yr	Nil
2	28	Nil	2x1	1.56	11	2 cm	7 mo	Nil
3	70	BMG urethroplasty	2.5x1.5	0.76	10	2 cm	6 mo	Nil
4	37	VIU	2x1.5	2.24	9.2	2.5 cm	6 mo	Nil

Materials and Methods: Nine patients with cripple hypospadias were operated upon for urethral reconstruction. Patients' age was 5 - 8 (mean 6.2 ± 1.09). All patients have 1 - 4 previously failed repairs. A buccal mucosa graft 2 - 4 cm long was used in 6 patients and mini-patch skin graft 1.5-2.5 cm long was used in 3 patients. All grafts were implanted in onlay fashion constituting the ventral wall of the neourethra. A vascularized tunica vaginalis flap was dissected and transposed to act as a vascular bed for the grafts. The grafts were fixed on the vascular surface of the tunica vaginalis flap using 6/0 polygalacten sutures avoiding potential dead space in between. Urethral catheter 8 - 10 French was left for10 - 14 days. Patients were followed-up for 4 - 6 months.
Results: The successful repair was achieved in all cases. No fistulas, meatal stenosis or strictures were encountered along 4 - 6 months follow-up. Cosmetic results were good in 7 cases and acceptable in 2 due to preoperative massive scarring of penile skin and glans deformities.
Conclusion: The use of tunica vaginalis as a vascular bed for free grafts either buccal mucosa or small skin patch is feasible and promising provided that tunica has good vasculture. The technique facilitate implantation of the free graft as an onlay flap for the repair of crippled hypospadias in a single stage. It is necessary to evaluate the technique in a large number of patients.

MP-06.07
Short Term Result of Substitution Urethroplasty Using Free Ileal Mucosa in Patients with Long Stricture of Anterior Urethra

Rajesh R, Kanagasabhapathy S
Dept. of Urology, Thanjavur Medical College, Thanjavur, India

Introduction and Objectives: We evaluated the results of dorsal onlay ileal mucosal graft urethroplasty in long segment anterior urethral stricture.
Materials and Methods: Twenty five patients underwent ileal mucosal urethroplasty for long segment anterior urethral stricture between December 2007 and June 2013.In all the cases the oral cavity was not suitable for mucosal harvest. A single long segment graft was used in all the patients from the proximal bulbar to the meatal end.
Results: Of the 25 patients with a mean follow-up of 41 months (range 3 to 66) 22 patients (88%) were having satisfactory post-operative uroflo with no other urethral manipulation and 3 (12%) patients had short recurrent stricture, which was treated by additional procedures. The mean maximal urine flow rate improved from 7.5 ml/sec to 18.6 ml/sec after the surgery. One patient developed sub acute intestinal obstruction which was managed conservatively.
Conclusion: In patients with long stricture of anterior urethra with unsuitable oral cavity for buccal mucosal harvesting, free ileal mucosa graft urethroplasty can be tried and this gives excellent short-term results.

MP-06.08
Improving Testicular Blood Flow with Electroacupuncture in an Experimental Rat Testicular Torsion Model

Acar O[1], Esen T[1,2], Colakoglu B[3], Camli M[2], Cakmak Y[4]
[1]Dept. of Urology, VKF American Hospital, Istanbul, Turkey; [2]School of Medicine, Koc University, Istanbul, Turkey; [3]Dept. of Radiology, VKF American Hospital, Istanbul, Turkey; [4]Dept. of Anatomy, School of Medicine, Koc University, Istanbul, Turkey

Introduction and Objectives: In our previous work, we have demonstrated that testicular blood flow can be enhanced by electroacupuncture in healthy volunteers. In the present study, we applied the same technique in an experimental testicular torsion model to observe a potential improvement in testicular perfusion.
Materials and Methods: Twelve wistar albino male rats were randomly assigned into two groups (6 rats each in the electroacupuncture and manual acupuncture groups). Three dimensional color doppler ultrasonography was performed with a hockey-stick vascular probe that has a frequency ranging between 6-15 MHz. Testicular perfusion was quantified by the serial volumetric analyses of 1 mm-thick cross-sectional images. Electroacupuncture was applied for 5 minutes at a frequency of 10 Hz via the needles that were inserted across the acupuncture points on the T12 dermatome and tibial nerve territory. In the manual acupuncture group, acupuncture needles were inserted in the same manner but electrical stimulation was not applied. We initially took baseline ultrasonographic recordings of both testicles. Then, the left testicle was twisted 180 degrees clockwise after which ultrasonography was repeated on both sides. Ipsilateral and contralateral ultrasonography were conducted after electroacupuncture and manual acupuncture, respectively in each group. Baseline, post-torsion and post-intervention images in both groups were compared in terms of the volume occupied by the vessels.
Results: In the study group, the difference between baseline and post-torsion testicular perfusion was statistically significant on both sides. After electroacupuncture, we observed a significant improvement in the ipsilateral and contralateral testicular blood flow. In the manual acupuncture group, blood flow diminished significantly on both sides after testicular torsion. However, testicular perfusion, neither ipsilateral nor contralateral, did not show a statistically significant change after manual acupuncture.
Conclusion: Electroacupuncture can improve testicular blood flow bilaterally in a rat model of incomplete unilateral testicular torsion.

MP-06.08, Table 1. Testicular Blood Flow Measurements and the Differences between the Mean Recorded Values

Mean values	Vascularity in the left testis (cm^3)			Vascularity in the right testis (cm^3)		
	Baseline	Post-torsion	Post-intervention	Baseline	Post-torsion	Post-intervention
Electroacupuncture group (n=6)	0.097±0.034	0.001±0.002	0.075±0.026	0.113±0.053	0.055±0.047	0.091±0.041
		P=0.001	P=0.001		P=0.008	P=0.007
Manual acupuncture group (n=6)	0.088±0.018	0.010±0.012	0.006±0.008	0.098±0.009	0.086±0.011	0.076±0.021
		P=0.0001	P=0.314		P=0.012	P=0.091

the prevalence of hematuria in patients under 40 years old. This study describes a large cohort of young patients to gain insight in the distribution and prevalence of urological diseases associated with hematuria.
Materials and Methods: All records of patients with hematuria in the period January 2003 to May 2013 were collected retrospectively. Patient characteristics, outcome of diagnostic studies and diagnoses were analyzed.
Results: A total of 642 patients with hematuria were included of which 94% were male. Median age was 44 years (range 17-65); with 40% (n=257) under 40. Urinary specimens were positive (at least 1-5 RBCs per HPF) in 43% (272/633). A cause for hematuria on ultrasound was found in 11% (43/400), KUB in 5.5% (18/328), CT-IVU in 19% (56/291) and urethrocystoscopy in 17% (71/424). Overall, in 28% of patients a cause for hematuria was found. In 1.9% of patients under 40 years old a malignancy was detected. Urethral stricture disease (4.7%), trauma (4.7%) and Chlamydia trachomatis infection (3.1%) were also common causes for hematuria in patients under 40. In patients with gross hematuria a urological cause was found more often than in patients with microscopic hematuria (50.5% vs. 17.0%, p<0.0001). In 9.2% of all patients a nephrological cause was suspected.
Conclusion: In almost 30% of patients presenting with hematuria, a treatable cause is found. As in older patients, hematuria is a symptom that should not be ignored and requires a urological work-up. In opposition to elderly patients, only 24% of urological diagnoses consist of urolithiasis and malignancies. Therefore, in patients under 40, attention should be aimed at urethral strictures, congenital anomalies, trauma and STD's as well as nephrologic pathology.

MP-06.09, Table 1. Patients under 40 with hematuria

	Age <40 yr (n= 257)	Age ≥40 yr (n=385)	Significance* (p-value)
Sex			
Male	225 (87.5%)	381 (99.0%)	<0.01
Diagnosis	70 (27.2%)	112 (29.1%)	0.66
Urolithiasis	12 (4.7%)	40 (10.4%)	0.01
UTI	15 (5.8%)	12 (3.1%)	0.11
Urethral sticture	12 (4.7%)	12 (3.1%)	0.40
Malignancy	5 (1.9%)	31 (8.1%)	<0.01
Trauma	12 (4.7%)	0 (0.0%)	<0.01
Congenital	6 (2.3%)	4 (1.0%)	0.21
STD	8 (3.1%)	0 (0.0%)	<0.01
Other	15 (5.8%)	12 (3.1%)	0.11
Nephropathy suspected	28 (73.7%)	10 (26.3%)	0.16
*) Calculated with Fisher's exact test			

MP-06.10
A Smart-Phone App for Actual (Not Relative) Length, Girth and Angle Measurements of the Erect Penis by Patients and Surgeons
Garcia M
University of California, San Francisco, USA

Introduction and Objectives: It is often desirable to measure the actual length, width, or curvature of an object such as the erect penis. However, owing to the difficulty with achieving natural erection in a clinic setting, this is not feasible. Instead, we depend on photographic images captured by the patient. Photographic images are distorted by both lens angle and distance from the camera. A simple yet accurate means of measurement would facilitate pre-op counseling, and document pre-op length and angle, both for research and medico-legal purposes.
Materials and Methods: We describe an App that allows one to measure *actual length*, using either a live smartphone image or from an archived 2-D image. The App eliminates angle distortion by guiding the user to position the camera to yield a true anterior/posterior view. The User selects a reference object (RO) and places this beside the target. A novel RO may be used, or, one can be selected from a menu of objects of known diameter. A virtual caliper device is superimposed on a target and manipulated by the user, to measure the on-screen length of the target. The caliper is calibrated to the RO, and thereafter, the caliper measures the length of any object in the same plane as the RO in real dimensions. A working prototype of the App was programmed and used to calculate the actual length, width, and curvature of various targets (whose actual length/curvature is known). Measurements were repeated 6X, by 6 non-surgeons. Measurements were also made from archived 2-D images (i.e. post-hoc), with equal precision and accuracy.
Results: Actual length and width were compared to measured length/area. Accuracy and precision were calculated. Provided that the target occupies at least 30% of the image field of view, accuracy was >98%, regardless of units or magnification. Precision was 95-99%.
Conclusion: Used on a smartphone, the described App serves important mobile-health needs: a means by which patients can record both body appearance and actual-size measurements in a natural setting. This App can be useful to guide pre-op planning and counseling, and to document pre-op measurements.

MP-06.11
Efficacy and Tolerability of Andro-Penis Extender Device in Patients with Penile Dysmorphophobia
Nowroozi M, Ayati M, Radkhah K, Jamshidian H**, Amini E**
Uro-oncology Research Center, Tehran University of Medical Sciences, Tehran, Iran

Introduction and Objectives: A majority of men seeking penile enhancement techniques have a normal sized penis and usually suffer from penile dysmorphophobia. Although penile dimensions fall within the normal range in these patients they have the perception of inadequate penile size. Such patients should be discouraged from undergoing invasive procedures for penile enhancement which are associated with numerous complications and high dissatisfaction rate. However less invasive techniques including penile extenders are not associated with serious complications and may also be beneficial from a psychological perspective. We conducted this study to assess the efficacy and safety of a widely used penile extender, Andro-Penis® (Andromedical, Madrid, Spain).
Materials and Methods: Between December 2010 and March 2012, 34 men complaining of small penis were considered for enrolment. Patients younger than 20 years of age, those with a major psychological disorder, penile curvature and reduced manual dexterity were excluded. Eleven men did not meet inclusion criteria and from 23 subjects who entered the study 20 completed the study. Eligible participants were instructed to use the penile extender for at least 4h/day for 3 months. Penile dimensions including flaccid and stretch lengths were measured at baseline and after 1, 2 and 3 months. Patients were also counseled how to measure penile length during erection.

Results: Flaccid and stretched penile length increased from 88.5±12.3 and 119.3±16.6 cm at baseline to 95.8±12.9 and 143.4±10.6 cm after 3 months. Moreover participants reported erected penis length of 12.5±19.5 and 13.7±21.8 cm at baseline and after 3 months respectively. Increase in penile length was statistically significant. Nevertheless no significant increase in penile girth was noted in this study. More than 50% of patients were satisfied and reported acceptable improvement.
Conclusion: Penile extenders as a minimally invasive treatment with modest efficacy should be considered for men seeking treatment for a short penis. This method is associated with few and minor complications and may also be beneficial from a psychological perspective.

MP-06.12
Current Trends in the Management of Penile Fractures: Results from a European Multicentric Study
Bozzini G[1], Albersen M[2], Romero Otero J[3], Margreiter M[4], Garcia Cruz E[5], Mueller A[6], Gratzke C[7], Serefoglu E[8], Martinez Salamanca J[9], Verze P[10]
[1]Academic Dept. of Urology, IRCCS Policlinico San Donato, San Donato, Milan, Italy; [2]Academic Dept. of Urology, University Hospitals Leuven, Leuven, Belgium; [3]Academic Dept. of Urology, Hospital Universitario 12 De Octubre, Madrid, Spain; [4]Academic Dept. of Urology, Vienna General Hospital, Vienna, Austria; [5]Academic Dept. of Urology, Hospital Clínic De Barcelona, Barcelona, Spain; [6]Academic Dept. of Urology, University Hospital Zurich, Zurich, Switzerland; [7]Academic Dept. of Urology, Ludwig-Maximilians-University (LMU), Munich, Germany; [8]Academic Dept. of Urology, Kiziltepe State Hospital, Mardin, Turkey; [9]Academic Dept. of Urology, Hospital Universitario Puerta De Hierro-Majadahonda, Madrid, Spain; [10]Academic Dept. of Urology, Università Federico II, Naples, Italy

Introduction and Objectives: To review preoperative diagnostic evaluation, surgical treatment and related outcomes of penile fracture.
Materials and Methods: A retrospective analysis of 137 patients from 7 different European Academic centres with penile fracture between 1996 and 2013 was performed. The parameters assessed were age, diagnostic tools including imaging, timing of surgical intervention, length of tunica albuginea defect, surgical technique, and postoperative care.
Results: The mean age of the patients was 38.96 (SD 13.55). All patients underwent routine clinical examination. Among them, 82/137 patients (59.85%) underwent penile Doppler ultrasound and 5 patients MRI. Mean time between ER admission and surgical intervention was 780.6 minutes (SD 31). There were 126/137 patients (91.97%) treated surgically whereas 11/137 (8.03%) were managed conservatively. The mean length of tunica albuginea defect was 15.32 mm (SD 8.30). Mean IIEF-score was 15.09 (SD 7.8) and 16.85 (SD 8.96) after one and three months, respectively. If the surgical intervention was performed more than 8.23 hours after admission, erectile function significantly worsened in the follow-up period ($p<0.05$). A postoperative penile curvature was observed in 5/137 (3.64%) patients.
Conclusions: Penile fracture is a rare event but represents a urological emergency. Clinical examination and penile US Doppler should be performed in all patients. Delaying the surgical intervention for more than 8.23 hours from the presentation in ER resulted in significantly decreased IIEF scores in the follow-up period.

MP-06.13
Penile Grafting for Benign Causes: An Analysis of Outcome
Goonewardene S[1], Pearcy R[2]
[1]Homerton University Hospital, London, UK; [2]Plymouth Hospitals, Plymouth, UK

Introduction and Objectives: Common conditions such as hidradenitis suppurativa, balanitis xerotica obliterans, Peyronies' disease can cause impairment of sexual function. Lack of penile skin can result in impairment of penile function. Grafting techniques have been developed to maintain penile length and function. We present results of our three year series focusing on patient outcomes for skin grafting in patients undergoing penile grafting for benign causes.
Materials and Methods: Over a three year period, 11 cases under a single surgeon undergoing penile reconstruction were reviewed. Patients were followed-up for a maximum of 36 months. Split thickness skin grafts were applied to glans/coronal defects. Full thickness skin grafts were used for shaft defects. We examine underlying pathology, comesis, graft take, sexual function, patient satisfaction and complications.
Results: One hundred percent were cosmetically satisfied both grafted. One hundred percent of grafts had good take with no requirement for further surgery. Grafting did not affect penile function. There was minimal loss of penile length. One hundred percent were satisfied with the outcome of the procedure. Complications included meatal stenosis in 50% of grafted patients. One patient required further scrotal debulking. There were no contractures.
Conclusions: For cases of benign pathology, penile grafting does result in patient satisfaction with good overall cosmesis and erectile function. Good outcomes depend on having an experienced specialist surgeon and team who are able to handle complications when they arise.

MP-06.14
Evaluation of Extra-Corporeal Shock Wave Therapy for the Patients of Peyronie's Disease: A Preliminary Report
Shimpi R
Div. of Urology, Uro-Andrology Clinic, Pune, India

Introduction and Objectives: The non-invasive treatment options available for P.D are oral POTABA, Intra-lesional Steroids, Verapamil ointment, etc., if there is no gross penile deformity. Apart from surgical treatment, there is no specific treatment for the plaques. In this preliminary report, I tried to evaluate the use of ESWT for the painful erections and erectile dysfunction.
Materials and Methods: Twenty two men in the age group of 24-37 years (mean 28 years) treated between January 2009 and July 2011 are included in the present study. Seventeen patients had a single plaque while 5 patients had 2 or more plaques. Those patients who have tried conservative treatment, but were non-responders, are included in the present study. Evaluation consisted of routine and specific investigations such as Colour Penile Doppler and soft tissue X-ray of the penis. ESWT consists of 8 weekly treatment of 20 min duration at the intensity of 1. The results are evaluated at baseline, 8 weeks, 12 weeks and 24 weeks after the therapy. All the patients continued Verapamil ointment thereafter. For evaluation, I have employed the International Index of Erectile Function (IIEFS) questionnaire, VAS (Visual Analogue Scale). The treatment was performed on an out-patient basis and was well tolerated.
Results: Fourteen patients reported significant improvement of mean VAS score, mean IIEFS score at 12 weeks and 24 weeks. The mean plaque size reduced by 1.2-1.8 cm but the curvature degree did not improve significantly. Seventeen patients reported that the pain had significantly reduced after the therapy.
Conclusions: ESWT can significantly improve the painful erections and to some extent, E.D. in the patients with Peronie's Disease. The ESWT can also stabilize the plaque size and may reduce the progression of the disease and needs long-term follow-up.

MP-06.15
Does Early Insertion of a Malleable Penile Prosthesis Allow Later Upsizing of Cylinders in Patients Presenting with Ischaemic Priapism?
Zacharakis E[1], Christopher N[2], **Muneer A**[2], Ralph D[2]
[1]Guy's Hospital, London, UK; [2]University College London Hospital, London, UK

Introduction and Objectives: Prolonged ischaemic priapism refractory to conventional medical and surgical intervention, results in

corpus cavernosum smooth muscle necrosis, followed by fibrosis manifesting as erectile dysfunction and penile shortening. Early insertion of a malleable penile prosthesis is easier to perform and also allows the option of an interval exchange to an inflatable penile prosthesis after a few months. The aim of this study was to assess whether upsizing of cylinders is still possible at the time of exchanging to an inflatable prosthesis.

Materials and Methods: Over a 24 month period 10 patients with refractory ischaemic priapism underwent an early (within 2 weeks) insertion of a malleable (Coloplast Genesis®) penile prosthesis. The mean age was 42.7 years (range 35-69) and the median duration of priapism was 7 days (range 5-10). The aetiology was sickle cell disease (2 patients), idiopathic (4 patients) and antipsychotic agents (4 patients). Following a median period of 5.7 months (range 3.8-11.5) all of these patients underwent exchange of their penile prosthesis to a 3 piece inflatable (AMS 700® or Titan Coloplast®) prosthesis and the size of the cylinders compared.

Results: During the reoperation, it was noticed a median upsize in the length of the cylinders of 1 cm in either one or both corporal bodies (range 0-2cm) as shown in Table 1. Fifty percent of the patients had deliberate undersizing at the initial operation due to a distal shunt. The mean IIEF-5 score preoperatively was 24 (range 23-25). After the initial insertion of the penile prosthesis the satisfaction rate according to the IIEF-5 was 80% compared to 90%, 3 months following the exchange of prosthesis.

Conclusion: Although some priapism patients have a shorter implant inserted initially due to previous shunt procedures, following a period of resolution the cylinders can be upsized at the elective exchange.

MP-06.15, Table 1.

Patients	Right corporal cylinder 1st operation	Right corporal cylinder at exchange	Left corporal cylinder 1st operation	Left corporal cylinder at exchange
1	19	19	18	19
2	21	22	20	22
3	21	23	21	23
4	22	23	22	23
5	21	22	21	22
6	18	21	19	21
7	22	23	22	23
8	23	23	22	23
9	20	22	20	22
10	21	22	21	22
Median	21	22	21	22

MP-06.16

Human Papilloma Virus Infection in Penile and Genitalia Tumors: Atypical Aspects

Vartolomei M, Chibelean C, Martha O, Cotoi O, Sin A, Tilinca M, Craciun C, Dogaru G, Mihail B, Morariu S
University of Medicine and Pharmacy, Targu Mures, Romania

Introduction and Objectives: One of the most interesting characteristics about the HPV infection is the polymorphism of the clinical appearance.

Materials and Methods: We prospectively started a study in 2002 to see the correlations between HPV infection and atypical clinical appearance at Urology and Dermatology Clinics. During 10 years we included in this analysis 128 patients with clinical condiloma acuminate of penile and genital areas.

Results: In 25 cases of the 128, we observed atypical clinical appearance photo documented: Atypical age: 4 cases (three children below 10 years old and one elder 84 years old); Atypical localization 4 cases: endo-uretral (one), external urethra meatus (two), sublingual (one); Atypical clinical subtypes found 17 cases: sub clinical types (4), Bowen papillomatosis (one) and together with invasive carcinoma (one), Eritroplasia Queyrat (3) and with simultaneous invasive carcinoma (one) pigmented condyloma acuminate (3), giant genital warts (2), Busche-Lowenstein condyloma acuminate (2). In one case we found a low risk infection that developed invasive carcinoma.

Conclusion: Male HPV infection takes a diversity of aspects regarding the localization, size, and evolution and transmission way of the lesion. This involves a careful attention in practice and a multidisciplinary approach of such cases. This requires a team management including urologists, dermatologists, pathologists and oncologists.

MP-06.18

The Effect of Acupuncture on Relieving Pain after Inguinal Surgeries

Taghavi R, Tavakoli-Tabassi K, Mogharrabian N, Golchian A, Hasanzade J, Jahed-Ataeian S
Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: Postoperative pain is one of the most prevalent and bothersome issues found in the surgical department. Nowadays, there are various methods of acupuncture used for relieving pain without the complications found in some routine postoperative analgesics. These methods could be especially useful for high risk patients prone to complications from analgesics, such as transplantation recipients. The aim of this study was to evaluate the efficacy of electro-acupuncture on postoperative pain control after inguinal surgeries.

Materials and Methods: Ninety male patients, who were referred to our department with indications of inguinal surgery, were included in the study and randomly divided into two groups, such as acupuncture and control. We used electroacupuncture for the acupuncture group and no actual acupuncture (but placed needle electrodes similar to the acupuncture group) for the control group. Postoperative pain was quantified by a blind observer in both groups using a visual analogue scale (VAS) standard score before being compared.

Results: Pain intensity and analgesic use were significantly higher in the control group ($P < 0.05$). In the acupuncture group, the VAS pain scores were significantly lower than the control group at 0.5, 1 and 2 hours post operation. When the opioid related side effects were compared for each group, the results showed that the number of subjects who experienced dizziness in the acupuncture group was significantly lower than the control group ($P < 0.05$).

Conclusions: Acupuncture in patients, after inguinal surgery, can reduce the need of analgesics, which also directly reduces the complications that may occur when analgesics are used in relieving pain postoperatively.

MP-06.19

Penis Rupture: A Topic for Interdisciplinary Consideration

Herwig R[1], Bayerl M[2]
[1]Vienna International Medical Clinic, Vienna, Austria; [2]International Study Group of Self Organisation, Vienna, Austria

Introduction and Objectives: The purpose of the interdisciplinary cooperation between urological surgery and physics is the development of a physical simulation tool to be used by surgeons in order to give prognosis of possible penis rupture at a certain degree of deviation of the penis and to take prophylactic action.

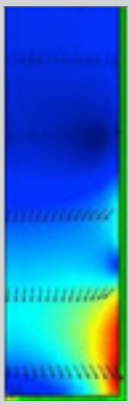
Materials and Methods: For the physicist it

was the first challenge to translate the human organ of the penis into a physical model. Starting and marginal parameters had to be defined, whereby some of them had to be proceeded on the assumption, as physical data of the human living tissue have rarely been measured up to now, such as, f.i. the modulus of elasticity of the tunica, the mass of the penis in erect state and the maximum stress, the tunica can be subdued to. The algorithm and its dependencies had to be developed.

MP-06.19, Figure 1.

$$\varphi = \frac{3}{6b + \frac{Fl}{k}}\left[a \pm \sqrt{a^2 + \frac{2}{3}\left(\frac{Fl}{k} - 1\right)\left(6b - \frac{Fl}{l}\right)^2}\right]$$

MP-06.19, Figure 2.



Results: This paper is a first step of mathematical-physical simulation with the assumption of a 100% filled rigid penis. The calculation (see Figure 1) gives proof of the hypothesis that the fibre-load-angle of the penis is 12 degree (see Figure 2), much less than 30 degrees, which was the assessment of the authorities of urology up to now.
Conclusion: Physical simulation is able to provide the surgeon with a simple instrument to calculate and forecast the risk of the individual patient, based upon dependencies of geometry of the differential geometrical body of the penis.

MP-06.20
Endourologic Management of Urologic Hydatid Cysts
Lezrek M, Bazine K, Tazi H, Asseban M, Beddouch A, Qarro A, Kasmaoui E, Alami M
Dept. of Urology, Military Hospital Moulay Ismail, Meknes, Morocco

Introduction and Objectives: We present our experience with an endoscopic sterilization, evacuation, and cavity sclerosis of urologic hydatid cysts, via a transurethral transvesical approach in a retrovesical hydatid cyst (RVHC), and a percutaneous endoscopic indirect approach in renal hydatid cysts (RHC).
Materials and Methods: Since January 2007, 6 patients (4 men and 2 women) presented with urologic hydatid cyst (5 renal and 1 retrovesical). The mean age was 39 years (13 to 68). The mean cyst diameter was 15 cm. 2 cyst had a fistula with the pelvi-caliceal system. They received 800 mg daily of albendazole-therapy 3 months preoperatively and postoperatively. Operative technique: for RVHC, cystoscopy is performed using a 20.8 Fr nephroscope. For RHC, the patients are placed in the split-leg lateral modified position. A percutaneous tract, with a 24 Fr Amplatz sheath, is performed through a calyx opposed to the cyst. Endoscopy locates the cyst bulge, which is punctured with a 36-cm-18-gauge needle through the nephroscope. A 20 % saline solution is used as a scolicidal agent. After balloon dilation, the nephroscope is introduced into the cyst, and the hydatid material is aspirated. For RHC a drain is inserted through another direct percutaneous access. A nephrostomy tube is inserted in the renal pelvis. A 14 Fr and 18 Fr Foley catheters are respectively inserted in RVHC and the bladder. Postoperatively, the cystic cavity was treated by instillation of povidone-iodine.
Results: The endoscopic approach and treatment of urologic hydatid cysts was possible with a mean operative time of 135 min. The mean postoperative hospitalization was 6 days. Cystoscopy confirmed a healing of the bladder-wall. Nephrostography documented the sealing of the communication with the cystic cavity. After a mean follow-up of 41 months (5 to 69) with ultrasound and/or CT scan, the patients are free of symptoms with a retracted calcified residual cavity.
Conclusion: Endoscopic approach was effective for the treatment of urologic hydatid cysts with lower morbidity than open surgery. We think that there is less risk of dissemination of hydatid materiel, but only a larger series will tell.

Moderated Poster Session 7
Prostate Cancer: Localized Disease
Monday, October 13
1435-1600

MP-07.01

Direct Comparison of the Ability to Predict Final Gleason Score between Magnetic Resonance Imaging Based Targeted Prostate Biopsy and Systematic 14-Core Biopsy

Ito M, Numao N**, Moriyama S**, Nakanishi Y, Yoshida S, Ishioka J, Mastuoka Y, Saito K, Fujii Y, Kihara K

Tokyo Medical and Dental University, Tokyo, Japan

Introduction and Objectives: The aim of this study is to directly compare the ability to predict radical prostatectomy (RP) Gleason score (GS) using MRI-based targeted prostate biopsy (MRBx) compared to systematic 14-core biopsy (S14Bx).

Materials and Methods: A retrospective analysis was performed using data from 53 Japanese patients who were diagnosed using MRBx and S14Bx and then underwent RP from 2011 to 2013. The biopsy protocol was a combination of S14Bx and MRBx. S14Bx includes anterior sampling and MRBx protocol includes 4-core targeted biopsies per one suspicious area. We excluded 5 patients who had neo-adjuvant treatment and 6 patients who had no cancer using S14Bx or MRBx, and the remaining 42 patients were analyzed. We used the highest GS. Biopsy GS was evaluated separately using S14Bx and MRBx. In RP specimens, GS was evaluated in each cancer focus. GS was subdivided into three groups (6, 7 and 8-10). The ability to predict RP GS was directly compared between S14Bx and MRBx.

Results: The median age and PSA were 66 years and 7.5 ng/ml. Table 1 shows the biopsy GS from S14Bx and MRBx. Table 2 shows downgrading, concordance, and upgrading rates between biopsy GS and RP GS. The concordance rate was not significantly different between S14Bx and MRBx (60% vs. 74%). S14Bx tended to underestimate RP GS compared to MRBx with borderline significance (p = 0.055).

Conclusion: MRBx required two-thirds fewer sampling cores, but had the same ability to predict final GS and reduce grade underestimation compared to S14Bx.

MP-07.01, Table 1. Biopsy Gleason Scores in Systematic 14-Core Prostate Biopsy and Magnetic Resonance Imaging-Based Targeted Prostate Biopsy

		S14Bx			
		GS 6	**GS 7**	**GS 8-10**	**Total**
MRBx	**GS 6**	3	2	0	5 (12%)
	GS 7	8	18	1	27 (64%)
	GS 8-10	0	7	3	10 (24%)
	Total	11 (26%)	27 (64%)	4 (10%)	42

GS, Gleason score; S14Bx, systematic 14-core prostate biopsy; MRBx, magnetic resonance imaging based targeted prostate biopsy

MP-07.01, Table 2. Downgrading, Concordance, and Upgrading Rates between Biopsy Gleason Score and Radical Prostatectomy Gleason Score

	Systematic 14-core Bx	**MRI targeted Bx**	**P**
Downgrading	2 (5%)	5 (12%)	0.055
Concordance	25 (60%)	31 (74%)	
Upgrading	15 (36%)	6 (14%)	

MRI, magnetic resonance imaging; Bx, prostate biopsy

MP-07.02

Deferred Active Treatment in Active Surveillance Patients with Prostate Cancer: Triggers for Intervention

Morrow J[1], Curry D[2], Dooher M[2], Hann G[2], Al-Doori M[2], Thwaini A[2]

[1]Ulster Hospital, Dundonald, Northern Ireland; [2]Belfast City Hospital, Belfast, Northern Ireland

Introduction and Objectives: Active surveillance (AS) has emerged as a strategy to avoid or postpone active treatment (radical prostatectomy, radiation therapies) in early, low/intermediate-risk prostate cancer (PCa) without missing the opportunity for cure. Triggers for considering active treatment vary. We assessed the outcome of men with prostate cancer on AS and identify the triggers for active treatment in the cohort studied.

Materials and Methods: We retrospectively reviewed 189 patients on AS between 2006-2012. Data were collected from electronic systems. Patients were followed at 3-monthly intervals with clinical questionnaire, PSA, and were recommended to switch to deferred active treatment based on the triggers below.

Results: A total of 189 men with PCa from three different Trusts were followed with a mean of 22.6 months (5-60). Average age was 64.1 years (41-92). In total, 152 (80.4%) were low risk disease, defined by D'Amico criteria, 37 (19.6%) were intermediate risk. PSA was checked at a rate of 3.29 (1-4) times per year, 27(14.2%) men had their biopsy repeated at a mean interval of 20.7 months (12-60) and 7 (3.7%) men had MRI at 18 month intervals according to their Trusts protocols. Of those who had re-biopsy, 3 (1.5%) had their biopsy upgraded and 5 (2.6%) had their biopsy downgraded. 30 (15.8%) had their management changed to active intervention, because of PSA rise, biopsy upgrade, patients' choice, and MRI upstaging (43.3%, 23.3%, 23.4%, 10%). Cancer specific survival and overall survival at this short follow-up was 100%.

Conclusion: At a short follow-up, AS is a safe strategy in low-risk and selected intermediate risk PCa, reducing overtreatment. PSA rise is the most common parameter utilised for commencing active treatment.

MP-07.03

Outcomes in Prostate Cancer Diagnosed by Transurethral Resection of the Prostate: A Database Analysis in England

Anastasiadis E[1], van der Meulen J[2], Emberton M[3,4]

[1]Clinical Effectiveness Unit (CEU), Royal College of Surgeons of England, London, UK; [2]Dept. of Health Services Research and Policy, London School of Hygiene and Tropical Medicine, London, UK; [3]Dept. of Urology, University College London Hospitals NHS Foundation Trust, London, UK; [4]Division of Surgery and Interventional Science, University College London, London, UK

Introduction and Objectives: Incidental prostate cancer (IPC) is historically believed to be indolent, but some studies show mortality of >20% after 10 years. We evaluated prostate-cancer and all-cause mortality in IPC, and compared this to localised non-incidental prostate cancer (NIPC).

Materials and Methods: Men diagnosed with prostate cancer between 2000 and 2008 were identified from the national cancer registry data in England, and were linked to Hospital Episode Statistics (HES) data, which contains information on procedures undertaken within England. Men with Stage III/IV disease and those who died within 6 months of diagnosis were excluded from the study population. IPC was defined as all men who had a transurethral resection of the prostate (TURP) for benign

MP-07.03, Table 1. Results from the multivariable analysis (PC=type of prostate cancer, RR=rate ratio, CI=confidence interval)

PC	All-cause mortality RR (95%CI, P-value)	Prostate-cancer mortality RR (95% CI, P-value)
NIPC	1.0	1.0
IPC	1.01 (0.96-1.05, P=0.789)	0.70 (95%CI 0.65-0.75, p<0.001)

disease, 60 days before or 14 days after the date of diagnosis of prostate cancer. The rest of the men were classified as NIPC. Kaplan-Meier survival probabilities were calculated. Mortality rate ratios (RR) comparing IPC and NIPC were calculated using Poisson multivariable regression, adjusting for age-group, co-morbidities, year-of-diagnosis, and radical treatment received within 1 year of diagnosis.
Results: A total of 192,960 men were included: 6767 (3.5%) had IPC, 186 193 (96.5%) NIPC. Median follow-up was 4.7 years (0.5-11.0). Men with IPC tended to be older, with less co-morbidities (p-value<0.001). Prostate-cancer cumulative mortality (at 10 years) in IPC was 17% and 19% for NIPC (logrank p-value<0.001). After multivariable adjustment, prostate-cancer mortality RR was 0.70 (95%CI 0.65-0.75, p-value<0.001) (Table 1).
Conclusions: A significant proportion (17%) of men with IPC will die from prostate cancer after 10 years. Nevertheless, IPC has 30% reduced rate of prostate-cancer mortality compared to NIPC. Better risk stratification is required in IPC.

MP-07.04
Watchfull Waiting (WW) for Incidental Carcinoma of the Prostate (CAP): Long-Term Results
Brausi M, De Luca G, Peracchia G, Viola M
Dept. of Urology, AUSL Modena, Carpi, Italy

Introduction and Objectives: The treatment of incidental carcinoma of the prostate is still controversial. The aim of this retrospective study was to evaluate the long-term survival in patients with incidental CAP diagnosed after TURP or open prostatectomy and followed with observation only.
Materials and Methods: The records of 93 patients with incidental CAP diagnosed from 1976 to 1984 were reviewed. Mean patients' age was 68.2 years. All patients included presented at our clinic because of lower urinary tract symptoms. Fifty six out of 93 patients (60.2%) were diagnosed to have CAP after open prostatectomy while 37/93 (38.8%) after TURP. The specimens were reviewed by a senior pathologist and re-staged according to TNM. Fifty two patients had T1a while 41 had T1b CAP. According to Mostofi grading system, 48 patients had G1 tumours, 34 had G2, 5 G3 and 6 Gx. After surgery patients did not receive any additional treatment and were followed according to WW protocol. Minimum follow-up was 10 years. Seventy five patients had 15 and 10 patients had 20 years follow-up respectively.
Results: Ten and 15 years overall survival (OS) was 76% and 50.1% while the disease specific survival (DSS) was 86% for T1a and 85.7% for T1b. The 10 years DSS for G1-G2 tumours was 86% compared to 37.5% for G3. Fourteen out of 93 (15%) patients progressed: 4 patients had local and 10 systemic progression. Mean time to progression was 7.5 years. Twelve patients died because of the disease and 2 are still alive with metastases. All G3 tumours progressed. In G2 and G1s progression occurred in 5/34 (14.7%) and 4/48 (8.3%) respectively.
Conclusions: WW strategy can be proposed to patients with incidental CAP, especially those with low and intermediate grade (G1-G2). Incidental, High grade CAP should be treated more aggressively.

MP-07.05
What Is the Intensity and Cost of Managing Patients on Active Surveillance for Prostate Cancer?
Birkebæk Thomsen F**, Røder M**, Drimer Berg K, Brasso K, Iversen P
Dept. of Urology, Copenhagen Prostate Cancer Center, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark

Introduction and Objectives: Growing evidence supports active surveillance as a mean to reduce over-treatment of prostate cancer. The strategy may per se result in "over-treatment" or "over-management" owing to close and long-standing follow-up. We investigated the burden of active surveillance in patients with localized prostate cancer.
Materials and Methods: The study comprises 317 patients with low or intermediate-risk prostate cancer followed on a prospective, single arm active surveillance cohort. The primary outcomes were number of patient contacts, PSA tests, biopsies, in-hospital admission owing to biopsy complications treatment for BOO, and patients eventually undergoing curative treatment. The secondary outcome was cost. The cumulative incidence of discontinued AS was analysed using a competing risk model with both amendment to watchful waiting and death as competing events. The cost of active surveillance was compared to the hypothetical cost of curative RP for all patients using a Markov model.
Results: The 5-year cumulative incidence of discontinued active surveillance in a competing risk model was 39.5%. During the first 5 years of active surveillance patients underwent a median of 2 sets of biopsies, and the number of annual patient contacts including PSA tests was 3-4. Thirty eight of the 406 biopsy sessions led to hospital admission. Eighty seven out of 317 patients required treatment for BOO. The total cost of active surveillance following median 3.7 years follow-up was DKK 51.836 per patient. Assuming all patients had undergone primary radical prostatectomy the cost difference after a median of 3.7 years favours active surveillance with a net benefit of DKK 28.586 per patient (35.5% reduction).
Conclusion: The concept active surveillance entails a significant burden on patients, materialized in terms of close clinical follow-up, re-biopsies, and a substantial risk of ending up undergoing delayed definitive therapy. Still, active surveillance seems feasible as an initial strategy for low risk- and selected intermediate risk prostate cancer patients.

MP-07.07
Clinic Audio-Recording Reduces Decision Regret in Men Undergoing Treatment for Prostate Cancer: A Comparative Cohort Study
Good D, Laird A, Delaney H, Stewart G, McNeill S
Dept. of Urology, Western General Hospital, NHS Lothian, Edinburgh, UK; and Edinburgh Urological Cancer Group, University of Edinburgh, Edinburgh, UK

Introduction and Objectives: Patients undergoing treatment for localised prostate cancer have a variety of treatment options to choose from, all with varying side effects. The life expectancy of these patients is long and as such the patients will spend many years carrying the burdens and benefits of the decisions they have made. Therefore it is important that decisions on treatments are shared between patient and physician.
Materials and Methods: In 2012, we initiated consultation audio-recordings where patients are given a CD of their consultation to keep and replay at home. We conducted a prospective study of patient satisfaction, quality of life (QOL) and decision regret at 12 months follow-up using posted validated questionnaires for the audio-recording (AR) patients and a control cohort. Mann Whitney U tests, Chi squared tests, Odds ratio, Numbers needed to treat and binary logistic regression analysis were all used and performed using SPSS version 21.
Results: Thirty-nine of 59 patients in the AR group, and 27 of 45 patients in the control group return the questionnaires. Patient demographics were similar in both groups, age, PSA,

D'Amico risk status, treatment received, employment status, ethnicity were all similar, only educational status (more patients left school after 16 yo in the audio-recording group) was statistically different (p = 0.04). Decision regret was lower in the audio-recording group (11/100) vs. control group (19/100) (p = 0.05). The odds ratio for having no regret was 0.216 (CI 0.07 – 0.67), with NNT to prevent regret being 4. Multivariate regression analysis showed that receiving audio-recording was strongest predictor for absence of regret over potency and incontinence). Thematic analysis of free text comments revealed overwhelmingly positive replies (77 positive vs. 5 negative). The 3 most common reasons for satisfaction was increased information recall, increased confidence in their decision and an ability to share information with their family and friends.

Conclusion: The study has shown that audio-recording clinic consultation reduces long-term decision regret, increases patient information recall, understanding and confidence in their decision. The NNT is low at 4 to prevent one patient having decision regret. There is great potential for further expansion of this low-cost intervention.

MP-07.08

Results of Surgical Treatment of Patients with Clinically Insignificant Prostate Cancer Classified according to Epstein Criteria

Nyushko K, **Alekseev B**, Krasheninnikov A, Kalpinskiy A, Moskvina L, Kaprin A
Moscow Hertzen Oncology Institute, Moscow, Russia

Introduction and Objectives: Methods of treatment of patients (pts) with clinically insignificant prostate cancer (CIPC) are on debate. Several studies have demonstrated that established Epstein criteria could be inaccurate in prediction of morphological stage and lead to underestimation of the disease. The aim of the study was to assess morphological results and outcome of surgical treatment of pts with CIPC.

Materials and Methods: Retrospective analysis of 1430 pts after radical prostatectomy (RPE) and pelvic lymph node dissection (PLND) since 1998 till 2014 was done. CIPC according to Epstein criteria (≤2 positive biopsies; <50% of tumor tissue in biopsy specimen; absence of Gleason patterns 4 and 5; PSA≤10 ng/ml and clinical stage ≤T2a) was verified in 185 (12.9%) pts. Mean age was 62.6±6.1 years; mean PSA level – 6.85 ng/ml; mean percentage of positive biopsy cores (PPBC) – 11.6%; mean prostate volume – 38.6±20.8 cm^3; clinical stage T1a-T1c was identified in 124 (67%) patients T2a – in 61 (33%) patients.

Results: Pathological stage pT0 was verified in 4 (2.2%) pts; pT2a – in 25 (13.5%); pT2b – in 8 (4.3%); pT2c – in 129 (69.7%); pT3a-T4 – in 19 (10.3%). Lymph node metastases (pN+) were identified in 2 (1.1%) pts. Thus, bilateral disease was found in 80% of pts, stage migration from localized to locally advanced or pN+ was observed in 21 (11.4%) pts. Morphological Gleason score migration with presence of 4 or 5 patterns was found in 26 (14.1%) pts. Median follow-up time was 33.5±23.9 (3-115) months. Biochemical recurrences occurred in 14 (7.6%) pts, death – in 5 (2.7%) cases. 5-year biochemical progression-free survival (BPFS) was 83.5±5.7%. In Cox regression model only PPBC significantly correlated with BPFS (β=-0.06; p=0.04). 5-year overall and cancer-specific survival were 96.4±3.5% and 97.5±2.5%, respectively.

Conclusions: Epstein criteria are not accurate in prediction of unilateral disease in prostate cancer pts. In pts with CIPC morphological examination reveled locally-advanced and poor differentiated tumors were observed in 11.4% and 14.1% respectively. Surgical treatment of CIPC could be associated with satisfactory oncologic outcome.

MP-07.09

Comprehensive Evaluation of Learning Curve for Minimally Invasive Radical Prostatectomy

Sanchez-Salas R[1], Olivier F[2], Prapotnich D[1], Yu K[2], Secin F[3], Barret E[1], Rozet F[1], Galiano M[1], David S[2], Cathelineau X[1]
[1]Institut Montsouris, Paris, France; [2]Altran Research, Velizy, France; [3]CEMIC and San Lazaro Foundation, Buenos Aires, Argentina

Introduction and Objectives: To estimate the learning curve of minimally invasive radical prostatectomy (MIRP) in terms of biochemical recurrence (BCR) and positive surgical margin (PSM) since the start of our surgical prostatectomy program in 1998.

Materials and Methods: Evaluation of a prospectively collected MIRP database for the estimation of PSM and BCR trends during a 15-year period. Prostatectomies were performed by 9 surgeons. Positive margin was defined as cancer cells at inked margins. Clinical, pathologic, and outcome data were collected for men who underwent pure laparoscopic (LRP) and robotic assisted radical prostatectomy (RARP) between 1998 and 2013. BCR was defined as serum PSA >0.2 ng/ml and rising or start of secondary therapy. Surgical learning curve was assessed with the application of Kaplan-Meier curves, Cox regression model, CUSUM and logistic model in order to define the "tipping point" of surgical improvement.

Results: We evaluated 5547 patients with localized prostate cancer treated with MIRP; 3846 underwent LRP and 1701 RARP. The overall risk of PSM of LRP was 25%, 20% and 17% for the first 50, 50 to 350 and >350 cases, respectively. For the same population, the 5-year BCR rate decreased from 21.5% to 16.7% before and after index case 350. After developing the technique of LRP, the overall team experience became more reliable after approximately 800 cases. RALP started 3 years after the LRP program (after approximately 250 LRPs). The PSM rate decreased from 21.8% to 20.4% after case 100. The corresponding 5-year BCR rate decreased from 17.6% to 7.9% after case 100. In multivariable analysis, predictors of BCR included preoperatory PSA, gleason score, extraprostatic disease, seminal vesicle invasion and number of operations (p=<.0001). Patients harboring PSM showed higher BCR risk (23% vs. 8%).

Conclusion: Our experience confirms the link between surgical experience and oncologic outcomes in radical prostatectomy. We found a lower BCR risk at two years after 350 cases and 100 cases for LRP and RARP, respectively.

MP-07.10

Adverse Oncologic Outcomes after Robotic Assisted Radical Prostatectomy (RARP) in French Patients with Low Risk Prostate Cancer Candidates for Active Surveillance (AS)

Autran-Gomez A[1], Secin F[2], Sanchez-Salas R[1], Monzo J[3], Prapotnich D[1], Barret E[1], Rozet F[1], Galiano M[1], Mombet A[1], Cathala N[1], Cathelineau X[1]
[1]Institut Montsouris, Paris, France; [2]CEMIC and San Lazaro Foundation, Buenos Aires, Argentina; [3]Hospital Dr. Federico Abete, Malvinas Argentinas, Argentina

Introduction and Objectives: Encouraging oncologic results of low risk prostate cancer (PCa) series have been reported in US series; however, this has not been thoroughly evaluated in European centers. The aim of this study is to evaluate oncologic outcomes in French patients with low risk prostate cancer who were candidates for AS but elected to undergo RARP. We additionally estimated predictors of pathologic upgrading/upstaging and variable associated with biochemical failure.

Materials and Methods: We retrospectively analyzed a prospectively collected database of 1552 consecutive patients treated with RALP at Institut Montsouris since 1998. We studied 405 men who had low risk PCa as defined by MSKCC criteria (PSA ≤10 ng/ml, clinical stage ≤2a, biopsy Gleason sum ≤6, number of positive cores ≤2 and maximum percent core involvement ≤50). Patient characteristics, pathologic data and biochemical recurrence were compared between upgraded/upstaged and non upgraded/upstaged patients. Multivariable modeling was used to estimate predictors of pathologic upgrade/upstage and variables associated with biochemical recurrence.

Results: We observed pathologic upgrading at RALP of 48% and pathologic upstaging of

13%. Overall PSM rates were reported in 66 (16%), 16.8% pT2 and 52.6% pT3 (p=0.001). Maximum percent core involvement was the only variable significantly predicting pathologic upgrade/upstage in multivariate analyses. The median follow-up was 28 months, and b-DFS was 92% at 5 years.
Conclusions: Almost half of French patients in our series with low risk prostate cancer who meet criteria for AS treated with RARP experience upgrading/upstaging. Pathologic upgrade/upstage significantly impacts on BCR free survival. French patients with low risk prostate cancer should be counseled about increased oncologic risk when deciding for AS as a treatment option.

MP-07.11
Perioperative, Pathological and Functional Outcomes of Robotic Radical Prostatectomy: 500 Consecutive Cases with a Minimum 12-Month Follow-Up
D'Elia G, Emiliozzi P, Iannello A, Cardi A
San Giovanni Hospital, Rome, Italy

Introduction and Objectives: This study examines perioperative, pathological and functional outcomes as well as complications of robotic radical prostatectomy at a large community-setting center with a quality assurance program.
Materials and Methods: Perioperative data and functional and pathological results of 500 consecutive patients who underwent robotic radical prostatectomy were prospectively collected. Perioperative outcome measures included: operative time, estimated blood loss, transfusion rate, complication rate according to modified Clavien system, median hospital stay, mean catheterization time. Pathologic outcome measures encompassed positive surgical margin rate and biochemical recurrence free survival (PSA < 0.2). Return of continence was evaluated at 1, 3, 6 and 12 months (continent 0 pads; incontinent 1 or more pads). Return of potency was evaluated at 1, 3, 6 and 12 months with IIEF-5 scores in 402 patients who underwent a nerve-sparing procedure (mean age 61 years; range 36-70).
Results: Mean age was 64.1 years (36-73). Mean body mass index (BMI) was 26.6. Median preoperative PSA level was 6.9 ng/ml. Mean operative time was 146 minutes. Mean estimated blood loss was 160 cc. Blood transfusion was needed in 8 patients. Median hospital stay was 3 days, mean catheterization time was 8.1 days. According to the modified Clavien system, grade III complication rate was 2.6%, whereas minor complication rate was 17%. Positive surgical margin rate was 12.8% for pT2 disease and 29% for pT3 disease. Overall biochemical recurrence free survival is 95%. Complete continence at 1, 3, 6, and 12 months was 57%, 88%, 94% and 98%, respectively. Mean age of the 402 patients who underwent a nerve-sparing procedure was 61 years (range 36-69). At 1, 3, 6 and 12 months return of potency (IIEF-5 > 21) with or without the use of oral medications was achieved in 6%, 22%, 51% and 68%, respectively.
Conclusion: Robotic radical prostatectomy has a low perioperative complication rate and acceptable outcomes in terms of positive surgical margins and maintenance of urinary continence and erectile function.

MP-07.12
Perioperative, Pathological and Functional Outcomes in Robotic Radical Prostatectomy Patients with Prostate Weight More Than 100 Gr
D'Elia G, Emiliozzi P, Iannello A, Cardi A
San Giovanni Hospital, Rome, Italy

Introduction and Objectives: This study examines perioperative, pathological and functional outcomes as well as complications of robotic radical prostatectomy patients with prostate weight more than 100 gr.
Materials and Methods: Out of 500 consecutive robotic radical prostatectomy patients, 40 had a prostate specimen weight more than 100 gr. Perioperative data and functional and pathological results were prospectively collected. Perioperative outcome measures included: operative time, estimated blood loss, transfusion rate, complication rate according to modified Clavien system, median hospital stay, mean catheterization time. Pathologic outcome measures encompassed positive surgical margin rate and biochemical recurrence free survival (PSA < 0.2). Return of continence was evaluated at 1, 3, 6 and 12 months (continent 0 pads; incontinent 1 or more pads). Return of potency was evaluated at 1, 3, 6 and 12 months with IIEF-5 scores in 32 out of 40 patients who underwent a nerve-sparing procedure.
Results: Mean age was 67.1 years (58-71). Mean body mass index (BMI) was 28.6. Median preoperative PSA level was 9.9 ng/ml. Median prostate weight was 118 gr (100-188). Mean operative time was 160 minutes (110-220 min). Mean estimated blood loss was 200 cc. Blood transfusion was needed in 1 patient. Median hospital stay was 4 days, mean catheterization time was 9.4 days. According to the modified Clavien system, grade III complication rate was 2.5% (rectal injury), whereas minor complication rate was 20%. Positive surgical margin rate was 13.3% for pT2 disease (4 of 30 pts) and 30% for pT3 disease (3 of 10 pts). Overall biochemical recurrence free survival is 87.5% at mean follow-up of 16.9 months. Complete continence at 1, 3, 6, and 12 months was 48%, 80%, 88% and 92%, respectively. Mean age of the 32 patients who underwent a nerve-sparing procedure was 64 years (range 58-70). At 1, 3, 6 and 12 months return of potency (IIEF-5 > 21) with or without the use of oral medications was achieved in 3.1%, 9.3%, 31% and 58.9%, respectively.
Conclusion: Robotic radical prostatectomy in prostate specimen weight more than 100 gr has a low perioperative complication rate and acceptable pathological and functional outcomes.

MP-07.13
Dorsal Vein Complex Ligation-Free Technique for Laparoscopic Radical Prostatectomy: A Single-Center Experience of Chinese
Liu C, Zheng S, Li H, Xu A, Chen B, **Wang Y**, Xu P
Southern Medical University, Guangzhou, China

Introduction and Objectives: To describe our experience in control bleeding from the dorsal vein complex (DVC) during laparoscopic radical prostatectomy (LRP).
Materials and Methods: This retrospective study utilized prospectively collected data from December 2009 to June 2013 for 138 patients with localized prostate cancer who underwent LRP. Data of 90 patients in whom DVC bleeding was controlled without ligation (Group 1) were retrospectively compared with those of 48 consecutive patients in whom DVC bleeding was controlled with suture ligation (Group 2). Surgical, oncological, and functional outcomes were considered, with special emphasis on estimated blood loss (EBL) and postoperative continence.
Results: Operative time was significantly shorter in Group 1 than in Group 2 (153.7 vs. 173.8 min; p = 0.005). No significant difference in EBL was noted between two groups (213 vs. 207.6 mL). Ratio of positive apical surgical margin was almost the same (2.2% vs. 2.1%). Postoperative continence rates at 1, 3 and 6 months in Groups 1 and 2 were 63.3% vs. 43.9%, 81.1% vs. 63.4%, and 88.8% vs. 73.1% respectively, these differences were statistically significant. But at one year after operation, the continence rates were not much difference between two groups. During follow-up, tumor recurrence or metastasis were not observed in any patient.
Conclusions: Ligation-free is a safe and convenient technique to control DVC bleeding, the prostatic apex can be clearly exposed, while preserving the surrounding anatomy. Operative time was decreased and the level of blood loss was acceptable. Use of this technique may enhance functional outcomes in the early stage, but its long-term therapeutic effects still need large series with longer follow-up studies to be fully evaluated.

MP-07.14

Effects of Tadalafil Treatment Post Bilateral Nerve-Sparing Radical Prostatectomy: Quality of Life, Psychosocial Outcomes and Treatment Satisfaction

Patel H[1], Shah N[2], Lundmark J[3], Cooper-Jones J[4], Büttner H[5], Henneges C[5], Branicka J[6], Ilo D[7]

[1]University Hospital North Norway, Tromso, Norway; [2]Addenbrooke's Hospital, Cambridge, UK; [3]Eli Lilly Sweden AB, Solna, Sweden; [4]Lilly UK, Basingstoke, UK; [5]Lilly Deutschland GmbH, Bad Homburg, Germany; [6]Eli Lilly Polska, Warsaw, Poland; [7]Eli Lilly and Company, Erl Wood Manor, Windlesham, UK

Introduction and Objectives: We report secondary outcomes on quality of life (QoL) and treatment satisfaction data from a multicenter, randomized, double-blind, double-dummy, placebo-controlled trial (NCT01026818) primarily evaluating the efficacy of tadalafil once-daily (OaD) or on-demand (*pro re nata,* PRN) treatment started early after nerve-sparing radical prostatectomy (nsRP).

Materials and Methods: Patients ≤68 years with adenocarcinoma of the prostate (Gleason≤7, normal preoperative erectile function [EF]) were randomized post-nsRP 1:1:1 to 9-month treatment with tadalafil 5mg OaD, tadalafil 20mg PRN, or placebo, followed by 6-week drug-free washout and 3month open-label tadalafil OaD treatment. Secondary outcomes reported include changes in patients' and partners' Expanded Prostate Cancer Index Composite (EPIC26) and Erectile Dysfunction Inventory of Treatment Satisfaction (EDITS), and Self-Esteem and Relationship (SEAR) questionnaires (pairwise comparisons, MMRM, adjusting for treatment, visit, treatment-by-visit interaction, age group, country, baseline score). LS means (95%CI) are reported.

Results: A total of 423 patients were randomized to tadalafil OaD (N=139), PRN (N=143), or placebo (N=141); 57 (41.0%), 58 (40.6%), and 50 (35.5%) aged 61-68 years. At the end of double-blind treatment (EDT), patients' EPIC sexual domain scores improved significantly with tadalafil OaD versus placebo (Table 1: Treatment effect [95%CI]: 9.6 [3.1,16.0]; p=0.004); comparisons of PRN versus placebo at EDT, and both comparisons versus placebo after open-label OAD treatment (EOL) were not significant. Only in older patients (61-68 years), EPIC urinary incontinence domain scores also improved significantly with tadalafil OaD versus placebo (overall treatment effect across all visits 8.3 [0.4,16.1]; p=0.040). Treatment satisfaction increased significantly in both tadalafil groups at EDT, EDITS total scores increased significantly with OaD and PRN versus placebo (p=0.005 and 0.041). At EOL, improvement was significant for tadalafil OaD versus placebo only (p=0.035). No significant differences were observed for SEAR.

Conclusion: These QoL data complement previously reported positive effects of tadalafil OaD on EF recovery at EDT.

MP-07.15

Metabolic Syndrome and Oncologic Outcomes in Men Undergoing Radical Prostatectomy for Prostate Cancer

Bhindi B, Xie W, Hamilton R, Kulkarni G, Kalnin R, Nesbitt M, Alibhai S, Finelli A, Zlotta A, Trachtenberg J, Fleshner N

University Health Network, Toronto, Canada

Introduction and Objectives: Metabolic syndrome (MetS) is associated with an increased risk of prostate cancer (PC) overall and high grade disease on biopsy pathology. In the present study, our objective was to determine if MetS is associated with adverse pathology and risk of treatment failure in men undergoing radical prostatectomy (RP).

Materials and Methods: Patients undergoing RP (2004-2013) were identified using our prospectively maintained institutional database. Salvage RPs and men who received neo-adjuvant therapies were excluded. MetS required any 3 of 5 components (obesity, diabetes or impaired fasting glucose, hypertension, low HDL-cholesterol, and high triglycerides), and was ascertained using electronic chart review. The outcomes were PC stage and grade on final RP pathology, and RP treatment failure, defined by a post-RP serum PSA ≥0.2, or use of adjuvant or salvage therapies such as radiation or androgen deprivation therapy. Multivariable logistic regression models, Kaplan-Meier analyses, and Cox-proportional Hazards models were used.

Results: The final cohort consisted of 1939 men, of which 439 (22.6) had MetS. Median follow-up was 36 months. On RP pathology, there were 663 (34.2%) men with extraprostatic disease (≥pT3), 505 (26%) with Gleason

MP-07.14, Table 1. LS Mean Changes [95% CI] in EPIC and EDITS Scores with Tadalafil OaD, Tadalafil PRN and Placebo from Baseline to End of Double-Blind and Open-Label Treatment Periods (EDT, EOL)

	Tadalafil OaD	Tadalafil PRN	Placebo
EPIC sexual domain score (age-group by treatment interaction: p = 0.083)			
EDT	+27.5 [21.6, 33.4]**	+20.7 [15.3, 26.1]	+18.0 [12.1, 23.8]
EOL	+36.6 [30.0, 43.1]	+32.6 [26.6, 38.6]	+33.4 [27.0, 39.8]
Men ≤60 years	+30.1 [23.2, 36.9]	+31.2 [24.8, 37.6]	+24.9 [18.2, 31.6]
Men 61-68 years	+34.0 [26.0, 42.0]	+22.1 [14.6, 29.5]	+26.5 [18.5, 34.4]
EPIC urinary incontinence domain score (age-group by treatment interaction: p = 0.084)			
EDT	+34.1 [29.3, 38.9]	+31.1 [26.7, 35.5]	+30.6 [25.9, 35.3]
EOL	+37.4 [32.6, 42.3]	+35.5 [31.1, 40.0]	+35.4 [30.7, 40.2]
Men ≤60 years	+33.0 [27.7, 38.3]	+34.6 [29.6, 39.7]	+35.8 [30.5, 41.1]
Men 61-68 years	+38.5 [32.2, 44.8]*	+32.0 [26.2, 37.9]	+30.2 [24.0, 36.5]
EPIC urinary irritative/obstructive domain score			
EDT	+13.8 [11.5, 16.1]	+13.3 [11.2, 15.4]	+12.3 [10.0, 14.5]
EOL	+13.9 [11.5, 16.2]	+13.8 [11.7, 15.9]	+12.3 [10.0, 14.6]
EPIC bowel domain score			
EDT	+5.9 [3.7, 8.2]	+6.3 [4.2, 8.3]	+6.5 [4.3, 8.7]
EOL	+6.9 [4.7, 9.1]	+6.5 [4.5, 8.5]	+6.8 [4.6, 8.9]
EPIC hormonal domain score			
EDT	+1.7 [-0.8, 4.3]	+2.7 [0.4, 5.1]*	-0.2 [-2.7, 2.3]
EOL	+2.5 [0.1, 4.9]	+2.9 [0.8, 5.1]	+3.0 [0.7, 5.4]
EDITS total score			
EDT	+2.2 [2.0, 2.4]**	+2.1 [1.9, 2.3]*	+1.9 [1.7, 2.1]
EOL	+2.5 [2.3, 2.8]*	+2.4 [2.2, 2.6]	+2.3 [2.0, 2.5]

Data are from mixed model for repeated measures (MMRM), including baseline score, treatment, country, visit (EDT, EOL), age group (men ≤60yrs, men 61-68yrs), and visit-by-treatment interaction. Age-group-by-treatment interaction was included only if significant at the 10% level. For men ≤60 years and 61-68 years, the overall treatment effect presented includes all visits from baseline to EOL.

** p<0.01, * p<0.05 versus placebo (MMRM)

≤6 disease, 1321 (68.1%) with Gleason 7 disease, and 113 (5.8%) with Gleason 8-10 disease. There were 357 (18.4%) considered as RP treatment failures. MetS was associated with an increased risk of extraprostatic disease (adjusted OR=1.29, 95%CI=1.03-1.62, p=0.030) and Gleason 8-10 disease (adjusted OR=1.61, 95%CI=1.06-2.45). Although there was a higher rate of treatment failure among men with MetS (19.1% vs. 18.2%), differences did not reach statistical significance in Kaplan Meier analyses and Cox models.
Conclusion: Metabolic syndrome is associated with an increased risk of harbouring extraprostatic and high-grade disease. Longer follow-up will be required to see how this translates into treatment failure outcomes.

MP-07.16
Peritoneal Fenestration Effectively Prevents Symptomatic Lymphocele after Laparoscopic Radical Prostatectomy with Extended Pelvic Lymphadenectomy
Kono Y, Nishihara D, Matsuoka T, Yano T, Utsunomiya N, Okada T, Kawakita M
Kobe City Medical Center General Hospital, Kobe, Japan

Introduction and Objectives: To investigate the incidence and the risk factors of symptomatic lymphocele after laparoscopic extraperitoneal radical prostatectomy (LRP) with extended pelvic lymphadenectomy (ePLND).
Materials and Methods: Among 197 patients who underwent LRP with ePLND between April 2008 and October 2013, risk factors including age, BMI, PSA, clinical stage, pathological stage, total operative time, lymph node dissection (LND) time, node count, with/without clipping (n=185/13), with/without peritoneal fenestration (n=74/124), drainage duration, drainage amount, and with/without administration of low-molecular-weight heparin (LMWH)(n=104/94) were analyzed.
Results: Symptomatic lymphoceles were found in 20 patients (10.1%) on follow-up. DVT and PE were seen in 10% each. Between symptomatic lymphocele (+) group and symptomatic lymphocele (-) group, the mean age (67.2 vs. 67.9 yr, p=0.914), BMI (23.8 vs. 24.2 kg/m^2, p=0.474), PSA (11.3 vs. 10.7 ng/ml, p=0.666), total operative time (322 vs. 349 min, p=0.165), LND time (71.1 vs. 72.0 min, p=0.849), node count (17.1 vs. 16.1, p=0.433), drainage duration (3.4 vs. 3.3 days, p=0.987), and drainage amount (277 vs. 292 ml, p=0.556) were not significantly different. Clinical and pathological stages are also similar in two groups (p=0.522 and 0.807, respectively). Significantly higher incidence of symptomatic lymphocele on chi-squared test was detected in the un-fenestration group compared to the fenestration group (62.4 vs. 37.3%, p=0.031), whereas no significant differences were observed in the incidences of symptomatic lymphocele with/without clipping (93.4 vs. 6.5%, p=0.110), and with/without LMWH (52.5 vs. 47.4%, p=0.246).
Conclusion: Peritoneal fenestration after ePLND has proved to effectively prevent symptomatic lymphocele.

MP-07.17
Fluorescence-Targeted Laparoscopic Lymph Node Dissection in Prostate Cancer
Hruby S[1], Englberger C[1], Lusuardi L[1], Schätz T[1], Kunit T[1], Hager M[2], Janetschek G[1]
[1]Dept. of Urology, Paracelsus Medical University, Salzburg, Austria; [2]Dept. of Pathology, Paracelsus Medical University, Salzburg, Austria

Introduction and Objectives: Recently we have introduced fluorescence by means of Indocyanin Green (ICG) in addition to radioguided dissection using Technetium 99 (Tc99) for laparoscopic pelvic sentinel node dissection (Urology 2012). Since ICG also visualizes the lymphatic vessels, it allows to better understand the lymphatic drainage of the prostate. Hence we could show that ICG alone gave equal results compared to TC99. As evolution we now left the sentinel concept to completely remove this template.
Materials and Methods: A total of 38 consecutive men with intermediate and high risk prostate cancer have undergone targeted Lymphnode dissection during laparoscopic radical prostatectomy. The previous transrectal TRUS-guided Injection of 2ml ICG into each lobe is now replaced by a transperineal approach. After removal of the complete ICG visualize Lymphnode template of each side, a standard extended LN-dissection was added as control. The Equipment for ICG –Visualisation was provided by Storz. All Lymphnodes were evaluated by 250 ym sections and imunohistochemistry. Data were collected prospectively and analyzed retrospectively.
Results: Transperineal Injection allowed for precise deposit of the tracer within the peripheral zone without any periprostatic extravasation. Fluorescence stained (F+) nodes were found on both sides in all patients except one. In total 596 nodes (17.9 ± 8.4/patient) were removed, of which 473 nodes (14.3 ± 8.51/patient) were F+. LN Metastases were found in 15 patients (39.5%), of which 2 patients (5.3%) had solitary micrometastases. In addition 3 patients (7.9%) the LN contained Tumor Cell Cluster. There was not a single patient where non-stained metastases were found in addition to F+ Metastases. In the one patient where there was no staining at all a solitary metastases was found in the template of the extended PLND. Met outside the template of extended PLND occurred in 5 patients (27.8% of N+). Since we always perform extended PLND, when there is no Fluorescence staining at all, no metastases was overlooked with our concept.
Conclusion: Fluorescence-targeted lymphnode dissection allows to identify the lymphatic drainage of the prostate with great reliability. It proved to be more precise than extended lymphnode dissection in patients with intermediate and high grade prostate cancer.

MP-07.18
Safety, Objective Response Rate and Long-Term Oncologic Outcomes of Docetaxel Neoadjuvant Chemotherapy followed by Radical Prostatectomy for Patients with Intermediate- and High Risk Prostate Cancer: A Single-Center Study
Nosov A[1], Petrov S[1], **Reva S**[1], Mamijev E[1], Soroka S[1], Veliev E[2], Moiseenko V[3]
[1]N.N. Petrov Research Institute of Oncology, Saint Petersburg, Russia; [2]Russian Medical Academy of Postgraduate Education, Moscow, Russia; [3]Clinical Institute of Oncology, Saint Petersburg, Russia

Introduction and Objectives: Effective treatment of prostate cancer (PCa) at high risk of recurrence is a challenging problem. Neoadjuvant treatment provides various benefits for these patients, such as the PSA response, decreased tumor volume, and higher survival rate. However, hormonal treatment followed by surgery has limited value. On the other hand, neoadjuvant chemotherapy has become a healthcare standard in treating certain malignancies. According to recent data, neoadjuvant docetaxel chemotherapy followed by radical prostatectomy may improve clinical outcomes without a significant increase of toxicity.
Materials and Methods: Forty-four patients were involved in this study, with a 10-year follow-up period, on average. In the combined (chemotherapy and surgery) treatment group (21 patients), 126 cycles of chemotherapy were administered. We assessed the RPE results in patients with intermediate and high risk of PCa (PSA>10 ng/ml, Gleason score 7 and more, or clinical stage cT2c and more) after weekly treatment with docetaxel (36 mg/m^2 for up to 6 cycles, 21 patients) and compared them with those in the second cohort (23 patients) who met oncologic inclusion criteria but received RP only. The long-term oncologic outcomes in both groups of the patients are reported.
Results: Toxicity has been mostly grade 1-2 in intensity and grade 3 and more complication rate does not exceed 10%. A statistically significant of more than 50% reduction in PSA level (pre- vs. post-chemotherapy) was observed in 52.4% cases. During the 11.4-year follow-up period, improvement in cancer-specific survival (CSS) was noted in 90% of patients from the neoadjuvant chemotherapy group, as compared with 60.9% in radical prostatectomy only group. The biochemical recurrence-free survival (BCR) was 68.5% and 37.7%, and the overall

survival (OS) was 75.5% and 54.6% in the combined treatment group and surgery only group, respectively. However, the differences in BCR and OS were not statistically significant.
Conclusions: The use of neoadjuvant chemotherapy represents a safe and practicable treatment strategy resulting in reduced prostate volume and PSA level. Neoadjuvant docetaxel chemotherapy followed by radical prostatectomy was associated with higher observed BCR and OS, as compared with a surgical treatment only group. A statistically significant improvement of CSS is found in the combined treatment group. Therefore, the benefits of this treatment modality need to be validated for feasible implementation in the modern standard practices of prostate cancer treatment.

MP-07.19
A Tale of Tails: A Novel Approach to Cytokine Immunotherapy
Sakellariou C[1], Smolarek D[1], Elhage O[1], Ukimura O[2], Gill I[2], Smith R[1], Galustian C[1], Dasgupta P[1]
[1]MRC Centre for Transplantation, King's College, London, UK; [2]Keck School of Medicine, University of Southern California, Los Angeles, USA

Introduction and Objectives: Prostate cancer (PCa) progression can arise due to the immunosuppressive tumour microenvironment. We have previously shown that IL-15, unlike other cytokines, such as IL-2, can expand CD8 and NK cells when they are exposed to PCa cells. We hypothesized that if IL-15 could be localized in the cancerous prostate, it will have greater efficacy and less toxicity than drugs administered systemically. Localized immune stimulation can boost systemic immunity to clear distant metastases. Therefore, we created a localizable form of IL-15 to study its effects on NK and CD8 T cells with and without PCa cells present.
Materials and Methods: A modified form of IL-15 was produced enabling conjugation to a cytotopic "tail" structure. The "tail" consists of a thiol-reactive region interacting with free cysteines on IL-15, a cationic region binding negatively charged cell membranes, and a hydrophobic region entering cell membranes. Cytotopic "tailed" IL-15 can thus localize to any lesion where it is injected. The tailed IL-15 was compared with non tailed IL-15 in assays measuring T cell proliferation, and NK and CD8 T cell expansion.
Results: Tailed IL-15 induced greater proliferation (up to 20 fold) of a murine T cell line, CTLL2, than non-tailed IL-15. Its activity was also greater or equivalent to non-tailed IL-15 in its ability to expand NK cells.
Conclusion: A tailed form of IL-15, has greater activity in expanding in immune effector cells than conventional IL-15 and its potential for regioselective action makes it a promising new agent for PCa immunotherapy.

MP-07.20
Salvage Robot-Assisted Laparoscopic Radical Prostatectomy after High Intensity Focused Ultrasound Failure
Manea C[1], Crisan N[1], Logigan H[1], Coroi T[1], Ivan C[1], Coman I[2]
[1]Robotic Surgery Center, Municipal Clinical Hospital, Cluj-Napoca, Romania; [2]Iuliu Haţieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania

Introduction and Objectives: High Intensity Focused Ultrasound (HIFU) therapy is effective in carefully selected cases. Before applying a therapeutic procedure to patients with prostate cancer, it is necessary to define the best indications for treatment in daily clinical practice as primary therapy. Our presentation describes the surgery steps of the radical excision of the prostate gland after initial HIFU treatment and short time results.
Materials and Methods: Out of 192 patients diagnosed with prostate adenocarcinoma and treated with HIFU performed using Sonablate® 500 in the last five years, we used robot-assisted laparoscopic radical prostatectomy (RALP) for 5 cases with post-HIFU local recurrence.
Results: None of the interventions required a conversion to conventional surgery. The average operative time was 125 minutes, the mean blood loss was 105 ml and no patient was transfused. The hystopathological results were stage pT2a in one case, pT2b in two cases, and pT2c in two cases. We recorded a Gleason score of 7 (3+4) for three patients and of 7 with primary pattern 4 for two patients. All cases had adenocarcinoma with ductal features. The resection margins were negative. Two cases didn't have urinary incontinence, one obtained erection 3 weeks postoperatively, and the other three cases had urinary incontinence only on effort, but no erectile function. Mean prospective monitoring time was 5 months.
Conclusions: Patients with low pre-HIFU PSA level and a Gleason score greater than 7 with primary pattern 3 and aggressive histological patterns such as ductal carcinoma are not candidates for safety HIFU therapy. These patients' relapse rate is of over ninety percent. Salvage first-line RALP for biopsy-proven local recurrence of prostate cancer after HIFU is feasible and safe. In our experience, the small number of cases and the short monitoring time limit the determination of the rate of subsequent morbidities, compared to the primary indication of radical prostatectomy.

MP-07.21
Full Functional Length Urethral Sphincter Preservation during Open Radical Prostatectomy: Will It Improve the Continence Rate?
Shimpi R
Dept. of Urology, Ruby Hall Clinic, Pune, India

Introduction and Objectives: The full length of the urethral sphincter is the key for urinary continence after Radical Prostatectomy. As demonstrated by various studies, the Intra-Prostatic Urethra between the apex and verumontanum is an important part of the urethral sphincter complex. My modified technique is aimed at preserving the muscular part of the Intra-Prostatic Urethra in low volume disease.
Materials and Methods: Ninety eight patients within the age group of 54-67 and treated between 2000 and 2012 were analyzed. Twenty three patients with low volume disease were chosen for Full Functional Length Urethral Preservation (FFLU) while 75 had Non-FFLU. Continence rate was assessed at 1 month and 3 months after the catheter removal. The proximal urethral tissue was sent for frozen section.
Results: The continence rate at one month after the catheter removal was defined as no pad at all or one protective pad was used 79.9% with FFLU and that with Non-FFLU was 68.2%. After 3 months, the continence rate rose to 96.7% and 80.4% respectively. The other factors considered in the study are Age, PT stage, prostatectomy Gleason Score. The positive surgical margin rate was 1.6% with FFLU while the one with Non-FFLU was 2.2%.
Conclusion: The improved Urinary Continence Rate achieved by doing this technique shows that this simple manoeuvre of Full Functional Length Urethral Preservation (FFLU) in low volume disease should be attempted wherever possible.

MP-07.22
Prevalence and Risk Factors of Contralateral Extraprostatic Extension in Men Undergoing Radical Prostatectomy for Localized Unilateral Disease at Biopsy: A Global Multi-Institutional Experience
Bienz M[1], Camacho A[1], Hueber P[2], Liberman D[2], Al-Hathal N[3], Al-Enizi A[3], Mouraviev V[4], Canda A[5], Adom M[4], Balbay M[5], Albala D[4], Latour M[2], El-Hakim A[3], Saad F[2], **Zorn K**[2]
[1]University of Montreal, Montreal, Canada; [2]Montreal University Hospital Center, Montreal, Canada; [3]Sacré-Coeur Hospital, Montreal, Canada; [4]Associated Medical Professionals, Syracuse, USA; [5]Ankara Ataturk Training and Research Hospital, Ankara, Turkey

Introduction and Objectives: Interfascial nerve-sparing technique during RARP may be performed on the contralateral side of unilaterally diagnosed prostate cancer. Unsuspected bilateral disease could be associated with

extraprostatic extension. We aim to assess the incidence and risk factors of contralateral EPE (cEPE) and contralateral positive surgical margins (cPSM) in patients diagnosed preoperatively with unilateral disease.

Materials and Methods: This multicenter cohort consisted of 331 men diagnosed with unilateral PCa who underwent RARP. Localization and occurrence of positive cores from biopsy, cEPE, cPSM and SVI was noted. $cEPE^{+}$ and $cEPE^{-}$ groups were compared for preoperative predictive parameters.

Results: Pathology reported cPCa in 50.2% and cEPE in 4% of the cohort. PSA levels of $cEPE^{+}$ and $cEPE^{-}$ patients was 6.4 µg/L (5.1-14.6) and 5.2 µg/L (4.0-7.1) respectively (p=0.026). Also proportion of positive cores (p=0.189), maximum cancer involvement in a core (p=0.168), clinical stage (p=0.327), Gleason score (p=0.178) and TRUS size (p=0.411) was assessed. Lastly, in the pT3 subgroup, the frequency of positive biopsies at the apex increased with contralateral cancer invasion (p=0.007).

Conclusion: Despite the 50% chance of bilateral disease, the risk of cPSM associated with cEPE is only 1% in the cohort. Contralateral nerve-sparing procedures may be considered safe in patients with unilateral disease on preoperative biopsies.

MP-07.22, Table 1.

(%)	**cPCa-, cEPE-** n=165 [50%]	**cPCa+, cEPE-** n=153 [46%]	**cPCa+, cEPE+** n=13 [4%]	**P-value**
PSM	14.5	26.8	38.5	0.008
cPSM	0.0	10.5	23.1	<0.001
SVI	3.0	5.2	38.5	<0.001

Moderated Poster Session 8
Bladder Cancer: Invasive and Superficial Diseases
Monday, October 13
1435-1600

MP-08.01

Hematuria as Screening Test for Bladder Invasion by Carcinoma of the Cervix Can Decrease the Use of Staging Cystoscopy

Wessels S, Heyns C, **Van der Merwe A**
Dept. of Urology, Stellenbosch University and Tygerberg Hospital, Tygerberg, South Africa

Introduction and Objectives: A recent study suggested that hematuria can be used as a screening test to detect urinary bladder invasion in women with cervical cancer. The study of 130 patients (42% had hematuria) showed sensitivity 100%, specificity 60.3%, positive predictive value (PPV) 7.4%, negative predictive value (NPV) 100% and accuracy 61.5% (Asian Pac J Cancer Prev 2012;13(10):4931-3). The objective of this study was to evaluate hematuria as screening test to predict the presence of bladder invasion in women with cervical carcinoma.

Materials and Methods: In total, 241 women with carcinoma of the uterine cervix were evaluated January 2012 through April 2013 using midstream urinalysis, cystoscopy and bladder biopsy to assess malignant bladder invasion. Urine erythrocyte and leukocyte counts were quantified using the Fast Read method during microscopy (counting the cells under a grid cover slide).

Results: The mean patient age was 49.7 (range 20.5 to 87) years. The clinical stage of cervical cancer was T1 in 29.7%, T2 in 42.2% and T3 in 23.4%. Human immunodeficiency virus (HIV) testing was positive in 27.2%. Hematuria (erythrocytes >1000/ml) was present in 41.4% and leukocyturia (>1000/ml) in 49.5%. Bladder invasion (confirmed on histology) was found in 8.3% of cases. The sensitivity, specificity, PPV, NPV and accuracy of hematuria and leukocyturia in detecting bladder invasion is shown in Table 1.

Conclusion: Using significant hematuria (erythrocyte count >100 000/ml) as a screening test for bladder invasion in cervical carcinoma can avoid 78% of staging cystoscopies while missing 7% of cases with bladder invasion. This may be an acceptable option for the management of women with T3 cervical cancer in resource constrained regions, because the treatment does not differ significantly if T3 is cystoscopically upstaged to T4.

MP-08.02

Optical Biopsy with Confocal Laser Endomicroscopy (CLE): A New Technology for Diagnosis of Bladder Cancer – Preliminary Results of a Phase II Pilot Study

Brausi M[1], Peracchia G[1], De Luca G[1], Viola M[1], Swartz F[2]
[1]*Dept. of Urology, AUSL Modena, Carpi, Italy;* [2]*Mauna Kea Technologies, Paris, France*

Introduction and Objectives: Confocal laser endomicroscopy is a new endoscopic imaging technology that could complement white light cystoscopy by providing *in vivo* bladder histopathology. We evaluated confocal laser endomicroscopy by imaging normal, malignant appearing infiammation and suspicious bladder mucosa areas in a pilot study.

Materials and Methods: Patients scheduled to undergo transurethral resection of bladder tumors were recruited during a 2-month period. After standard cystoscopy fluorescin was administer intravesically and/or intravenously as a contrast dye, a 2.6 mm probe based confocal laser endomicroscope was passed through a 17.5 F flexible scope and/or a 24 F rigid cystoscope to image normal or abnormal appearing areas before and after TUR. The images were collected with 488 nm excitation at 8 to 12 frames per second. The endomicroscopic images were compared with standard hematoxylin and eosin analysis of TUR and biopsies of bladder tumor specimen and suspicious areas.

Results: Nine patients were recruited at our center in the last 2 months and treated in 3 OR sessions. Six patients had low grade tumors, 1 high grade, 2 patients had dysplasia (mild and severe) and inflammation. Endomicroscopic images demonstrated clear differences between normal mucosa and low and high grade tumors. In normal urothelium larger umbrella cells are seen most superficially followed by smaller intermediate cells and the less cellular lamina propria. Low grade papillary tumors demonstrate densely arranged but normal-shaped small cells in multiple layers (>6). High grade tumors show markedly irregular architecture and cellular pleomorphism. Some artifacts were often present which were delete during slide preparation.

Conclusions: We report one of the first experience *in vivo* done in europe of confocal laser endomicroscopy in the urinary tract. Differences among normal urothelium, low grade and high grade tumors was observed. We defined specific CLE image interpretation criteria for *in vivo* characterization of inflammation, dysplasia, cis and tumor.

MP-08.03

Results of a Randomized Controlled Trial Comparing Intravesical Combined Chemohyperthermia with Mitomycin-C versus BCG for Adjuvant Treatment of Patients with Intermediate and High Risk Non-Muscle Invasive Bladder Cancer

Arends T, van der Heijden A, Witjes A
Radboudumc, Nijmegen, The Netherlands

Introduction and Objectives: Despite regular adjuvant intravesical treatments, the incidence of recurrences in non-muscle invasive bladder cancer (NMIBC) is still high. Therefore, new treatment options are most welcome. This randomized, controlled, multicentre trial compares combined chemohyperthermia using Mitomycin-C (C-HT) with BCG as adjuvant treatment for intermediate and high risk NMIBC.

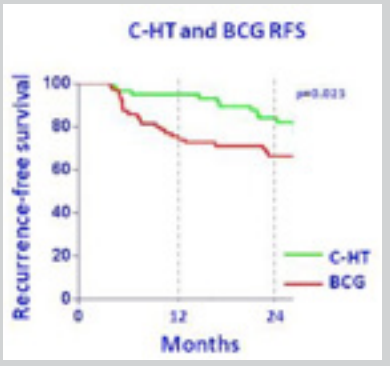
Materials and Methods: Between 2002 and 2012, 190 NMIBC patients were eligible for inclusion and randomized between 1-year C-HT (induction: six weekly treatments and six maintenance treatments) and 1-year BCG immunotherapy (induction: six weekly and nine maintenance treatments). Median follow-up was 22 months in the C-HT group and 18 months in the BCG group. Recurrence-free survival (RFS) in all papillary NMIBC was the primary objective. The secondary objective was

MP-08.01, Table 1.

	Erythrocytes >1000/ml	Erythrocytes >100 000/ml	Leucocytes >0/ml (any)	Leukocytes >10 000/ml	Erythrocytes >1000/ml + any leukocytes
Sensitivity	55%	35%	90%	60%	58.8%
Specificity	65.6%	79.6%	13.1%	58.8%	67.8%
PPV	12.6%	13.5%	8.6%	11.7%	17.2%
NPV	94.2%	93.1%	93.5%	94.2%	93.5%
Accuracy	64.7%	75.9%	19.5%	58.9%	66.9%
Cystoscopies avoided	63.9%	78.4%	12.9%	57.3%	44.8%

the safety-analysis of both treatments.
Results: A total of 190 patients were included; 132 patients were eligible for RFS-analysis and 184 subjects were included in the safety-analysis. Baseline characteristics were equally divided. Two-years RFS was 78.3% en 66.7% for the C-HT and BCG group, respectively (N=132, p=0.023, Figure 1). Although most side-effects didn't differ significantly between the two groups, systemic side-effects (fever, fatigue, arthralgia) were more reported in the BCG group. Bladder pain and –spasms, however, were more frequent in the C-HT group. Muscle-invasive progression was low in C-HT and BCG treatment: 1.7% and 2.8%, respectively.
Conclusion: C-HT is a safe and effective treatment option in patients with intermediate and high risk papillary NMIBC. The 2-years RFS is significantly higher in the C-HT arm in comparison to the BCG-arm. Furthermore, the systemic side-effects are higher in the BCG group. Accordingly, one should consider the option of C-HT treatment in intermediate and high risk NMIBC patients.

MP-08.03, Figure 1. The recurrence-free survival stratified by C-HT and BCG treatment



MP-08.04
A Randomized Control Study to Evaluate the Efficacy, Safety and QOL in Low-Dose Bacillus Calmette-Guerin Instillation Therapy for Non-Muscle Invasive Bladder Cancer
Yokomizo A[1], Akaza H[2], Ozono S[3], Shinohara N[4], Mugiya S[5], Nomata K[6], Koga H[7], Naito S[1]
[1]Dept. of Urology, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan; [2]Dept. of Strategic Investigation on Comprehensive Cancer Network, Research Center for Advanced Science and Technology, The University of Tokyo, Tokyo, Japan; [3]Dept. of Urology, Hamamatsu University School of Medicine, Hamamatsu, Japan; [4]Dept. of Renal and Genitourinary Surgery, Hokkaido University Graduate School of Medicine, Sapporo, Japan; [5]Dept. of Urology, Suzukake Central Hospital, Hamamatsu, Japan; [6]Dept. of Urology, Nagasaki Harbor Medical Center City Hospital, Nagasaki, Japan; [7]Dept. of Urology, Harasanshin Hospital, Fukuoka, Japan

Introduction and Objectives: The optimal dose of intravesical bacillus Calmette-Guerin (BCG) in the treatment of non-muscle-invasive bladder cancer (NMIBC) is controversial. To determine if a low dose (40mg) is not inferior to the standard dose (80mg) in the BCG induction intravesical instillation are associated with less toxicity and higher QOL.
Materials and Methods: After transurethral resection, intermediate- to high-risk NMIBC patients were randomized to low dose (40mg) or standard dose (80mg) of BCG instillation induction therapy (weekly, 8 times). The primary endpoint was the non-inferiority in the low dose group with the null hypothesis of a 15% decrease in the complete response (CR) rate. The secondary endpoints were recurrence-free survival, overall survival, compliance of protocol treatment, adverse events and quality of life (QOL) using EORTC QLQ C30.
Results: In an intention-to-treat analysis of 136 patients, CR rate of the low dose (40mg) and standard dose (80mg) of BCG were 79% (95% C.I.:0.70-0.88) and 85% (95% C.I.: 0.77-0.92), respectively. A Dunnett-Gent analysis revealed that null hypotheses of inferiority of the CR rate in the low dose group could not be rejected (P=0.119). And there was no significant difference in recurrence free survival in those two group (Log rank test, p=0.916) as well as overall survival and compliance of protocol treatment. In the comparison of the frequency of adverse events, the low dose group had a significantly lower frequency in fever (p=0.001) and micturition pain (p=0.047). Furthermore, the low dose group showed significantly higher QOL score in general QOL, role functioning and functional impairment than those in the standard dose group.
Conclusions: The equivalent efficacy of low dose BCG therapy could be acceptable even if the null hypotheses of inferiority of the CR rate in the low dose group could not be rejected. The benefit of the low dose BCG therapy was associated with lower toxicity and higher QOL.

MP-08.05
Is GA Cystoscopy and Bladder Biopsies Necessary after Intravesical BCG Treatment Transitional Cell Bladder Cancer and if the Bladder Is Visually Clear Can GA Cystoscopy Be Substituted by Flexible Cystoscopy?
El Hassan R, Barua B, Sheikh N
Sunderland Royal Hospital, Sunderland, UK

Introduction and Objectives: Bacillus Calmette-Geurin (BGC) is routinely introduced to the patients after endoscopic resection of high grade superficial urothelial tumours. Rigid cystoscopies and biopsies under general anaesthetic often performed to assess effectiveness of BCG therapy. Our aim is to assess the necessity of GA cystoscopies and biopsies in accordance to their compatible histopathological findings.
Materials and Methods: The study included 73 consecutive patients with high grade superficial bladder cancer who underwent full induction and then maintenance course of BCG. The data was collected retrospectively. Cystoscopic and histopathological findings were evaluated and compared for consistency. Cystoscopic findings were categorized as clear, scar, red patch or recurrence. The histopathological findings were categorized as chronic inflammation or positive histology.
Results: Different patients had different numbers of cystoscopies and biopsies done. A total of 510 cystoscopies where done. Numbers of follow-up cystoscopies done ranged from 4 to 15. On cystoscopic finding; 269 (52.74%) where clear, 45 (8.82%) where scar, 152 (29.80%) where red patch, 43 (8.64%) where recurrence.
Conclusion: A total of 510 cystosocpies were done. Only one histology was positive in clear category. The histopathological results were compatible with the cystoscopic visual findings. This is enough evidence to show the association of negative finding from histolopathological results in accordance with clear cystoscopic findings. Patient could therefore preferably avoid this procedure. We recommend that GA cystoscopy should be substituted with flexible cystoscopy. Subsequent GA cystoscopy and biopsies can be instituted in accordance with the flexible cystoscopic findings. This would improve patient safety and care, improve staff efficiency and reduce staff time and costs.

MP-08.05, Table 1.

Histology / Cystoscopy	Total (%)	Biopsy not done (%)	Chronic inflammation (%)	+ Histology (%)
Clear	269	231 (85.87)	37 (13.75)	1 (0.37)
Scar	45	10 (22.2)	27 (60)	8 (17.7)
Red Patch	152	10 (6.6)	121 (79.6)	21 (13.8)
Recurrence	44	0	12 (27.3)	32 (72.7)
Total	510	251 (49.2)	197 (38.6)	62 (12.2)

MP-08.06

Managing High-Risk Non-Muscle Invasive Bladder Cancer with Intravesical Mitomycin-C Hyperthermia: A Seven-Year Experience

Pai A, Nair R, Ayres B, Bailey M, Perry M, Issa R

St. George's Hospital, London, UK

Introduction and Objectives: Intra-vesical Bacillus Calmette–Guérin (BCG) therapy is the current standard of care following transurethral resection of high-risk non-muscle invasive bladder cancer (HR-NMIBC). However, up to 50% of patients who receive BCG treatment will experience non-response, recurrence or disease progression. The alternative, radical cystectomy, may not be suitable for a large proportion of patients due to its inherent morbidity. We report our seven-year experience of intra-vesical Mitomycin-C hyperthermia (MMC-HT), and establish its role as a viable alternative in this patient cohort.

Materials and Methods: Prospective data was collected for 107 patients with HR-NMIBC treated with MMC-HT between June 2006 and January 2014 from a single institution. A total of 103 patients completed induction treatment and underwent urine cytology, cystoscopy and bladder-biopsies at three-months. Responders were continued on maintenance MMC-HT instillations. Response rates at three-months, tumour progression, survival and side effects were noted. Progression was defined as development of muscle invasion, distant metastases, requirement for cystectomy or radiotherapy and death from bladder cancer.

Results: A median follow-up of 40 months (3-92 months) revealed 72% of patients had a complete response at three-months. A further 10% achieved partial response and 18% developed disease recurrence. No patients suffered a Clavien-Dindo complication above two. Five-year overall survival was 61.9%, and disease specific survival was 85.2%. Progression free survival five-year survival was 46.5%. Twenty-one patients underwent radical cystectomy. Nineteen patients had T0 or organ-confined disease and two patients had pathological T3 disease. Only one patient developed disease recurrence following cystectomy.

Conclusion: MMC-HT has comparable five-year survival to radical-cystectomy in the management of HR-NMIBC following BCG-failure. It is well tolerated and can be delivered effectively in a regional centre. For those suitable patients who fail MMC-HT, radical-cystectomy remains a potentially curative option.

MP-08.07

Activity and Safety Analysis of TMX-101 0.2% and 0.4% for Non-Muscle Invasive Bladder Cancer in a Multicentre Phase I Study

Arends T[1], Lammers R[1], Falke J[1], Cornel E[2], Vergunst H[3], de Reijke T[4], Witjes A[1]

[1]Radboudumc, Nijmegen, The Netherlands; [2]Ziekenhuis Groep Twente, Hengelo, The Netherlands; [3]Canisius Wilhelmina Ziekenhuis, Nijmegen, The Netherlands; [4]Academisch Medisch Centrum, Amsterdam, The Netherlands

Introduction and Objectives: TMX-101 is the liquid form of imiquimod, a toll like receptor 7 agonist, for intravesical instillation and is effective *in vitro* against urothelial non-muscle invasive bladder cancer (NMIBC). In Part I of this Phase I study (N=16), the safety of TMX-101 was demonstrated. In this Part II, the activity of TMX-101 was analyzed in low-grade NMIBC patients. Furthermore, the safety of TMX-101 was evaluated.

Materials and Methods: Seven subjects underwent a marker-lesion TURBT and six weekly instillations with TMX-101 0.2% or 0.4% to determine the effective biological dose (EBD, = complete response in >2 patients). Subjects were evaluated weekly on adverse eventse (AE's), pharmacokinetics (PK) and pharmacodynamics (PD). Cystoscopy two weeks after the last instillation confirmed the efficacy of TMX-101 on the marker lesion.

Results: Eighty seven percent reported at least one AE. All events were of ≤ grade 2 intensity (CTCAE 4.2). No clinical significant changes in laboratory parameters and/or vital signs were observed, during or after treatment. An EBD could not be defined as none of the subjects achieved a complete response. Maximum plasma concentration was 75.1 ng/ml in the 0.4% dose group. No drug accumulation was observed. In the PD-analysis, urinary IL-1ra represents the most sensitive and uniform response after TMX-101 instillation (Figure 1). No dose-dependent differences in cytokine concentrations were measured.

Conclusion: TLR-7 agonists are effective in urothelial carcinoma in preclinical research. In Part II of this Phase I study, the EBD could not be determined since no subject achieved complete response. The safety of TMX-101 has been demonstrated in 23 patients (Part I: 16 + Part II: 7). IL-1ra could be valuable as urinary biomarker in future developments. New doses, and other NMIBC-subgroups, should be tested to define the EBD. A pilot study in CIS patients is currently ongoing and results are expected shortly.

MP-08.08

Is Regular Follow-Up Necessary in Patients with Low Grade Bladder Tumors after 5-Years of Disease Free Status?

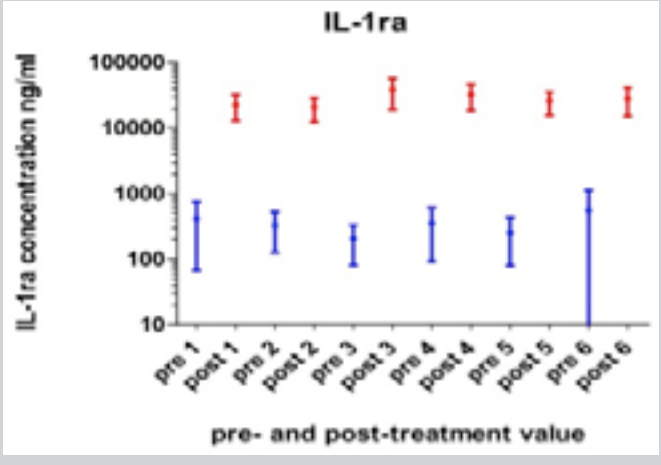
Palou J, Emiliani E, Gausa L, Gaya J, Rodríguez O, Gavrilov P, Kanashiro A, Parada R, Esquena S, Villavicencio H

Fundació Puigvert, Barcelona, Spain

Introduction and Objectives: There is no evidence enough to assess the evolution of low grade bladder tumors after five years without recurrences. The highest rate of recurrences has been reported during the first two years after the initial treatment, moreover one of the main reasons for a strict follow-up is the risk of progression. Current European guidelines recommend the follow-up for low grade tumors using minimally invasive tests. The aim of this study was to assess the incidence and evolution of the recurrences of NMIBC and 5-years of disease free status (low and intermediate risk tumours included).

Materials and Methods: We performed a retrospective study including 704 patients with grade I-II NMIBC. The mean age was 65.8 years and

MP-08.07, Figure 1. Mean and 95%-CI of Pre- and Post-Instillation Concentration of Pooled IL-1ra: Data in All Patients (N=23) (253 Evaluable Urines Out of 276 Collections Time Points)



MP-08.08, Table 1.

Year	1	2	3	4	5	>5
Overall recurrence (%)	11.6	24.9	32.1	35.5	37.4	40.4
Recurrence distribution (%)	28.6	61.5	79.3	87.6	92.2	100

the median follow-up was 65.7 ± 34 months. Patients with CIS associated were excluded. The evolution, current disease status and the recurrences after 1, 2, 3, 4, 5 and >5 years were analyzed in patients with ≥ 5 years follow-up.
Results: A total of 449 patients had ≥ 5-year follow-up recorded, 231 (79.3%) of them, free of tumour at first 3-year period. Only 22 patients (3.1% of all the series and 7.7% of all patients that presented recurrence) had their recurrences after a 5-year disease free period. Moreover all of them were low grade.
Conclusions: After a 5-year period of disease free status, the incidence of recurrence of NMIBC grade I-II (low and intermediate risk) is low. In this group, it is reasonable to perform minimally invasive test or focus the follow upon clinical symptoms.

MP-08.10
Psoas Muscle Mass as a Predictor of Survival in Patients Who Undergo Radical Cystectomy
Ahmadi H[1], Termanjian M[2], Conlon A[3], Daignault-Newton S[3], Al-Attar N[2], Dailey S[2], Montgomery J[2], Weizer A[2], Montie J[2], **Lee C**[2]
[1]USC Institute of Urology, Los Angeles, USA; [2]Dept. of Urology, University of Michigan, Ann Arbor, USA; [3]Dept. of Biostatistics, University of Michigan, Ann Arbor, USA

Introduction and Objectives: Morphomic measures of abdominal muscle mass are reportedly accurate predictors of post-operative outcome in patients who undergo major abdominal surgeries. We evaluated the association between CT scan-based total psoas muscle mass area (TPA) and operative outcome of radical cystectomy (RC) and urinary diversion reconstruction.
Materials and Methods: A total of 442 bladder cancer patients who underwent RC and urinary diversion reconstruction at Department of Urology, University of Michigan between 2007 and 2012, were enrolled. Cross-sectional areas of the left and right psoas muscles at the level of L4 were determined and summed to generate TPA. Outcome measures were short-term outcome including length of hospital stay (LOS), 30-day readmission rate (RR) and complication rate (CR); Intermediate-term outcome including 90-day RR and CR as well as 6-month mortality; and long-term outcome including 3-year overall survival (OS). Multivariate logistic and Cox proportional-hazards regression models were used to determine predictors of operative outcome and OS, respectively. Predictive accuracy of different survival models were also compared using Receiver Operating Characteristic (ROC) curves.
Results: Mean age of participants and follow-up time was 66 y/o (range, 31–91) and 2.3 yrs (range, 0.04–6.3), respectively. Mean TPA was 2363 mm^2 (range, 552–4322). Mean LOS was 10 days. 30-day RR and CR were 63/466 (13.5%) and 196/440 (44.5%), respectively. TPA was not associated with any early operative outcome measures. (P>0.05) 90-day RR and CR were 95/466 (20%) and 238/466 (51%), respectively. Thirty patients (6.4%) died within first 6-months from surgery of whom, 21 (70%) died of UCB. TPA was not associated with any intermediate operative outcome measures. (P>0.05) 3-year OS rate was 0.62 (range, 0.56–0.67). TPA (HR= 0.96, 95%CI: 0.93–0.98; P= 0.005) was significantly associated with 3-year OS. Patients with TPA at highest quartile had 0.18 survival advantage over those with TPA at lowest quartile 3 years from RC. (P= 0.02) Predictive accuracy of 3-year survival model was increased from 0.71 to 0.72 when TPA was included in the model.
Conclusion: Muscle mass does not seem to predict early morbidity and mortality following RC but it is an independent predictor of long-term survival; regardless of age, pathologic stage, and comorbidities.

MP-08.11
Bladder Neck Involvement Predicts both Recurrence and Progression in Non-Muscle Invasive Bladder Cancer
Fujii Y[1], Kobayashi S[1], Kanda E[2], Yokoyama M[1], Nakanishi Y[1], Yoshida S[1], Ishioka J[1], Matsuoka Y[1], Numao N[1], Saito K[1], Kihara K[1]
[1]Tokyo Medical and Dental University, Tokyo, Japan; [2]Tokyo Rosai Hospital, Tokyo, Japan

Introduction and Objectives: About a half of non-muscle invasive bladder cancers (NMIBCs) recur and approximately 15% of these cases progress. We previously reported that the bladder neck involvement (BNI) was an independent risk factor for progression in primary NMIBC patients in retrospective and prospective cohorts (Fujii, et al., Eur Urol 1998; Kobayashi and Fujii, et al., Urol Oncol 2013). In recent years, some Cox proportional hazards models (PHM) have been proposed that handle clustered and multiple event data. The Prentice-Williams-Peterson counting process (PWP-CP) model is a conditional model that analyzes multiple ordered events by stratification. Here, we examine whether BNI is a predictive factor for recurrence and progression in NMIBC including primary and recurrent tumors.
Materials and Methods: Between 2000 and 2010, 410 patients who underwent transurethral resection (TUR) and were pathologically diagnosed with Ta or T1 urothelial carcinoma of the bladder were enrolled in this prospective study. We examined the significance of clinicopathological factors including BNI to predict recurrence and progression by multivariate analysis, including the PWP-CP model.
Results: During the study period, the 410 patients underwent TUR 761 times (368 for primary and 393 for recurrent tumors). The multivariate Cox PHM revealed that BNI was associated with both recurrence and progression. The multivariate PWP-CP model revealed that tumor number, pathologic stage, histologic grade, and BNI were associated with disease recurrence, and histologic grade 3 and presence of BNI were independent predictors for progression. Recurrence probability at 5 years was 74.7% in patients with BNI, compared to 60.2% in patients without BNI (p = 0.0043). Progression probabilities at 5 years in patients with or without BNI were 18.7 and 5.3%, respectively (p <0.0001).
Conclusion: This study is the first to show that BNI is an independent risk factor for both recurrence and progression in NMIBC including primary and recurrent tumors.

MP-08.11, Figure 1.

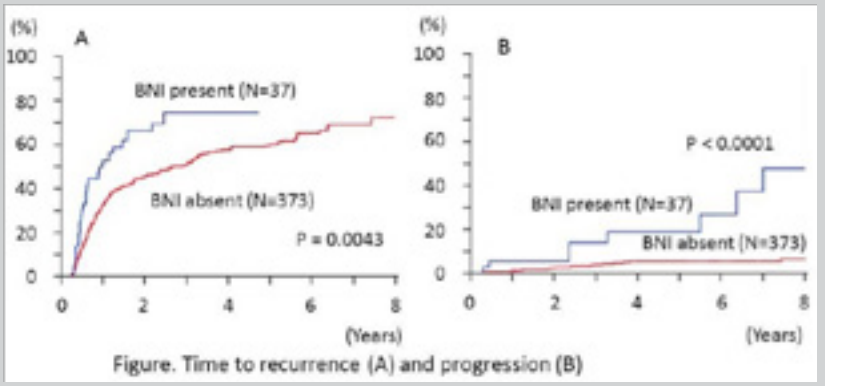


Figure. Time to recurrence (A) and progression (B)

MP-08.12

Radical Cystectomy for Bladder Cancer: Comparison of Early Surgical Complications after Laparoscopic, Open and Combined Surgery in a Single-Site Cohort

Nosov A**, Reva S**, Djalilov I, Petrov S
N.N. Petrov Research Institute of Oncology, Saint Petersburg, Russia

Introduction and Objectives: Radical cystectomy (RC) is the standard method for treatment of muscle-invasive and locally advanced bladder cancer (BCa).Several less invasive approaches has been suggested recently, including totally laparoscopic radical cystectomy (LRC), hand-assisted LRC (HALRC), and robotic cystectomy. However, despite significant improvements in surgical techniques, the overall occurrence of perioperative complications is still high. Our purpose in this study was to evaluate peri- and postoperative morbidity and functional results of LRC in a single-site cohort of patients, comparing it with the standard open approach (ORC) and laparoscopic cystectomy with open urinary diversion (HALRC).
Materials and Methods: A prospective analysis was performed in 51 patients with muscle-invasive and locally advanced BCa, who underwent RC between February 2012 and March 2014, in N.N. Petrov Research Institute of Oncology, Saint-Petersburg. The final cohort included 21 ORC, 21 LRC and 9 HALRC patients. The mean age of patients was 64 (38-81) years, and it did not differ in all groups. The pathological stages were similar in all groups. Multivariable logistic and median regression was performed to evaluate the surgery duration, perioperative and postoperative (30-d and 90-d) complications according to Clavien classification, readmission rates, and length of stay (LOS) – both overall and in ICU.
Results: The duration of surgery for LRC and HALRC was longer than that for ORC (398 min vs. 468 min vs. 243 min, respectively). Despite that, there was no statistically significant influence of surgery type on intraoperative complications - 14.3% in ORC group, 11.1% in HALRC and 4.7% in LRC patients. Major complication rates (Clavien grade ≥3; 23.8% vs. 33.3% vs. 19.4%) were similar in all groups. However, LRC had 4.0-fold lower rate of minor complications (Clavien grade 1-2) as compared to ORC (4.7% vs. 19.0%). LRC had a significantly shorter LOS (27.8 d vs. 32.6 d vs. 22.6 d in ORC, HALRC and LRC groups, respectively), but there were no significant differences in ICU stay (5.1 d vs. 3.1 d vs. 2.1 d). The morbidity rate was equal to one patient per group (medium rate - 5.8%). The common transfusion rate during and after surgical intervention was 19.6% and was higher in ORC group (33.3% vs. 4.7% in LRC); moreover, intraoperative bleeding was lower in minimally invasive techniques - the average volume of blood loss was 285 ml in LRC and did not vary between HALRC and ORC groups - 468 and 577 ml, respectively. The greatest diversities were observed in the occurrence of gastrointestinal complications (firstly - ileus) with significantly better outcomes in LRC patients - 14.2%, as compared to 47.6% and 55% in ORC and HALRC, respectively.
Conclusions: We found that LRC is a safe method associated with lower blood loss, decreased rate of postoperative ileus and reduced LOS as compared with ORC. Using a population-based cohort, we found that laparoscopic surgery for bladder cancer reduces the occurrence of minor complications (mainly due to decreased bleeding and gastrointestinal complication rate) with no influence on major complications.

MP-08.13

Radical Cystectomy (RC) in Octogenarians: Long-Term Experience of Two High Volume Institutions

Brausi M[1], Selli C[2], De Luca G[1], Rossi A[2], Peracchia G[1], Viola M[1]
[1]Dept. of Urology, AUSL Modena, Carpi, Italy; [2]Dept. of Urology, University of Pisa, Pisa, Italy

Introduction and Objectives: The objectives of the study were to evaluate morbidity, overall survival (OS) and disease specific survival (DSS) of radical cystectomy (RC) in octogenarians in two urological centers.
Materials and Methods: From 2000 to 2012, 1010 patients with infiltrative or recurrent high grade T1 TCC of the bladder received RC and urinary diversion in 2 italian institutions. A total of 170 out of 1010 patients (16.8%) were 80 years old or older. The mean age was 83.2 years: M/F: 128/42. ASA score was used for classifying preop. risk. ASA 2: 56/170 (33%), ASA 3: 75/170 (44.1%), ASA 4: 39/170 (23%). There were 113 patients out of 170 (66.5%) who received uretero-cutaneostomy (UCS) as a diversion while 42/170 (25%) had Bricker, 14/170 patients (8.3%) had an orthotopic neobladder, 1/170 patient had an ureterosigmoidostomy (0.5%). P stage was: T0: 1 patient (0.5%). Tis+Ta-T1: 25/170 patients (14.7%); T2b:35/170 (20.6%); T3a: 32/170 (19%); T3b: 45/170 (26.5%); T4: 32/170 (19%). Grade G3:153/170 pts (90%), G2:17/170 (10%). Thirty three patients did not receive pelvic lymph adenectomy (salvage RC). Twenty nine out of 137 patients (21%) were N+(pT3-T4); 125/170 patients (73.5%) were in intensive care Unit (ICU) for 1-6 days. Eighty one out of 170 patients (47.6%) were transfused. The average blood unit received was 3.5 U.
Results: The mean follow-up was 44.5 months (21-118 months). Peri-operative mortality was 7.6% (13/170). Mean hospital stay was 14.5 days (7-35 days). The complication rate (medical and surgical) was 43%. 8.3% of patients required a second operation. Medical and surgical complications by ASA were: ASA2 = 11.8%, ASA 3 = (50%), ASA4 = 38% respectively. The medical complication rate by surgical approach: extraperitoneal = 40.4%, peritoneal = 27%; surgical complication rate: extraperitoneal route = 12.8%, trans-peritoneal approach = 30% ($p < 0.001$). Complication rate by diversion: UCS = 26% Bricker = 49.2%, Orthotopic = 45% ($p<0.001$). OS: After 1 year = 60%, 2 years = 43.6%, 3 year = 40%. DSS was 63.3% at 1 year, 51.2% at 2 years and 50% after 3 years.
Conclusions: The results of our study support the use of RC in octogenarians. Mortality and complications were acceptable. Mayor complications were correlated with high ASA score (3-4), type of urinary diversion (Bricker) and surgical approach (intraperitoneal).

MP-08.14

Robotic Radical Cystectomy with Intracorporeal Urinary Diversion: Impact on an Established Enhance Recovery Protocol

Koupparis A, **McMeekin F**, Aning J, Gillatt D, Rowe E
Bristol Urological Institute, Southmead Hospital, Bristol, UK

Introduction and Objectives: Enhanced recovery protocols (ERP's) incorporating evidence based interventions have been demonstrated to accelerate patient recovery after radical cystectomy. The ERP was introduced at our institution in 2004 and focuses on reduced bowel preparation and standardised feeding and analgesic regimens. The present study evaluates the impact of the introduction of robotic radical cystectomy with intracorporeal reconstruction on an already established ERP.
Methods and Materials: We examined the impact of the introduction robotic radical cystectomy with intracorporeal reconstruction to our ERP. Data was obtained from our prospectively updated database. A total of 112 patients were examined, 56 open radical cystectomies and 56 robotic assisted cystectomies. The primary outcomes measured were inpatient stay and complication rate.
Results: The demographics of the two groups showed no significant difference in age, gender distribution, American Society of Anesthesiologists grade. A significant reduction in total complication rate was observed in the robotic cystectomy group versus the open group (21% vs. 31%, $p<0.001$). In addition the median inpatient stay for the robotic group was 7 days versus 13 days ($p<0.001$).
Conclusions: Introduction of robotic radical cystectomy and intracorporeal reconstruction to an established enhanced recovery protocol improves peri-operative morbidity and significantly reduces in-patient stay.

MP-08.15

Enhancing Outcomes: The Role of an Enhanced Recovery Programme in Robotic Assisted Radical Cystectomy

Nair R[1], Pai A[1], Ayres B[1], Sooriakumaran P[2], Perry M[1], Issa R[1]

[1]St. Georges Hospital, London, UK; [2]University of Oxford, Oxford, UK

Introduction and Objectives: We have previously reported on ERP in open radical cystectomy (ORC) and shown that it is safe and not associated with an increase in complications or readmissions. Further, it is associated with a reduction in ICU and hospital stay and duration of postoperative ileus. The recent introduction of Robotic Assisted Radical Cystectomy (RARC), with its perceived benefit of minimal invasiveness, has led us to question whether patients who have their radical cystectomy in the environment of ERP would also experience this added benefit. In this study we compare the peri-operative results of the last 50 RARC patients with the last 50 ORC. The same ERP protocol was implemented in all patients.

Materials and Methods: From 2010, RARC was offered as the first line treatment for all bladder cancer patients with an indication for bladder extirpation. A prospective review of the last 50 ORC and 50 RARC patients were compared. Pre-operative (age, sex, comorbidity), intraoperative (diversion type, fluid loss, blood transfusion, conversion and number of lymph node dissections-LND) and post-operative (length of stay LOS, nodal yield and pathological T stage) variables were recorded. Thirty-day complication rates were documented according to the Clavien-Dindo classification.

Results: The 2 groups did not differ significantly in their preoperative variables or pathological stage. Patients in the RARC cohort were more likely to have continent diversion, less intraoperative fluid loss (RARC: 533mls, ORC: 1700mls, p=0.0064), shorter LOS (RARC: 9 days, ORC: 10 days, p=0.03), and higher lymph node yield (RARC 13.5, ORC 12, p=0.01). The RARC patients had significantly lower transfusion and overall 30-day complications rates (p=0.0013).

Conclusions: We have shown that robotic surgery offers an added value to patients undergoing radical cystectomy for bladder cancer in addition to the benefits gained from enrolling in an Enhanced Recovery Programme. This is likely due to the minimally invasive nature of robotic surgery, and thus an attenuation of its physiological insult, which is the cornerstone of ERP theory.

MP-08.16

Function of the Orthotopic Ileal versus Sigmoid Neobladders: Continence and Urodynamic Evaluation

Mahmoud M[1], Mousa E[1], Farid M[1], El-helaly H[1], Metwally M[1], Khalaf I[1], Abdel-Khalik M[1], Kamal M[2]

[1]Al-Azhar University, Cairo, Egypt; [2]El-Fayoum Faculty of Medicine, El-Fayoum, Egypt

Introduction and Objectives: To comparatively evaluate the voiding functional results of sigmoid versus W-ileal neobladder reconstruction after radical cystoprostatectomy.

Materials and Methods: Since Jan., 2004, to Feb. 2014 we have performed 162 radical cystectomy; of them, 38 patients with orthotopic diversion were available for evaluation with a mean follow-up of 34 months (range 9-113). We have performed clinical, urodynamic, radiographic and metabolic evaluation twice during the first year and yearly thereafter. Flowmetry, cystometry and pressure-flow test were performed. The upper urinary tract was evaluated by renal ultrasound. Entero-ureteral reflux, entero-urethral stricture and pouch capacity were evaluated by cysto-urethrography. Urethral pressure profile was done in diurnal incontinence.

Results: Clinically, frequency of micturition by day was less in the IN group (5 times/d), while in the SN group was (7 times/d). Day time continence was achieved in 85% of IN patients and in 77% of SN patients, while 82% IN patients and 58% of SN patients where continent by night respectively. Urodynamically the average reservoir capacity of the SN is (375 ml) was lower than the IN (520 ml) with filling pressure of 14 cm H2O and 20 cm H2O for the IN and SN group respectively. The majority of patients void by the Valsalva maneuver yet achieved good peek flow rates (SN group 15.5 ml/sec and IN group 11 ml/sec mean flow) with patients in both groups empty their reservoirs adequately with post void residual (PVR) less than 10% of the void volume. Maximum urethral closure pressure on urethral pressure profile was 44.2 ± 1.6 (range, 32 to 71) cm water in patients with daytime continence, while lower in patients who were incontinent during the day and night; (16 ± 2.1 cm water).

Conclusion: Completely detubularized sigmoid bladder is less compliant and more contractile, yet; it's functionally and urodynamically comparable to detubularized Ileal neoblader. The total high incidence of incontinence in our study may be due to iatrogenic sphincter injury or non-nerve sparing procedures.

MP-08.17

Implications of Circulating Tumor Cells on Adjuvant Chemotherapy Decision-Making in Patients with Urothelial Carcinoma of the Bladder Treated with Radical Cystectomy

Soave A[1], Riethdorf S[2], Weisbach L[1], Minner S[3], Engel O[1], Hansen J[1], Chun F[1], Dahlem R[1], Pantel K[2], Fisch M[1], Rink M[1]

[1]Dept. of Urology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Institute of Tumorbiology, University Medical Center Hamburg- Eppendorf, Hamburg, Germany; [3]Dept. of Pathology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

Introduction and Objectives: Circulating tumor cells (CTC) in urothelial carcinoma of the bladder (UCB) patients treated with radical cystectomy (RC) are predictors for unfavorable outcomes. Administration of adjuvant chemotherapy is associated with improved survival in some UCB patients. The aim of this study is to evaluate if determination of CTC may help in patient counseling regarding administration of adjuvant chemotherapy.

Materials and Methods: We prospectively collected data of 181 UCB patients treated with RC without neoadjuvant chemotherapy at an academic center between 2007 and 2012. Preoperatively collected blood samples (7.5 ml) were analyzed for CTC using the CellSearch® system (Veridex, USA). We correlated clinicopathologic parameters and outcomes with administration of adjuvant chemotherapy and according to the CTC status. Cox regression models evaluated associations with disease recurrence and cancer-specific survival, respectively.

Results: In total, 40 patients (22.1%) had presence of CTC (mean CTC number: 11±34; median: 1) prior to RC. Adjuvant chemotherapy (86.9% Cisplatin-based) was administered to 46 patients (25.4%) with a median number of 4 cycles (range: 1-6). Administration of adjuvant chemotherapy was significantly associated with younger age, advanced pT-stage, higher grade, lymph node metastasis, presence of LVI and positive margin status (all p-values ≤0.039). Patients with presence of CTC received more often adjuvant chemotherapy (CTC pos vs. neg: 35% v. 18%; p=0.023). At a mean follow-up of 30 months, CTC presence was associated with disease recurrence and cancer-specific mortality (both p<0.001), respectively, in patients without adjuvant chemotherapy. In contrast, in patients who received adjuvant chemotherapy CTC status was not associated with outcomes. In multivariable analysis that adjusted for age, pT-stage, tumor grade, lymph node metastasis, LVI and margin status, presence of CTC was an independent predictor for disease recurrence (HR 3.94; 95%CI 1.77-8.77; p=0.001) and cancer specific mortality (HR 3.83; 95%CI 1.56-9.38; p=0.003), respectively, in patients without adjuvant chemotherapy administration.

Conclusions: Presence of CTC is a strong predictor for outcomes in UCB patients treated with RC without adjuvant chemotherapy. Thus, CTC status may be used for patient counseling and decision-making regarding further therapies in patients who otherwise would not be counseled regarding adjuvant therapies. Moreover, adjuvant chemotherapy may abrogate the impact of CTC on survival.

MP-08.18

Adjuvant Cisplatin-Based Combination Chemotherapy for Lymph Node-Positive Urothelial Carcinoma of the Bladder following Radical Cystectomy: A Retrospective International Study of More than 1500 Patients

Lucca I[1,2], Rouprêt M[3], Kluth L[4], Rink M[4], Tilki D[5], Fajkovic H[1], Kassouf W[6], Hofbauer S[1], De Martino M[1], Karakiewicz P[7], Briganti A[8], Trinh Q[9], Seitz C[1], Fritsche H[10], Burger M[10], Lotan Y[11], Kramer G[1], Shariat S[1,11,12], Klatte T[1]

[1]Dept. of Urology, Comprehensive Cancer Center, Medical University of Vienna, Vienna General Hospital, Vienna, Austria; [2]Dept. of Urology, Centre hospitalier universitaire vaudois, Lausanne, Switzerland; [3]Dept. of Urology, Groupe Hospitalier Pitié-Salpêtrière, Assistance Publique Hopitaux de Paris, Faculty of Medicine Pierre et Marie Curie, Institut Universitaire de Cancérologie GRC5, University Paris 6, Paris, France; [4]Dept. of Urology, University Medical Centre Hamburg-Eppendorf, Hamburg, Germany; [5]Dept. of Urology, University of California Davis School of Medicine, Sacramento, USA; [6]Dept. of Urology, McGill University, Montreal, Canada; [7]Cancer Prognostics and Health Outcomes Unit, University of Montreal Health Centre, Montreal, Canada; [8]Dept. of Urology, San Raffaele Scientific Institute, Urological Research Institute, Milan, Italy; [9]Dept. of Surgery, Division of Urology, Brigham and Women's Hospital/Dana-Farber Cancer Institute, Harvard Medical School, Boston, USA; [10]Dept. of Urology, Caritas St. Josef Medical Center, University of Regensburg, Regensburg, Germany; [11]Dept. of Urology, University of Texas Southwestern Medical Center, Dallas, USA; [12]Dept. of Urology, Weill Cornell Medical College, New York-Presbyterian Hospital, New York, USA

Introduction and Objectives: To compare outcomes of patients with lymph node-positive urothelial carcinoma of the bladder (UCB) treated with or without adjuvant cisplatin-based combination chemotherapy (AC) after radical cystectomy (RC).

Materials and Methods: We retrospectively analyzed 1,523 patients with lymph node-positive UCB, who underwent RC with bilateral pelvic lymph node dissection. All patients had no evidence of disease after RC. AC was administered within 3 months. Competing-risks models were applied to compare UCB-related mortality.

Results: Of the 1523 patients, 874 (57.4%) received AC. The cumulative 1-, 2- and 5-year UCB-related mortality rates for all patients were 16%, 36% and 56%, respectively. Administration of AC was associated with an 18% relative reduction in the risk of UCB-related death (SHR 0.82, p=0.005). The absolute reduction in mortality was 3.5% at 5 years. The positive effect of AC was detectable in patients ≤70 years, in women, in pT3-4 disease, and in those with a higher lymph node density and lymphovascular invasion. This study is limited by its retrospective and non-randomized design, selection bias, the absence of central pathologic review and lack in standardization of lymph node dissection and cisplatin-based protocols.

Conclusion: AC seems to reduce UCB-related mortality in patients with lymph node-positive UBC after RC. Younger patients, women and those with high risk features such as pT3-4 disease, a higher lymph node density and lymphovascular invasion appear to benefit most. Appropriately powered prospective randomized trials are necessary to confirm these findings.

MP-08.19

Impact of Neoadjuvant Chemotherapy on Complications of Minimally Invasive Radical Cystectomy

Lizée D[1], Slaoui H[1], Rocchini L[1,2], Sanchez-Salas R[1], Prapotnich D[1], Barret E[1], Rozet F[1], Galiano M[1], Ingels A[1], Audenet F[1], Cathelineau X[1]

[1]Institut Montsouris, Paris, France; [2]Università Vita-Salute San Raffaele, Milano, Italy

Introduction and Objectives: Neoadjuvant chemotherapy before minimally invasive radical cystectomy (MIRC) is considered a standard of care in muscle invasive or recurrent, high-risk, non-muscle invasive bladder cancer. We evaluated the impact of neoadjuvant chemotherapy on morbidity and mortality after MIRC.

Materials and Methods: Using a prospectively maintained, single institution database, we evaluated 135 patients who underwent MIRC (laparoscopic, n=100; robotic, n=35) between 2007 and 2013 with at least 90 days of follow-up. Complications were analysed and graded according Clavien's classification system. Logistic regression models were used to evaluate the impact of neoadjuvant chemotherapy on post-operative complications. Kaplan-Meyer methods with log rank test were used for cancer-specific survival probabilities and differences between each group (radical cystectomy with or without neoadjuvant chemotherapy).

Results: The median age of patients was 66 years of age and 86% had a Charlson index ≥2. Of them, 62 received neoadjuvant chemotherapy (54.5% MVAC). Overall, 119 patients (88%) developed 179 complications, mainly of infectious (63.7%) or gastro-intestinal (28.1%) origin within 90 days of surgery. The most frequent grade of complications was grade 2 (n=55), followed by grade 1 (n=38) and grade 3-4 (n=22); three patients (all without neoadjuvant chemotherapy) died before day 90 after cystectomy. Neoadjuvant chemotherapy had no impact on the incidence of post-operative complications but was associated with less positive nodes (p= 0,004) compared to patients without neoadjuvant chemotherapy. In univariate and multivariate analysis, higher T stage was correlated with an increased incidence of complications (Clavien 2 or more). Median duration of follow-up was 17.2 months. Overall survival rates were 83% and 80% at 2 years in patients with and without neoadjuvant chemotherapy, respectively.

Conclusion: Neoadjuvant chemotherapy does not have an impact on postoperative morbidity nor mortality. Longer follow-up is needed to evaluate the impact of neoadjuvant chemotherapy on oncologic outcomes.

Moderated Poster Session 9
Stones: Surgical Management and New Technologies
Monday, October 13
1435-1600

MP-09.01
External Validation of S.T.O.N.E Nephrolithometry Scoring System
Noureldin Y[1,2], Elkoushy M[1,3], Andonian S[1]
[1]McGill University Health Centre, Montreal, Canada; [2]Dept. of Urology, Benha University, Kalyobiya, Egypt; [3]Dept. of Urology, Suez Canal University, Ismaillia, Egypt

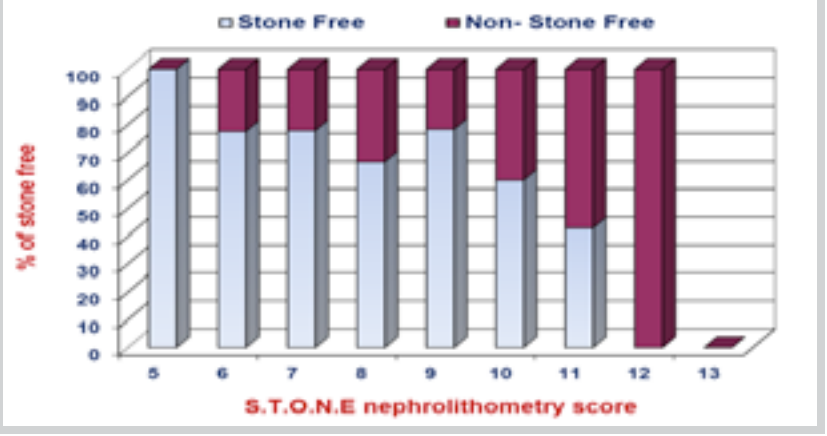
Introduction and Objectives: To perform external validation of S.T.O.N.E Nephrolithometry as an emerging surgical scoring system of patients undergoing percutaneous nephrolithotomy (PCNL).
Materials and Methods: All PCNL cases performed by a single endourologist (SA) from 2009 till 2013 at McGill University Health Center were reviewed. Out of 185 cases, 155 were chosen in this study after exclusion of 2nd look PCNL cases and cases where the percutaneous access was established by interventional radiologist. CT scans of these patients were reviewed for the five parameters of the S.T.O.N.E Nephrolithometry scoring system (stone size, tract length, obstruction, number of involved calyces and the stone essence). The score was then calculated and correlated with the stone free status (as the main goal of PCNL), in addition to the estimated blood loss (EBL), operative time and the length of hospital stay (LOS).
Results: A total of 155 cases were included**.** The mean age was 54.9±1.2 (17-85), with 100 (64.5%) males and 55 (35.5%) females. The mean stone score was 7.67±0.1 (5-13), with mean stone volume of 609.8±48.4 (25-4030) mm^2, mean Hounsfield unit of 887.7±25.3 (222-1766), mean tract length of 97.3±1.9 (53-175), mean BMI of 26.9±0.5 (17.2-51), mean operative time of 100.1±2.8 (60-240) min and mean LOS of 4.2±0.3 (1-18). The overall stone free rate after the primary procedure was 71.6%. The S.T.O.N.E score significantly affected the stone-free status (p=0.008) and the EBL (p=0.003). There was good correlation between the S.T.O.N.E Nephrolithometry score and operative time (r=0.4; p=0.00) and LOS (r=0.3; p=0.001). Therefore, the higher the S.T.O.N.E Nephrolithometry score, the longer the operative time, the higher the estimated blood loss, the longer the LOS, and the lower the stone-free status.
Conclusion: This study confirms external validation of the S.T.O.N.E Nephrolithometry scoring system as a preoperative predictor of PCNL outcome.

MP-09.02
Utility of the Guy's Stone Score and Nephrolithometric Nomogram Based on Computed Tomographic Scan Findings for Predicting Percutaneous Nephrolithotomy Outcomes
Valente P, Castro H, Vila F, Borges R, Lindoro J
Tamega e Sousa Hospital, Penafiel, Portugal

Introduction and Objectives: The aim of this work is to evaluate the utility of Guy's Stone Score and Nephrolithometric Nomogram of CROES based on CT scan findings for predicting percutaneous nephrolithotomy outcomes.
Materials and Methods: The authors reviewed retrospectively all cases of PCNL performed in our center. Using CT scan results, all cases were classified according Guy's Stone Score (GS) and it was calculated the chance of treatment success using the Nephrolithometry Nomogram of CROES (NNC). Outcomes and complications (Clavien Classification System–CS) were analysed. Success was defined as no residual fragments or residual stone fragments < 4mm at follow-up imaging. The data analyses were made using IBM SPSS Statistics 20.0.

Results: Since September 2008 to June 2013, were performed 81 PCNL for primary treatment of renal stones. Of them 24.7% were classified as GS1, 4.9% as GS2, 44.4% as GS3 and 25.9% as GS4. Among the characteristics of the groups, the authors found significative differences in mean length of calculus (GS1=22.8mm; GS2=29.4mm; GS3=36.7; GS4=47.1mm, p<0.0001). The mean of operative time was different among groups (GS1=159.4min.; GS2=126min.; GS3=139.5min.; GS4=174.7min.), with statistically significance (p=0.013). The success rate after first PCNL was 50% in GS1, 100% in GS2, 52.8% in GS3 and 47.6% in GS4, (p=0.169). The rate of repeat PCNL as adjuvant treatment was 15% in GS1, 11% in GS3 and 19% in GS4 (p=0.709). The global success rate after adjuvant therapies was 85% in GS1, 100% in GS2, 91.7% in GS3 and 76.2% in GS4 (p=0.359). The rate of relevant complications was 5% in GS1 (blood transfusion-CSII), 0% in GS2, 8.3% in GS3 (renal abcess-CSIIIb, Pyelonephritis-CSII, blood transfusion-CSII) and 19% in GS4 (Pyelonephritis-CSII, Urosepsis-CSIVb and 2 blood transfusion-CSII). Using the NNC the cases were divided into two groups (A:<60% vs. B:≥60% chance of treatment success). Group A included 45.7% of cases. Only calculus length had statistically significant difference (A:48.8mm vs. B:26.9mm, p=0.0001). The complications rate was A=16.5% vs. B=4.5%, p=0.084. The success rate after first PCNL was A=48.6% vs. B=56.8%, p=0,508. The global success rate after adjuvant therapies was 75.7% in Group A vs. 95.5% in Group B with statistically significance (p=0.011).
Conclusions: The Guy's Stone Score and Nephrolithometric Nomogram of CROES based on CT scan findings are good instruments for predicting PCNL outcomes. The GS4 and the Group of <60% of chance of treatment success using the referred Nomogram are associate with higher rate of complications and a lower global success rate. These prognostic tools may be useful in patient counseling, optimize treatment selection and plan surgery.

MP-09.01, Figure 1.



MP-09.03
Diagnostic Performance of Low-Dose Non Enhance CT with Iterative Reconstruction in Diagnosis of Urolithiasis
Ryu J[1], Ahn S[2], Choi J[2], Kim J[2], Moon Y[1], **Kim T**[1]
[1]Chung-Ang University Hospital, Seoul, South Korea; [2]Kepco Medical Center, Seoul, South Korea

Introduction and Objectives: Low-dose CT (LDCT) is a promising option for diagnosing urinary stones, but it can substantially increase image noise. We evaluated the efficacy of iterative reconstruction (IR) technique for reducing image noises on LDCT and the diagnostic

performances especially in urologic perspective.
Materials and Methods: A total of 197 stones from 119 patients who performed non-enhanced CT with both standard dose and LDCT with IR (LDCT-IR) were enrolled. Interpretations were performed in the two scans for stone characteristics (size, volume, location, housefield unit(HU), skin-to-stone distance (SSD)), radiation (dose-length product (DLP), effective dose (ED)), image noise (objective, subjective). Inter-observer agreements were assessed between urologist and radiologist with kappa analysis. All comparisons were performed after dividing all stones into 3 groups; all size, larger than 3mm and less than 3mm.
Results: No statistical differences were found in stone characteristics between the two scans except HU in the all size group. The average DLP and ED were 394.94mGy and 5.92mSv in CCT, and 92.88mGy and 1.39mSv in LDCT-IR, respectively. The average dose reduction was 76.6% (p<0.001). In the LDCT-IR, the sensitivity, specificity, positive predictive value, negative predictive value, accuracy for the urologist and radiologist reviewer have no significant differences for diagnosing stones of larger than 3 mm (p >0.05). Inter-observer agreement of LDCT-IR between the two reviewers was high with kappa values ranging from 0.901 to 1.000 in all groups. Objective image noise was higher on LDCT-IR (p<0.01), but no significant differences of subjective noise was found.
Conclusions: LDCT-IR showed significant radiation reduction while maintaining image quality as an attractive option in urologic perspective to diagnosis of urinary stones.

MP-09.04
A Prospective Randomized Trial about Music Listening to Decrease Discomfort during SWL
Bosio A, Destefanis P, Alessandria E, Buffardi A, Bisconti A, Gontero P, Fontana D, Frea B
Dept. of Urology, Città della Salute e della Scienza, Molinette Hospital, Turin, Italy

Introduction and Objectives: SWL can cause discomfort and pain. Reducing pain during SWL is also important to limit pain-induced movements and excessive respiratory excursions. The objective of our study was to evaluate if music listening can have a role in reducing patient discomfort during SWL.
Materials and Methods: We proposed to all patients treated by SWL from February 2011 to October 2012 to participate in a prospective randomized trial. A total of 3500–4000 SW were delivered at 20–24 kV according to individual tolerance. Patients randomized in Group A listened to music during the first part of the treatment (first 1800 SW), patients in Group B during the second. Patients were asked to fill in a questionnaire and a visual analogue scale (VAS) for pain concerning each part of the treatment.
Results: All the 70 patients (34 in Group A, 36 in Group B) appreciated the chance to listen to music during SWL and would choose music listening again in case of further treatments. Ninety four percent considered music useful to relieve pain or discomfort. Mean VAS score decreased during music listening in Group A (4 ± 2.17 vs. 5.24 ± 2.36; p = 0.03), but not in Group B. The significant increase in mean VAS score during the second part of the treatment observed in Group A (p = 0.01), was not observed in Group B (p = 0.15). The need for analgesics was reduced during the listening part of the treatment in both groups (from 29% to 26% in Group A and from 22% to 19% in Group B), although not significantly (p = 0.41 and p = 0.38). SW number in the second part of the treatment was higher in Group B (mean 2097 SW vs. 2056 SW), but not significantly (p = 0.42).
Conclusion: The great majority of patients appreciated music listening during SWL and considered music helpful in relieving pain. During music listening, mean VAS score decreased in the first part of the treatment and did not increase in the second, the need for analgesics tended to decrease and there was a trend to tolerate a higher number of SW.

MP-09.05
The Effect of Kidney-Protective Treatment Protocols on Clinical Renal Injury during Extracorporeal Shockwave Lithotripsy
Ng C, Luke S, Lee W, Teoh J, Hou S
The Chinese University of Hong Kong, Hong Kong, China

Introduction and Objectives: We would like to assess the effects of different treatment protocols on acute renal injury in human subjects during extracorporeal shockwave lithotripsy (ESWL).
Materials and Methods: Adult patients with renal stone ≤ 15mm and planned for ESWL were recruited and randomized to follow one of the protocols, (1) 80% power (19.2kV) from the beginning till the end of treatment (Control); (2) the first 100 shocks at 40% power (9.6kV), followed by SWs at 80% power till the end; (3) the first 100 shocks at 40% power, followed by a 3-minute pause and then further SWs at 80% power till the end; (4) the first 100 shocks at 80% power, followed by a 3-minute pause and then further SWs at 80% power till the end. MRI or NCCT was performed on Day 2 after ESWL to assess renal haematoma. Spot urine samples were collected before (baseline), immediately (post-treatment), then at Day-2, Week-6 and Week-12. Urinary markers N-acetyl- β-D-glucosaminidase (NAG), albumin, Neutrophil gelatinase-associated lipocalin (NGAL) and Interleukin-18 (IL-18) for comparison.
Results: A total of 320 patients were recruited. The baseline and treatment parameters of the 4 groups were comparable. Results showed no significant difference between groups in the incidence of haematoma. However, there was a trend that Group 3 and 4 patients tend to have lower rate of haematoma. Urinary NAG, albumin and IL-18 levels increased significantly after ESWL compared to baseline levels in all groups (p<0.005). No significant difference was observed in the level of markers between groups, however, albumin levels dropped back to normal more rapidly in Group 3 and 4 than Group 1 and 2.
Conclusions: No significant decrease of renal injury was observed in patients treated with low energy shockwave pretreatment protocol and pause-protection protocol modified ESWL compared to those received standard protocol. However, pause-protection protocol (Group 3 & 4) treated patients have shown a trend of decreased incidence of haematoma and accelerated normalization of acute kidney injury markers.

MP-09.06
Impact of Shock Wave Lithotripsy on Renal Function
Tam S, Ghiculete D, Alzahrani T, D'A Honey R**, Pace K**
St. Michael's Hospital, University of Toronto, Toronto, Canada

Introduction and Objectives: To evaluate if shock wave lithotripsy (SWL) impacts renal function, and to assess any cumulative effect of repeated treatments.
Materials and Methods: A total of 324 patients who had at least one SWL with serum creatinine measurements before and after, from 2002-2013, were included in this study. The patients were divided into 3 groups based on number of SWL treatments (1, 2-5, >5). The estimated glomerular filtration rate (eGFR) was used as a marker of overall renal function. For each patient, the baseline eGFR was compared to values after at least 1 SWL using a paired t-test. ANOVA was used to compare any change in renal function before and after SWL. Multivariate linear regression was used to identify other variables that might impact renal function.
Results: There was a mean of 3.5 years between serum creatinine measurements, and patients had a mean age of 49 years at the time of their first treatment; 60% of patients were male. Sixteen percent of patients underwent 1 SWL treatment, 69% underwent 2-5 treatments, and 15% underwent more than 5 treatments. Overall, there was a decrease in eGFR seen after SWL, but the absolute change was small (84.1 to 81.4, p=0.02). There was no significant difference in change in renal function in patients treated with a single SWL compared to those with multiple treatments (p=0.26). Younger

females were more likely to have a reduction in renal function after SWL. Stone location, length of time between creatinine measurements, number of SWL treatments, and BMI did not impact change in renal function.
Conclusions: While some, especially younger females, demonstrated a small deterioration in renal function over time, the number of SWL treatments did not correlate with this change. This suggests that even multiple SWL treatments have negligible impact on global renal function.

MP-09.07
New Is Silver and Old Is Gold: Not True for Simens Third Generation Electromagnetic Lithotripers
Choo Z, Liu Z, Tan Y, Lee Y
Tan Tock Seng Hospital, Singapore

Introduction and Objectives: Extracorporeal shock wave lithotripsy (ESWL) is an important modality in the treatment of urinary lithiasis. Siemens Modularis (SM) and Simens Lithoskop (SL) are both third generation electromagnetic lithotripters from the same manufacturer with SL being a newer model with a wider focal zone and inline targeting capability which have a potential for higher stone free rates after a single session. This study aims to compare stone free rates after first session of ESWL between SM and SL.
Materials and Methods: Between August 2012 and September 2013, we retrospectively reviewed 100 ESWL cases performed with SM and SL each. All stones were less than 2cm and were first session ESWL. The stones were localized, and treated with the appropriate number of shocks and energy level as per guidelines. All patients were followed-up within 30 days with the same radiological imaging used before and after the procedure. The operators were all doctors trained in operating the lithotripters.
Results: The mean stone size for SL in the kidney and ureter were 9.8 mm (SD 3.7) and 9.9 mm (SD 4.2) respectively with 54% located in the kidney and 46% in the ureter. The mean stone size for SM was 10.4 mm (SD 3.8) in the kidney and 10.1 mm (SD 3.5) in the ureter with 58% located in the kidney, and 42% in the ureter. Overall stone free rate for both kidney and ureter combined was 45% for SL and 20% for SM and this was significant with a p-value of 0.001.
Conclusion: The initial clinical experience with SL shows higher stone free rate after one session of ESWL compared to an older electromagnetic lithotripter, SM.

MP-09.08
Lessons Learned After 558 Procedures with Flex-Xc Digital Flexible Ureteroscope
Multescu R, Geavlete B, Georgescu D, Geavlete P
Dept. of Urology, "Saint John" Emergency Clinical Hospital, Bucharest, Romania

Introduction and Objectives: New digital flexible ureteroscopes offer certain advantages by comparison to their predecessors. We aimed to retrospectively analyze the ureterorenoscopic procedures performed with the Storz Flex-Xc model in order to evaluate its particularities.
Materials and Methods: Between May 2012 and January 2014, all the flexible ureteroscopic procedures performed with Storz Flex-Xc were analyzed. A total number of 5 ureteroscopes were used: (the first and last ones previously used in another center and 3 new ones).
Results: A total of 558 procedures were performed on 510 patients: first endoscope used on 62 procedures (55 patients), second one on 96 procedures (90 patients), third one on 151 procedures (139 patients), the fourth on 159 procedures (143 patients) and the last one, still operational on 90 procedures (83 patients). Ureteral access sheath was used in 71% of the cases. The endoscopes were used for 51, 67.1, 107.7, 107.2 and 69 hours, respectively. Difficulties to effectively access the stone were encountered in 0.4% of the cases. Overall stone free rate was 92.8% after one, 96.9% after two and 97.8% after three procedures. Major repairs were needed after optical system chip failure (first endoscope), significant damages of the outer coating (second one) and severe deterioration of the deflecting mechanism (third and fourth endoscopes).
Conclusions: The digital Storz Flex-Xc seems to be a durable model of flexible ureteroscope. It offers excellent maneuverability and visibility, translating in great effectiveness.

MP-09.09
Retrograde Flexible Ureteroscopy: Experience on 1000 Cases
Geavlete P, Multescu R, Georgescu D, Geavlete B
Dept. of Urology, "Saint John" Emergency Clinical Hospital, Bucharest, Romania

Introduction and Objectives: Nowadays flexible ureteroscopy is, in many centers, a routine procedure. The aim of this study was to evaluate the indications, limits and efficacy of flexible ureteroscopy on a significant number of cases.
Materials and Methods: Between January 2002 and January 2014, 1000 diagnosis and treatment retrograde flexible ureteroscopic procedures were performed at "Saint John" Emergency Clinical Hospital. We retrospectively reviewed the indications, endoscopes' types, procedural efficacy and complications rates.
Results: A fiberoptic first generation Storz flexible ureteroscope was used in 194 cases, a digital Flex-Xc in 588 cases, a fiberoptic Wolf Cobra in 68 cases and a digital Olympus URF-V in 150 cases. A total of 9.8% of the procedures were diagnostic, 2.4% therapeutic for upper urinary tract tumors and 87.8% for pyelocaliceal lithiasis (associated or not with other pathologies such as pyelocaliceal diverticulum or infundibulum stenosis). During the diagnostic procedures inspection of the entire upper urinary tract was possible in 91% of the cases (89 patients). Stone free rate in lithiasis

MP-09.07, Table 1. Stone free rates according to lithotriptor type for different stone locations

Stone Free (ie: absence of radiologically reported evidence of targeted stones within 30 days after 1st session ESWL)	Lithoskop	Modularis	p-value
Gender: Male Female	 26 (62%) 17 (38%)	 15 (75%) 5 (25%)	0.4005
Renal Upper pole	3/13 (23.0%)	7/13 (53.8%))	NA
Renal Middle pole	2/8 (25.0%)	4/11 (36%)	
Renal Lower pole	15/33 (45.0%)	2/34 (5.9%)	
Overall Stone Free Percentage for Renal Stones	37%	23%	0.091
Upper ureter	19/40 (47.5%)	7/40 (17.5%)	NA
Middle ureter	-	0/1 (0.0%)	
Lower ureter	6/6 (100.0%)	0/1 (0.0%)	
Overall Stone free Percentage for Ureter Stones	54%	17%	0.001
Overall Stone Free Percentage for Both Kidney and Ureter	45%	20%	0.001

cases was 94.8% (832 cases) after one procedure, 97.9% (860 cases) after two procedures and 98.8% (867 cases) after three procedures. Complication rate was 19.2%, 16.2% Clavien I and II, 3% Clavien III, 0% Clavien IV and V.
Conclusions: Retrograde flexible ureteroscopic approach is an efficient diagnostic and treatment method for upper urinary tract pathology. Technological progress during the last years modified method's indications. The safety of this procedure is very good, most of the complications being minor.

MP-09.10
Predictive Factors for Stone Clearance following Ureteroscopy and Laser Lithotripsy
Marri R[1], **Housami F**[1], Malki M[2], McIlhenny C[1]
[1]Forth Valley Royal Hospital, Larbert, UK; [2]University Hospitals of Leicester, UK

Introduction and Objectives: Semi-rigid ureteroscopy and flexible ureterorenoscopy have a high stone clearance rate and low morbidity and mortality rate. The aim of this study is to identify patient, stone and procedure factors predictive of stone clearance.
Materials and Methods: Data was collected prospectively for all emergency and elective therapeutic semi-rigid ureteroscopy or flexible ureterorenoscopy for stone disease between November 2010 and October 2013. Patient, stone and procedure parameters were recorded at the time of ureteroscopy. Stone clearance was evaluated with x ray or CT-KUB depending on the opacity of presenting stone.
Results: During the study period 305 patients underwent therapeutic ureteroscopy of which 243 (85.6%) were stone free at 3 months follow-up. Patient related parameters of age, gender, BMI and co-morbidities had no affect the stone clearance rate. Clearance rates were highest in lower or mid ureter 96.6% as compared to upper ureter 81.2%, renal pelvis 76.7%, upper/mid pole 78.4% or lower pole 77.8% stones (p=0.001). There were no significant differences in number of stones, stone composition or mean density but clearance correlated with lower total stone volume (p<0.001). Procedure related parameters showed a correlation between the stone clearance rate and lower laser energy (p=0.001), shorter operative time (p=0.013) and retrieval of stone fragments (p=0.002).
Conclusion: Stone location and total volume impact on the rate of stone clearance, whereas stone composition and density seem less relevant in the era of laser lithotripsy. Retrieval of fragments improved clearance rates mainly for renal stones.

MP-09.11
Predicting Surgical Time in Ureteroscopic Stone Surgery
Housami F[1], Malki M[2], Marri R[1], McIlhenny C[1]
[1]Forth Valley Royal Hospital, Larbert, UK; [2]University Hospitals of Leicester, UK

Introduction and Objectives: Semirigid ureteroscopy and flexible ureterorenoscopy have a high stone clearance rate and low morbidity and mortality rate. However variation in surgical time exists which has an impact on planning surgical lists. The aim of this study is to identify patient, stone and surgeon factors predictive of the surgical time.
Materials and Methods: Data was collected prospectively for all emergency and elective therapeutic semi-rigid or flexible ureteroscopy for stone disease between November 2010 and October 2013. Patient, stone and procedure parameters were recorded at the time of ureteroscopy.
Results: During the study period, 320 patients underwent therapeutic ureteroscopy. We excluded 12 bilateral ureteroscopies and 3 ureteroscopies for encrusted stents. Data was analysed for the remaining 305 procedures. The patient's age correlated with longer surgical time (R=0.198, p<0.001). We found no significant effect of patients' gender, BMI or ASA grade on the surgical time. Procedures performed by trainees were slightly longer, 50±18 minutes, than those performed by consultants, 45±24 minutes. There were no significant differences in the surgical time by stone location, chemical composition or the presence of ureteric stent. However the surgical time correlated to the number of stones (R=0.232, p<0.001), total stone volume (R=0.424, p<0.001) and mean stone density (R=0.209, p<0.001). The surgical time to treat a single stone was 43±22 minutes compared to 56±22 minutes for multiple stones (p<0.001). The surgical time to treat a stone volume less than 500cc (which corresponds to 10mm diameter calculus) was 42±19 minute compared to 68±26 minutes for larger stone volume (p<0.001) The surgical time to treat stones of density less then 800HU was 43±21 minutes compared to 54±24 minutes for stones of higher density (p<0.001).
Conclusion: The number of stones, total stone volume and mean stone density correlated with the surgical time for therapeutic ureteroscopy. The data is useful when planning surgical lists to estimate the time required for each procedure.

MP-09.12
Routine Use of Ureteral Access Sheath during Flexible Ureteroscopy for Urolithiasis Treatment: Is It Feasible?
Multescu R, Geavlete B, Georgescu D, Geavlete P
Dept. of Urology, "Saint John" Emergency Clinical Hospital, Bucharest, Romania

Introduction and Objectives: Use of ureteral access sheath during retrograde flexible ureteroscopy is still an issue of debate. The aim of our study was to evaluate the particularities of routine use of such a device.
Materials and Methods: We prospectively evaluated 200 patients treated by retrograde flexible ureteroscopic approach for single pyelocaliceal stones between 1 and 2 cm in size: 100 in which a Cook Flexor 10/12F ureteral access sheath was used and 100 in which the procedure was performed without it. Pre-ureteroscopy stenting necessities, intraprocedural characteristics, stone-free rates and complications were evaluated and compared.
Results: Among all the patients, 7% of the first group and 10% of the second one were already JJ stented. Due to difficulties to ascend the access sheath a supplementary 8% of the cases from the study group were also stented, while in the second group impossible ureteral passage of the flexible ureteroscope imposed this maneuver in 2% of the cases. Intraprocedural visibility was better when the UAS was used (mean score 4.5 vs. 3.9). Perioperative complications rate and stone free rate were similar among the two groups (13% vs. 9% and 96% vs. 97% respectively). Septic complications were significantly reduced in the study group (30% vs. 55.5%). No late ureteral stenosis was encountered.
Conclusions: Routine but careful use of ureteral access sheath does not increase the complication' rates specific for the flexible ureteroscopic approach. It offers some clear advantages regarding access, visibility and seems to be associated with less septic complications, probably by maintaining a low pressure.

MP-09.13
Preventing Retrograde Stone Displacement during Pneumatic Lithotripsy for Ureteral Calculi Using Lidocaine Jelly
Darabi-Mahboub M, Pedram-Rad B, Ghoreifi A, Ghods A
Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: To assess the efficacy of lubricating jelly instillation proximal to the ureteral calculi during lithotripsy on the prevention of retrograde stone displacement and the stone-free rate.
Materials and Methods: A total of 110 patients with ureteral calculi of less than 2 cm were randomized into 2 groups: jelly instillation (n=55) and controls (n=55). Ureteroscopy was performed using a 9.8F semirigid ureteroscope. A 5F ureteral stent was advanced beyond the stone. Lidocaine jelly (2 mL) was instilled, and lithotripsy was done with a Swiss Lithoclast. A 5F ureteral catheter was left in place for 24

hours, and patients were followed up at 24 hours with radiography of the kidneys, ureters, and bladder and at 2 weeks with sonography.
Results: Both groups were comparable in terms of mean age and stone size. Stone or stone fragment migration occurred in 18.8% of the treatment group and 44.2 of the controls, statistically significantly different (P =0.009). The stone-free rate was 81.3 and 55.8 in the treatment and control groups, respectively. The rates did not improve after 2 weeks, and the difference was not statistically significant between the two groups (P =0.384). The mean operative time was also comparable between the two groups.
Conclusion: Lidocaine jelly instillation proximal to the ureteral calculi during lithotripsy is an effective method to prevent retrograde stone displacement.

MP-09.14
Predicting Risk of Complications following Ureteroscopy and Laser Stone Fragmentation
Housami F[1], Malki M[2], Marri R[1], McIlhenny C[1]
[1]*Forth Valley Royal Hospital, Larbert, UK;* [2]*University Hospitals of Leicester, UK*

Introduction and Objectives: Semi-rigid ureteroscopy and flexible ureterorenoscopy have a high stone clearance rate and low morbidity and mortality rate. The aim of this study is to identify patient, stone and procedure factors predictive of complications or readmission.
Materials and Methods: Data was collected prospectively for all emergency and elective therapeutic semi-rigid ureteroscopy or flexible ureterorenoscopy for stone disease between November 2010 and October 2013. Patient, stone and procedure parameters were recorded at the time of ureteroscopy. Complications and readmission were identified and recorded at outpatient review in 3 months.
Results: During the study period, 305 patients underwent therapeutic ureteroscopy. Thirty five patients (12%) had recorded complications or unplanned readmission within 3 months. These included urosepsis in 6.9%, pain in 3.0% and urinary retention in 1.3%. In terms of patient related parameters, there were no significant differences in patients' age, gender, BMI or co-morbidities. Patients with positive pre-operative urine culture were more likely to develop post-operative sepsis (p=0.001) despite appropriate antibiotic cover. As for stone related parameters, there were no significant differences in stone location, number of stones, total stone volume or mean stone density. Finally procedure related parameters showed no differences in ureteric access, ureteroscope type, operative time or presence of stent. Readmission was more likely if there were residual fragments (p=0.001) or if stone was fragmented to dust with no retrieval (p=0.009) usually due to difficult access.
Conclusion: Although risk is relatively low, urosepsis remains a significant complication post ureteroscopy. Pre-operative urine culture is essential to guide choice of antibiotic.

MP-09.15
Intracorporeal Lithotripsy in Renal Stones Treatment: Dust or Extractable Fragments?
Multescu R, Georgescu D, Geavlete B, Satalan R, Geavlete P
Dept. of Urology, "Saint John" Emergency Clinical Hospital, Bucharest, Romania

Introduction and Objectives: Pyelocaliceal calculi flexible ureteroscopic approach raises problems related with operative time, associated morbidity and costs, especially by potential endoscope damage.
Materials and Methods: Five series, each of 20 patients with single pyelocaliceal lithiasis were analyzed: Group I with calculi < 1 cm fragmented to dust, Group II with calculi < 1 cm with lithotripsy in fragments, Group III with calculi of 1-2 cm fragmented to dust, Group IV with calculi of 1-2 cm with lithotripsy in fragments, Group V with calculi of 1-2 cm fragmented to dust until they reached 1 cm, and lithotripsy in fragments afterwards. In all cases a flexible Story Flex-Xc ureteroscope and Ho:YAG lithotripsy were used.
Results: Ureteral access sheath was used in 70% of the cases. Mean stone volume in groups I and II, and groups II, IV and V were similar. Success rate in all groups was statistically similar. Mean operating time was 39 min in Group I, 21 min in Group II, 112 min in Group III, 72 min in Group IV and 51 min in Group V. Minor complications occurred in 7 cases, while a single major complication occurred in Group IV.
Conclusions: The optimal lithotripsy method of calculi < 1 cm seems to be in extractable fragments. Larger calculi should be fragmented to dust until they reach 1 cm and then the lithotripsy should be continued into extractable fragments.

Moderated Poster Session 10
Kidney & Ureteral Cancer: Treatment
Monday, October 13
1435-1600

MP-10.01

Outcomes after Percutaneous Renal Ablation for Small Renal Masses

Hussein A[1,2], Jalloh M[3], Laberge J[4], Glass A[1], Cowan J[1], Greene K[1], Meng M[1], Carroll P[1]
[1]Dept. of Urology, University of California, San Francisco, USA; [2]Cairo University, Cairo, Egypt; [3]Dakar, Senegal; [4]Dept. of Interventional Radiology, University of California, San Francisco, USA

Introduction and Objectives: Partial nephrectomy (PN) currently is considered the gold standard for treatment of T1 renal tumors. However, complications associated with PN and the high incidence of benign lesions after surgery have led to more interest in minimally invasive strategies, such as radiofrequency ablation (RFA) and cryoablation (CA). We assessed disease characteristics and oncological outcomes after RFA and CA therapies for small renal masses.

Materials and Methods: We retrospectively studied of 127 patients who underwent 129 percutaneous ablation procedures (86 CA and 43 RFA) for presumed renal cancers at UCSF in the period between 2005 and 2012. Sociodemographics, tumor characteristics, histology, and oncological outcomes were compared by between RFA and CA. Follow-up was monitored with serial imaging and recurrence was defined as enhancement on imaging or receipt of salvage therapy. Outcomes were evaluated with life tables and Cox proportional hazards regression adjusted for age, BMI, type of ablation procedure, maximum tumor size, and number of comorbidities.

Results: At first ablation, median age was 69 years for 72 (57%) men and 55 (43%) women. Seventeen percent had history of RCC and 19% underwent pre-ablation biopsy. Intra-ablation histology was benign for 29% of patients. Patient and tumor characteristics did not differ by type of ablation. Complications were reported in 7 procedures (5.4%): burnt skin, lower extremity DVT, intraoperative afib, abortion of a procedure and 3 perinephric hematomas. One-third had high serum creatinine after ablation. During a median follow-up of 13 months (IQR 3-33), 13 patients underwent salvage therapies. Salvage-free survival rate was 89% at 12 months and 82% at 36 months. Salvage treatment rates and types did not differ between CA and RFA (p=0.71). Larger maximum tumor dimension was associated with a higher risk of undergoing salvage treatment (p<0.01). Prior history of RCC demonstrated a non-significant trend toward higher risk of salvage.

Conclusion: CA and RFA showed comparable outcomes in a small retrospective study. Maximum tumor size was associated with risk of salvage treatment. Ablation procedures remain viable options for patients with multiple or recurrent small tumors as well as for patients with tumors thought to be less fit for conventional treatment.

MP-10.02

Nephron Sparing Fast Track Surgery in Kidney Cancer

Voylenko O, **Stakhovskyi O**, Vitruk I, Kotov V, Stakhovsky E
National Cancer Institute, Kiev, Ukraine

Introduction and Objectives: Nephron sparing surgery (NSS) is widely used in renal cancer and is an alternative to nephrectomy in T1 stage tumors. Surgery with fast recovery, called "fast track surgery" (FTS) approach is widely accepted approach in surgery nowadays, although in NSS there is not mush research done. Our objective was to analyze FTS approach in nephron sparing surgery for renal cell carcinoma (RCC).

Materials and Methods: Randomized control trial was initiated to compare the "Fast track surgery" approach versus standard care in patients who had partial nephrectomy for RCC from 01/01/2013. Inclusion criteria's were: single side kidney tumor (T1N0M0) that is not involving kidney pelvic system; absence of significant comorbidities. Seventy patients were randomized in the study: on 35 in the study and control groups. Both groups were equal in mean patients age, male/female distribution, mean size of the tumor, overall GFR and ECOG status. All the surgeries were done through transabdominal approach without central ischemia.

Results: There were no intraoperative complications recorded. Blood loss was 264±126 ml in study and 302±147 in control group (t-test; p > 0.3). Postoperative complications were recorded in 4 patients: 2 (5.7%) in study group and 2 (5.7%) in control group. Complications were not higher than grade 3 by Clavien classification. For pain evaluation 10 points scale was used and pain levels in the study group were insignificantly lower to control: 2.9±1.1 points versus 3.5±1.6 points (t-test; p = 0.21). Postoperative hospital stay was significantly shorter for study group 3.8±1.7 days versus 6.9±1.8 days (t-test; p < 0.001). No early complications that needed admittance to the hospital were recorder in early postoperative period.

Conclusions: Our preliminary data showed promising results of FTS approach comparing to standard care in patients who underwent PR for RCC. This multimodal approach gives significant advantage in postoperative hospital stay with the same levels of postoperative complications and pain intensity.

MP-10.03

Does Anatomical Tumor Complexity Affect Renal Function after Clampless Partial Nephrectomy? A Functional Analysis Using Renal Scintigraphy

Yokoyama M[1], Fujii Y[1], Inoue M[1], Takeshita H[1], Yoshida S[1], Ishioka J[1], Numao N[1], Matsuoka Y[1], Koga F[2], Saito K[1], Masuda H[3], Kihara K[1]
[1]Dept. of Urology, Tokyo Medical and Dental University Graduate School, Tokyo, Japan; [2]Dept. of Urology, Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital, Tokyo, Japan; [3]Dept. of Urology, Cancer Institute Hospital, Tokyo, Japan

Introduction and Objectives: Renal function as assessed by glomerular filtration rate (GFR) would decrease to a greater extent after partial nephrectomy (PN) using hilar clamping in patients with tumors of higher anatomical complexity which is reportedly associated with longer ischemic time. To preserve renal function as much as possible even in complicated cases, we perform clampless PN for small renal mass using a gasless single-port laparoendoscopic surgical technique (Kihara K. Eur Urol Suppl. 2010). Here, we investigated associations of anatomical tumor complexity with renal function after clampless PN.

Materials and Methods: Between 2000 and 2011, 119 Japanese patients received gasless single-port PN and were followed up 1 year or longer. Excluding 5 patients in whom hilar clamping was used, 114 (84 male and 30 female) undergoing clampless PN were enrolled in this study. Anatomical tumor complexity was assessed using preoperative aspects and dimensions used for an anatomical (PADUA) classification, and estimated GFR (eGFR) was calculated by the Modification of Diet in Renal Disease equation. Multivariate linear regression analyses were carried out to determine clinical parameters that influence %change of eGFR at 1 year after PN (%ΔeGFR). Moreover, preoperative and 1 year postoperative split renal function was assessed by ($^{99}Tc^{m}$)-diethylenetriamine-penta-acetic acid renal scintigraphy in 45 patients. Correlations of clinical parameters with %change of split renal function in an operated renal unit after PN (%ΔSRF) were assessed by Spearman's rank correlation test.

Results: Median age, body mass index, preoperative eGFR, operation time, blood loss, tumor size and PADUA score were 58 year, 23.3 kg/m^2, 98.8 ml/min/1.73 m^2, 206 minute and 213 ml, 2.3 cm, and 7, respectively. Median %ΔeGFR was 12.2%. Among clinical parameters, tumor size was significantly and independently associated with %ΔeGFR; PADUA score and elements other than tumor size were not associated with %ΔeGFR. Median %ΔSRF was

21.7%. Tumor size was significantly correlated with %ΔSRF (p = 0.364, p = 0.014).
Conclusion: Tumor complexity except tumor size is unlikely to affect renal function after clampless PN for small renal mass. Only volume loss of renal parenchyma may influence renal function after clampless PN.

MP-10.04
Times of Transition: Results of Open Partial Nephrectomy Procedures from Four Centres in the UK
Shahzad S[1], Shafik A[2], Hanna L[3], Parkin J[4], Waymont B[3], Ojha H[1], Chen T[2], Makar A[2]
[1]Heart of England Hospitals NHS Trust, Birmingham, UK; [2]Worcestershire Acute Hospitals NHS Trust, Worcestershire, UK; [3]New Cross Hospital, Wolverhampton, UK; [4]Sandwell and West Birmingham NHS Trust, Birmingham, UK

Introduction and Objectives: Latest advancements in technology have revolutionized the management of renal tumours. Nephron sparing surgery (NSS) has become more prevalent with early detection. In recent trials, overall survival and reduction in renal function is scrutinized comparing the NSS with Radical nephrectomy. Although more recently minimally invasive techniques have become more available, in many centres Open Partial Nephrectomy (OPN) is still being performed. We report our novel experience with OPN in 4 centres over the last decade.
Materials and Methods: This was a retrospective multicentre study analysing data from 187 patients who underwent OPN for suspected renal cell carcinoma between 2003 and 2013. Data was obtained using appropriate OPCS codes. Indication, ischaemia time, change in the renal function, hospital stay and complications were recorded. Clavien-Dindo classification was used to record the complications.
Results: Median age was 61 years, predominantly males (59.3%). Median follow-up was 6 years. Multifocal tumours in 2.1%. All procedures were unilateral. Cold ischaemia was used in 81.2% (n=152) and warm ischemia in 18.7% (n=35). Median ischaemia time was 19 minutes. Median blood loss was 150mls and Median length of hospital stay was 4 days. Positive margins were reported in 4.2% (n=8). Mean 3-month estimated GFR declined by 13.2%.
Conclusions: Nephron sparing surgery is indeed evolving. There is increased drive towards minimally invasive techniques using laparoscopic and robotic technology with segmental vascular dissection and zero ischaemia. Whilst minimally invasive techniques are constantly perfected and expertise is being developed, OPN remains an important and feasible surgical option in treatment of renal tumours.

MP-10.05
Transitioning from Open to Robot Assisted Partial Nephrectomy: Do Benefits Outweigh the Challenges?
Macarthur R, **Nair R**, Pai A, Tsavalas P, Le Roux P, Patel H, Anderson C
St. George's Hospital, London, UK

Introduction and Objectives: The transition from open (OPN) to robotic assisted partial nephrectomy (RA-PN) is challenging and may deter those with limited laparoscopic experience. This study analyses whether patient safety can be assured, equivalent oncological outcomes can be achieved and quantifies the learning curve required.
Materials and Methods: A prospective single centre study of 292 patients who underwent partial nephrectomy was performed between January 2002 and January 2014. One hundred RA-PN patients (mean age: 58, range 32-85) were matched against 192 OPN patients (mean age: 58, range 19-82). Peri-operative and oncological outcomes were compared.
Results: Median follow-up for RA-PN and OPN was 18 months (1-62) and 77 months (1-138) respectively. Twenty consecutive robotic cases were required to achieve a warm ischaemic time of less than 20 minutes and 10 cases to achieve a console time of less than 120 minutes. RA-PN has favourable outcomes with respect to median length of stay (RA-PN: 4 days (2-11), OPN: 6days (3-35); p<0.0001), positive surgical margins (RA-PN: 6%, OPN: 13%; p=0.09)) and estimated blood loss (RA-PN: 308mls OPN: 998mls; p<0.0001). Clavien-Dindo scores (I + II) were lower in the RA-PN group (4%) versus the OPN group (11%; p=0.05). None of the robotic cases were converted to an open procedure. There was no difference in major complication rate or pre-and post-operative estimated glomerular-filtration rates. Five-year recurrence free survival was 100% in the RA-PN group and 94.2% in OPN group.
Conclusion: The robotic approach to partial nephrectomy compares favourably with open surgery. It is therefore feasible to transition from OPN to RA-PN whilst maintaining safe peri- and post-operative outcomes, and comparable oncological results during and beyond the initial learning curve.

MP-10.06
100 Cases of Robotic Assisted Partial Nephrectomy: Which Surgical Approach
Drinnan N, Hindley R, Emara A, Ni Raghallaigh H, Barber N
Frimley Park Hospital, Frimley, UK

Introduction and Objectives: The importance of the role of robotic assisted partial nephrectomy (RAPN) is now becoming increasingly accepted. Despite many specialist upper tract laparoscopic surgeons employing the extraperitoneal approach and some described benefits in terms of reduced surgical morbidity in comparative series, thanks to perceived technical difficulties, this approach is rarely described and practiced for RAPN. We report our first 100 cases of RAPN, selecting surgical approach on tumour anatomy alone.
Materials and Methods: We prospectively collected data regarding the first 100 partial nephrectomies carried out in our centre over a 3-year period. Data included lesion location (as per Nephrometry Score), surgical technique and approach, operative and post-operative complications.
Results: Average tumour size was 30.3 mm. Eighty seven percent of the cases were carried out via a retroperitoneal approach despite a wide variety of tumour locations, only those most anterior and hilar necessitating a transperitoneal procedure. Mean operating time was 144 mins with an average blood loss of 77 ml and warm ischaemia time of 23 mins. Transfusion was infrequently required (4%); there were three conversions to a radical procedure and 3 instances of delayed haemorrhage requiring radiological embolisation. The median hospital stay was 1 night.
Conclusions: Our data suggests that in a high volume tertiary centre, RAPN is a safe, reproducible and truly minimally invasive surgical option for appropriate tumours whatever their anatomy and with the necessary experience can be predominantly carried out using a retroperitoneal approach which may benefit the patient even further.

MP-10.07
Repeat Robotic Partial Nephrectomy for Complex Renal Tumors: Characteristics and Renal Functional Outcomes
Walton-Diaz A[1], Siddiqui M[1], Hankins R[2], Pinto P[1], Bratslavsky G[3], Linehan M[1], **Metwalli A**[1]
[1]Urologic Oncology Branch, National Cancer Institute, NIH, Bethesda, USA; [2]Dept. of Urology, Georgetown University Hospital, Washington,USA; [3]Dept. of Urology, SUNY Upstate Medical School, Syracuse, USA

Introduction and Objectives: Multifocal and hereditary kidney cancer conditions often require multiple ipsilateral partial nephrectomies. Repeat and salvage open renal surgeries have been shown to have higher blood loss and complication rate compared to first time renal surgery. Consequently, many surgeons avoid minimally invasive techniques in the setting of repeat renal surgery. We present the characteristics and short-term renal functional outcomes of patients who underwent a repeat robotic partial nephrectomy (RRPNx) at the National Institutes of Health.
Materials and Methods: A prospectively maintained database was reviewed to identify

patients who underwent complex multifocal partial nephrectomies between January 2007 and December 2013. Patients who had undergone ≥ 2 ipsilateral renal or adrenal surgery, the second one being an RRPNx were selected. Clinical characteristics, surgical parameters and renal functional outcomes both preoperative (preop) and at 3-month follow-up were collected and compared to patients undergoing initial robotic partial nephrectomy (iRPNx).

Results: A total of 125 patients underwent robotic partial nephrectomy between January 2007 and December 2013. Of these, 20.8% (26/125) underwent a repeat robotic partial nephrectomy (22 were 2nd time cases and 4 were 3rd time cases). Sixteen patients underwent previous open ipsilateral surgery, 8 had previous minimally invasive ipsilateral procedures, 4 underwent prior ipsilateral thermal ablation and 4 had combined ipsilateral therapies. Four cases were converted from robotic to open and, of those, 1 was also converted from partial to radical nephrectomy. Mean age for this group was 48.8±12.8 (28-75) years. Mean BMI was 30.2±5.2 (22.9-40.4). Mean number of tumors resected was 4.3± 5.8 (1-29), mean surgery time was 366.6±122.1 (180-652) minutes, mean EBL was 1426±1769 cc (200-8500). Mean preop creatinine in the RRPNx cohort was 1.02±0.3 mg/dl (0.58-1.63) compared to 0.95±0.3 for those undergoing iRPNx. At 3-month follow-up, creatinine was 1.1±0.3 mg/dl (0.33-2.2) in the RRPNx group compared to 1.0±0.3 mg/dl (0.47-2.36) for the iRPNx population. Mean change in creatinine from preop level to three-month follow-up was 0.09 mg/dl for RRPNx vs. 0.05 mg/dl for iRPNx (p=0.3).

Conclusions: RRPNx is safe and feasible in highly selected patients. At three-month follow-up renal function preservation is excellent with respect to preoperative levels and to iRPNx patients.

MP-10.08

Robotic Multiplex Partial Nephrectomy: The National Cancer Institute Experience with Robotic Partial Nephrectomy for 3 or More Tumors in a Single Kidney

Hankins R[1], Walton-Diaz A[2], Truong H[2], Bratslavsky G[3], Pinto P[2], Linehan M[2], **Metwalli A**[2]

MP-10.09, Table 1. Clinicodemographics and Perioperative Outcomes

	Robotic Nephroureterectomy	Laparoscopic Nephroureterectomy	p-value
Cohort size	43	104	
Follow-up (range, months)†	9.7 [9.1—14.2]	31.3 [13.9—49.4]	
Age (range, years)†	69.9 [65.9—75.8]	72.6 [65.8—81.8]	0.12
TUMOR CHARACTERISTICS			
Affected Collecting System			
Right	23 (54%)	61 (59%)	0.59
Left	20 (47%)	43 (41%)	
Location of Tumor††			
Renal Pelvis	30 (70%)	64 (62%)	0.74
Ureter	22 (51%)	55 (53%)	
Renal pelvis and ureter	9 (21%)	15 (35%)	
Neo-Adjuvant Chemotherapy (NAC)(yes)	16 (37%)	36 (35%)	0.85
Overall Pathologic (pT) Stage			
pT0 (Downstaged, endoscopy)	2 (5%)	2 (5%)	0.46
pT0 (Downstaged, NAC)	3 (7%)	5 (5%)	
pTis	1 (2%)	3 (3%)	
pTa	12 (28%)	33 (32%)	
pT1	15 (35%)	23 (22%)	
pT2	3 (7%)	11 (11%)	
pT3/pT4	7 (16%)	27 (26%)	
Positive Pathologic Lymph Nodes (cN+)	1 (2%)	14 (13%)	0.07
PERIOPERATIVE OUTCOMES			
Operative Time (hours)†	4.8 [3.6—5.8]	3.8 [3.3—4.7]	**0.007**
EBL (mL)†	200 [50—325]	200 [100—400]	0.16
Post-Operative Hospital Stay (days)†	4.0 [3.0—6.3]	2.0 [2.0—4.0]	**0.0001**
Positive Surgical Margins (yes)	0 (0%)	5 (5%)	0.32
Overall Complication Rate (Clavien II—V)	8 (19%)	19 (19%)	-
(Clavien III—V)	1 (2%)	5 (5%)	

†Continuous variables are expressed as median values with interquartile ranges
††Several patients had tumor in multiple locations.

[1]Dept. of Urology, Georgetown University Hospital, Washington, USA; [2]Urologic Oncology Branch, National Cancer Institute, NIH, Bethesda, USA; [3]Dept. of Urology, SUNY Upstate Medical University, Syracuse, USA

Introduction and Objectives: Robotic partial nephrectomy is a well-established technique in the management of renal cell carcinoma and now used more frequently for complex multifocal disease. The Urologic Oncology Branch at the National Institutes of Health has many patients with hereditary multifocal renal cell carcinoma conditions that require partial nephrectomy. Herein we present renal functional outcomes after robotic surgery on a single kidney with three or more lesions which we have termed a "Robotic Multiplex Partial Nephrectomy" (RMxPNx).
Materials and Methods: A prospectively maintained database from the Urologic Oncology Branch of the National Cancer Institute, NIH was reviewed to evaluate patients who had undergone robotic assisted multifocal partial nephrectomies between January 2007 and November 2013. We chose resection of 3 or more masses in a single kidney as the definition for MxPNx. Data compiled included preoperative (preop) serum creatinine (SCr), postoperative (postop) SCr daily and at 3 month postop follow-up. Additionally renal function was assessed using eGFR (CKD–EPI– Creatinine 2009 formula), and differences were reported as percent change in eGFR from the preop value. Differences in SCr, eGFR and clinical variables were compared.
Results: From 407 partial nephrectomies performed from 2007 to 2013, 54 patients were identified who underwent RMxPNx (mean age 46, range 20 to 84). Mean BMI was 30.5 (range 22.5 to 41.6). Mean number of tumors removed was 8.63 (range 3 to 52). Hilar occlusion was very rarely employed with only 18% of cases demonstrating a mean warm ischemic time of 23.3 minutes (range 15 to 37 minutes). Mean blood loss was 1434mL (range 250 to 8500). The robotic to open conversion rate was 11% with all 6 conversions occurring in the first 20 patients of the series. Mean preoperative creatinine and eGFR were 1.02±0.25mg/dL and 68.9±20.8mL/min respectively. At 3 month follow-up the mean creatinine increase from baseline was 0.038mg/dL (p=0.148) and mean decrease in eGFR was 2.04mL/min (p=0.331).
Conclusions: Robotic multiplex partial nephrectomy is a safe and feasible approach in highly selected patients with multifocal renal masses. This minimally invasive approach for nephron sparing surgery results in excellent preservation of preoperative renal function.

MP-10.09
Single-Docking Technique as a Simplified Approach for Robotic-Assisted Nephroureterectomy, Bladder Cuff Excision, and Retroperitoneal Lymph Node Dissection in Upper-Tract Urothelial Carcinoma

Melquist J[1], Karam J[1], Delacroix S[2], Faria E[3], **Matin S**[1]
[1]MD Anderson Cancer Center, Houston, USA; [2]Louisiana State University, New Orleans, USA; [3]Barretos Cancer Hospital, Barretos, Brasil

Introduction and Objectives: To describe a novel, simple single-docking approach for robotic nephroureterectomy with bladder cuff excision and retroperitoneal lymph node dissection (RPLND) and compare those results to traditional laparoscopic approach.
Materials and Methods: After obtaining Institutional Review Board approval, 104 and 43 consecutive patients who underwent laparoscopic and robotic nephrouretectomy, respectively, for upper-tract urothelial carcinoma (UTUC) from 2003 to 2013 were evaluated.
Results: The single-docking approach was performed in 43 patients. Robotic RPLND was associated with greater lymph node procurement than laparoscopic dissection (median 23.0 versus 13.0 nodes, p<0.0001). The robotic approach had somewhat longer operative times (median 4.8 versus 3.8 hours, p=0.007) and length of stays (median 4.0 versus 2.0 days, p=0.0001). Other comparators (Clavien complication rate, positive surgical margins) favored the robotic approach but were not statistically significant in this study population.
Conclusion: We describe a single-docking robotic technique that is feasible for nephroureterectomy with bladder excision and RPLND with improved lymph node counts in comparison to laparoscopy.

MP-10.10
Validation of a Predictive Nomogram for Urine Leak in Complex Partial Nephrectomy

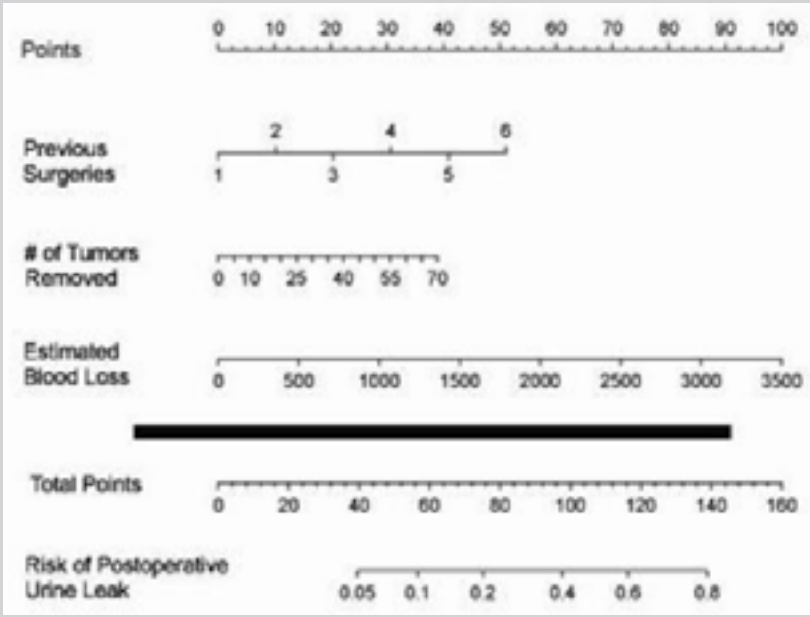
Gorney Brown P[1], Siddiqui M[2], Rothwax J[2], Walton-Diaz A[2], Truong H[2], Bratslavsky G[3], Linehan M[2], **Metwalli A**[2]
[1]Dept. of Urology, George Washington University Hospital, Washington, USA; [2]Urologic Oncology Branch, National Cancer Institute, NIH, Bethesda, USA; [3]Dept. of Urology, SUNY Upstate Medical University, Syracuse, USA

Introduction and Objectives: Urine leak after partial nephrectomy is a complication more frequently encountered with increasing tumor complexity. We developed a nomogram to predict postoperative urine leaks after complex partial nephrectomy and validated it with an independent set of patients.
Materials and Methods: A cohort of 130 multifocal complex partial nephrectomies performed between January 2008 and September 2012 was divided into a training (50 most recent patients) and validation set (80 prior patients). Urine leak was defined as elevation of JP drain creatinine significantly above serum after post op day 2. For the predictive model used in the nomogram, parameters that were

MP-10.09, Table 2. Lymph Node Dissection

		Robotic Nephroureterectomy	Laparoscopic Nephroureterectomy	p-value
Lymphadenectomy performed		30 (70%)	51 (49%)	0.03
Lymph Nodes Removed, Overall	(average)	23.0 [19.0—31.0]	13.0 [7.0—22.5]	<0.0001
	(range)	{9—61}	{5—39}	
Lymph Nodes Removed, Pelvic	(average)	4.0 [2.0—8.8]	5.0 [3.0—8.3]	0.89
	(range)	{2—39}	{3—13}	
Categorical Breakdown (total LNs procured) (# of patients)				
1-5 Nodes		0 (0%)	9 (18%)	0.003
6-10 Nodes		1 (3%)	10 (20%)	
11-20 Nodes		9 (30%)	16 (31%)	
≥ 21 Nodes		20 (67%)	16 (31%)	

MP-10.10, Figure 1.



significantly associated on logistic regression with postop urine leak ($p<0.05$) or with a trend towards significance ($p<0.1$) were included.
Results: The mean age of the training cohort was 49.5 years old with a mean of one prior surgery and 13.1 tumors removed per kidney per operation. The validation cohort had a mean age of 48.6 years, 0.9 previous surgeries, and 6.7 tumors removed per operation. Postoperative urine leak was seen in 28 patients. A nomogram with good predictive characteristics (c–index=0.85) was generated from the training set based on blood loss, number of tumors resected, and number of prior kidney procedures (Figure 1). An optimal probability cutoff for assignment of patients into the "likely to leak" category was determined to be 25% on the nomogram based on the training cohort. The nomogram correctly predicted postop urine leak 88% of cases in the training cohort. This nomogram was then applied on the 80 patient validation cohort and correctly predicted leak in 74% of cases.
Conclusions: Risk of urine leak increases with increased blood loss, number of resected tumors and number of prior renal surgeries. A validated nomogram strongly predicts post–operative urine leak for complex partial nephrectomy with good accuracy in both the training and validation cohorts.

MP-10.11
Functional Results of Nephron-Sparing Approach for Tumors Larger Than 7cm in Patients with RCC
Stakhovskyi O, Vitruk I, Vukalovich P, Voylenko O, Stakhovsky E
National Cancer Institute, Kiev, Ukraine

Intoduction and Objectives: Nepron-sparing surgery (NSS) for kidney tumors more than 7cm in size are indicated for selected patients in high-volume centers. Radical nephrectomy remains the mainstream approach for tumors larger than 7cm. Organ sparing approachand evolution of surgical technique pushes the limits of nephron-sparing surgery (NSS) over the range of 7cm nowadays. Objective of the study was evaluate functional and oncological outcomes of NSS in tumors more than 7cm.
Materials and Methods: Datebase search identified 56 patients with RCC lesions > 7cm that underwent PN from 2008 to 2013. Mean age of the group was 52.9±13.0 years. Major indication for nephron-sparing approach was 55% of calculated functional parenchyma in kidney with tumor. Mean size of the tumor was 93.6±25.6mm. Mean R.E.N.A.L. nephrometry score was 9.5±1.8 with 55.4% of patients with scores 10-12. Mean functional renal parenchyma volume (FRPV) calculated on CT imaging was 68.0±9.7%. Baselinemean GFR was evaluated with nephroscintigraphy and was 86.9±18.8ml/min (40.0±11.7 on tumorside).
Results: All surgeries were done in open fashion through subcostal transabdominal approach. No ischemia during resection was performed in 41 (73.2%) cases. Fifteen (26.8%) patients were operated with central ischemia (mean duration 15.7±5.3). Mean intraoperative blood loss was 483±365cc and in 3 (5.4%) cases blood transfusions were needed. There were 2 (3.6%) intraoperative spleen injuries, followed by splenectomy. Five (8.9%) postoperative complications were recorded: 3 (5.4%) cases of urinary fistula and 2 (3.6%) cases of pyelonephritis. Mean follow-up was 21.8±4.5. Local reccurence was diagnosed in 3 (5.4%) patients at 12, 13 and 24 months postop respectively. Overall kidney function decreased to 77.5±19.0 ml/min (10.8%) at 3 months and to mean 72.7±30.2 ml/min (16.3%) at 12 months ($p=0.06$). There was a 37% decline in function of operated kidney (25.2±8.1ml/min) at 3 months and 36% (25.6±13.4ml/min) at 12 months respectively ($p<0.05$), showing the contralateral kidney effect on overall function.
Conclusions: NSS in tumors more than 7cm allows GFR preservation with preserving overall kidney function and slight decrease (19.7%) in GFR of operated kidney with acceptable intraoperative (8.6%), postoperative (11.4%) complication rate and low recurrence rate (5.7%).

MP-10.12
Oncological and Functional Outcomes of Nephron-Sparing Surgery versus Radical Nephrectomy in cT1b-4 RCC: A Single-Institution Matched Analysis
Veys R[1], Abdollah F[2], Claus P[1], Briganti A[2], Van Poppel H[1], Joniau S[1]
[1]Dept. of Urology, UZ Leuven, Leuven, Belgium; [2]Dept. of Urology, Vita-Salute University, Milan, Italy

Introduction and Objectives: The present retrospective cohort-study investigates the role of NSS in RCC stage cT1b or larger by means of a case-matched analysis of nephron-sparing surgery (NSS) vs. radical nephrectomy (RN). Oncological and functional outcomes are analysed.
Materials and Methods: Our single-institution RCC database was queried to select patients with clinical stage T1b-4 N0 M0. All imaging of patients who underwent RN was reviewed and only patients deemed eligible for NSS were included. After case-matching, 152 patients (76 per group) were included in the final analysis. Cancer specific survival (CSS), clinical progression free survival (CPFS) and overall survival (OS) were calculated using Kaplan-Meier analysis and differences between groups assessed by Log-rank test. Cox proportional hazard regression models were constructed. Proportions were compared by Fisher exact tests and Wilcoxon rank-sum tests used to compare continuous variables.
Results: Groups were case-matched (Table 1). ECOG performance status and median follow-up (RN: 79 months (24.1 – 100.5) vs. NSS: 38.5 months (20.5 – 72.1)) differed significantly between groups. Five-yr CPFS, CSS and OS were 77.2%, 90.5% and 86.4% in the RN-group and 83.6%, 91.1% and 82.0% in the NSS-group ($p=0.55$; $p=0.33$ and $p=0.33$, respectively). In the multivariate Cox model, surgical method was confirmed not to be a significant predictor of CPFS, CSS and OS. We found a significantly higher loss of eGFR in the RNgroup (14.1 ml/min per 1.73m²) vs. the NSSgroup (5.4 ml/min per 1.73m²) ($p<0.03$).

MP-10.12, Table 1.

	Total group (n = 152)		RN group (n = 76)		PN group (n = 76)		
	Median	[IQ range] (%)	Median	[IQ range] (%)	Median	[IQ range] (%)	p-value
Age	53,1	[54,5 - 71,1]	52,1	[52,1 - 71,7]	53,8	[55,8 - 70,6]	0,64
Gender	Female	46 (30,3%)	25	(32,9%)	21	(27,6%)	0,60
	Male	106 (69,7%)	51	(67,1%)	55	(72,4%)	
BMI	26,2	[24,1 - 29,3]	26,2	[24,1 - 28,4]	26,3	[24,1 - 29,75]	0,74
ECOG	0	108 (71,1%)	63	(82,9%)	45	(59,2%)	0,002
	1	39 (25,7%)	13	(17,1%)	26	(34,2%)	
	2	5 (3,3%)	0	(0%)	5	(6,6%)	
CCI	0	69 (45,4%)	43	(56,6%)	26	(34,2%)	0,05
	1	17 (11,2%)	7	(9,2%)	10	(13,2%)	
	2	34 (22,4%)	14	(18,4%)	20	(26,3%)	
	3	32 (21,1%)	12	(15,8%)	20	(26,3%)	
eGFR pre-op	66,1	[56,8 - 82,5]	64,58	[56,79 - 74,89]	69,43	[26,6 - 87,6]	0,21
cT	cT1b	113 (74,3%)	52	(68,4%)	61	(80,3%)	0,40
	cT2	27 (17,8%)	16	(21,1%)	11	(14,5%)	
	cT3a	9 (5,9%)	6	(7,9%)	3	(3,9%)	
	cT4	3 (2,0%)	2	(2,6%)	1	(1,3%)	

Conclusion: In patients with cT1b-4 RCC, oncological outcomes did not differ significantly between RN and NSS. However, renal function preservation is better in patients undergoing NSS. Our data suggest that NSS can be considered an oncologically safe procedure in larger RCC. The decision to perform NSS in RCC cT1b or larger should be based on tumor localization and technical feasibility rather than on tumor stage.

MP-10.13

Functional Results of Radical Nephrectomy in Patients with Clinically Localized Renal Cell Carcinoma and Normal Contralateral Kidney Function

Volkova M, Skvortcov I, Chernyaev V, Klimov A

Russian Cancer Research Center, Moscow, Russia

Introduction and Objectives: To assess functional results of radical nephrectomy in patients with clinically localized renal cell carcinoma (RCC) and normal contralateral kidney function.

Materials and Methods: We analyzed medical data of 426 consecutive patients (1991-2011) with clinically localized RCC and normal contralateral kidney function who underwent radical nephrectomy (open – 211 (49.5%), laparoscopic – 215 (50.5%)). Median age was 57 years. A male to female ratio was 1.1:1. Median tumor diameter was 5.0±2.2 cm. No regional and distant metastases were diagnosed before surgery in any of the cases. Median initial glomerular filtration rate (GFR) was 83.8 ml/min/1.73 m^2 (<60 ml/min/1.73 m^2 - 82 (19.2%)). Concomitant diseases adversely affecting renal function were in 139 (32.6%), obesity – in 168 (39.4%) cases. Median follow-up was 50.0±12.3 months.

Results: Acute kidney injury (AKI) was registered in 110 (25.8%) cases (acute dialysis was required in 9 (2.1%) patients). Independent risk factors of AKI included diseases adversely affecting renal function (OR=0.226 (95%CI:0.073-0.699); p<0.0001) and initial GFR<45 ml/min/1.73 m^2 (OR=0.066 (95%CI:0.037-0.117); p<0.010). CKD stage ≥3 was observed in 174 (40.8%) cases. Continuing decline of GFR≥4 ml/min/1.73 m^2/year in patients with CKD stage ≥3 occurred in 12 (2.8%) cases. Independent risk factors of CKD stage ≥3 included age ≥60 years (OR=0.261; 95%CI:0.149-0.459; p<0.0001), presence of diseases adversely affecting kidney function (OR=0.288, 95%CI:0.154-0.539, p<0.0001), tumor size <4 cm (OR=0.411, 95%CI:0.330-0.492, p<0.0001), and AKI following nephrectomy (OR=0.119, 95%CI:0.057-0.248, p<0.0001).

Conclusion: Functional results of radical nephrectomy in patients with clinically localized RCC and normal contralateral kidney function are not satisfactory and require careful selection of candidates for non organ sparing surgery.

MP-10.14

Renal Cell Carcinoma with Inferior Vena Caval Tumour Thrombus: Is Surgery Better Than Chemotherapy? An Update

Goonewardene S[1], Fabricius M[2], Highley M[2], McInerney P[2]

[1]Hometon University Hospital, London, UK; [2]Plymouth Hospitals, Plymouth, UK

Introduction and Objectives: Renal cell carcinoma extends into the inferior vena cava in 10% of patients. Caval thrombectomy is rarely performed: peri-operative mortality is 10%, with complication rates of 30%. There are no papers examining long-term survival. We present a 13-year series and review survival outcomes compared to chemotherapy alone.

Materials and Methods: We analysed 23 patients undergoing nephrectomy and caval thrombectomy under a single surgeon and 11 patients receiving sunitinib alone. Data were collated on extent of tumour thrombus, cardiac bypass (CPB) and hypothermic circulatory arrest, pathological stage and tumour grade, complications and survival.

Results: A total of 23 patients underwent nephrectomy and excision of caval thrombus. Forty seven percent required bypass. At the end of 21 months, 57.1% with Fuhrman grade 2 tumours were alive, 83.3% with Fuhrman grade 3, 66% Fuhrman grade 4. Complications included: AF 4%, renal failure 14.2%, PE 4%. No complications were experienced in 71%. There was one perioperative death within 30 days of surgery (4.7%). The mean survival for patients undergoing chemotherapy was 5 months. Seventy two percent had metastatic disease at the time of treatment. Twenty eight percent had no metastatic disease at initiation of chemotherapy, mean survival was 5.5 months. The mean survival with surgery is at least 32 months, 66% are still alive.

Conclusions: We conclude an aggressive surgical approach improves patient outcomes and prolongs survival. We demonstrate this surgery is not associated with as high a complication rate. We compare our results with other published data.

MP-10.15

GM-CSF May Predict the Response of Metastatic Renal Cell Carcinoma to Tyrosine Kinase Inhibitor Therapy

Yamada D[1], Hirokazu M[2], Azuma T[2], Kume H[2], Homma Y[2], Kakimi K[2]

[1]Chibanishi General Hospital, Chiba, Japan; [2]The University of Tokyo Hospital, Tokyo, Japan

Introduction and Objectives: To identify predictive markers for the response of metastatic renal cell carcinoma (RCC) to tyrosine kinase inhibitors (TKIs), we conducted a prospective study.

Materials and Methods: Patients with histologically proven RCC with at least one measurable metastatic lesion were enrolled in this study. Blood samples were collected before treatment and the plasma levels of 27 cytokines were measured. Tumor response was assessed eight to 12 weeks after the start of TKI treatment.

Results: Thirteen patients (11 males / two females) with a median age of 63 years received sunitinib (eight cases), sorafenib (one case), or axtinib (four cases). Partial response (PR) was achieved in five patients (38%), stable disease (SD) in four (30%), and progressive disease (PD) in four (30%). Plasma granulocyte macrophage colony-stimulating factor (GM-CSF)

in PR cases was significantly higher than that in SD or PD cases (p=0.012).
Conclusion: GM-CSF may be a predictive biomarker of the response of RCC to TKI treatment, suggesting that TKIs could exert clinical effects not only through suppression of VEGF but also through the immune system.

MP-10.16
The Treatment of Patients with Metastatic Renal Cell Carcinoma with Angiogenesis Inhibitors: Will They Continue with the Same Treatment after One Year?
Graça Silva P[1], Figueiredo L[1,2], Alturas Silva J[1,2], Santos Silva A[1,2], Quintas J[1,2], Cruz F[1,2], **Martins da Silva C**[1,2]
[1]Faculdade de Medicina da Universidade do Porto, Porto, Portugal; [2]Dept. of Urology, Hospital de São João, Porto, Portugal

Introduction and Objectives: Anti-angiogenic therapy is currently the standard treatment for patients with metastatic renal cell carcinoma (mRCC). According to the published clinical studies, approximately 20-25% of the patients usually abandon the treatment due to side-effects. With this study, we intended to describe the one-year incidence of treatment dropout and to analyze the determinants of interruption of patients treated in the real clinical practice.
Materials and Methods: We evaluated 59 patients with mRCC that had been receiving treatment with angiogenesis inhibitors (Sunitinib, Pazopanib or Temsirolimus) in the Department of Urology of a University Hospital, between January 2008 and November 2013. Data regarding socio-demographic characteristics, performance status (Karnofsky), comorbidities (ACE-27), tumor histology, TNM stage, treatment regimen, side-effects and treatment dropout were collected from patients' clinical records. We computed Kaplan-Meier curves and estimated age and gender-adjusted hazard ratios with a cox regression analysis in order to identify the dropout determinants.
Results: Median patient age was 66 years (58-74) and median patient Karnofsky performance status at diagnosis was 90 (80-90). The one-year incidence of treatment dropout was 37.3% (n=22) and the main causes for this interruption were: drug toxicity [n=7 (11.9%)], disease progression [n=13 (22.0%)], patient refusal [n=1 (1.7%)] and complete response [n=1 (1.7%)]. Although 86.5% (n=51) reported side effects, only 11.9% abandoned the treatment for that reason. Patients with Karnofsky performance status lower than 80 [HR=3.9 (1.5–10.0)], ECOG higher than 1 [HR= 2.9 (1.0–8.4)] and grades 2 or 3 of ACE-27 co-morbidity scale [HR= 3.0 (1.2–7.8)] revealed a statistically significant higher risk of treatment interruption. Paradoxically, those that reported more than 1 side effect demonstrated a lower risk of dropout [HR=0.3 (0.1–0.8)] and in this group the proportion of cases with disease progression was lower.
Conclusion: Approximately 62% of the patients with mRCC remained in treatment with angiogenesis inhibitors after one year, despite the high rate of side-effects. The main reason for the interruption was RCC progression and was closely related to the patients' previous health-status.

MP-10.17
Is There a Need for Cytoreductive Nephrectomy in Metastatic Renal Cell Carcinoma?
Volkova M, Klimov A, Matveev V
Russian Cancer Research Center, Moscow, Russia

Introduction and Objectives: To assess the role of cytoreductive nephrectomy (CN) in metastatic renal cell carcinoma (mRCC).
Materials and Methods: Medical records of 1333 patients with mRCC were analyzed. Patients' median age was 54 (16-89) years. A male-to-female ratio was 1:2.4. Tumor venous thrombosis was diagnosed in 212 (15.9%), N+ – in 678 (50.9%), multiple metastatic sites – in 431 (32.3%) cases. CN was performed in 883 (66.2%) patients. Systemic therapy was administered in 706 (52.9%) cases (antiangiogenic targeted therapy – 79 (6.0%), cytokines – 627 (47.0%)). The remaining 627 (47.0%) patients received supportive care only. Patients' characteristics were imbalanced between CN group and conservative management group in terms of rate of N+ and number of metastatic sites. Median follow-up was 18 months.
Results: CN was associated with significant increase of median overall survival (10.4 vs. 24.7 months (HR 2.026 (95%CI:1.733-2.369), p<0.0001)). The survival advantage following surgery was significant in all subgroups of patients receiving antiangiogenic, cytokine and symptomatic therapy. Independent risk factors of overall survival were pN+ (HR 0.648 (95%CI:0.510-0.823), P<0.0001), tumor venous thrombosis (HR 1.47 (95%CI:1.012-2.012), p=0.043) and incomplete removal of the primary tumor (HR 2.053 (95%CI:1.534-2.747), p<0.001). Survival advantage following surgery was significant in patients with 0-1 risk factors (p<0.0001). Cytoreductive nephrectomy did not improve prognosis in patients with ≥2 risk factors (p=0.786).
Conclusion: CN in carefully selected mRCC patients with 0-1 risk factors significantly increases median survival and should be considered regardless of the type of planned systemic therapy.

MP-10.18
Bladder Tumour Recurrences after Curative Surgery for Upper Tract Urothelial Carcinoma in Patients without Prior Bladder Urothelial Carcinoma: A Look at Clinicopathological Predictive Factors
Yeow S, Liu Z, Chong K
Tan Tock Seng Hospital, Singapore, Singapore

Introduction and Objectives: Current literature has reported concomitant carcinoma-in-situ (CIS) and higher tumour grade to have a higher bladder tumour recurrence post-curative nephroureterectomy. We aimed to assess whether histologic multifocality and smoking status, as well as other clinicopathological variables affected the bladder tumour recurrence rate.
Materials and Methods: All patients who underwent curative nephroureterectomy for non-metastatic upper urinary tract cancer (UTUC) at our centre over a period of 5 years were retrospectively identified. Patients with prior bladder tumours were excluded. Univariate log rank tests and multivariate Cox regression

MP-10.18, Table 1. Clinicopathological variables and their effects on bladder tumour recurrences

	Univariate		Multivariate	
	HR (95% CI)	P value	HR (95% CI)	P value
Histologic multifocality - No vs. Yes	0.28 (0.09 - 0.94)	0.04	0.30 (0.08 – 1.11)	0.071
Tumour grade - High grade vs. low grade	1.50 (0.40 – 5.66)	0.55	1.2 (0.25 – 6.18)	0.786
CIS - Yes vs. No	1.79 (0.47 – 6.81)	0.393	0.95 (0.18 – 4.60)	0.92
Smoking status - Ex-smoker and current smoker vs. non-smoker	1.32 (0.40 – 4.36)	0.645	1.35 (0.35 – 5.15)	0.665

models were used to examine the significance of the variables on the incidence of bladder tumour recurrence.
Results: Histologic multifocality was found to be a predictor for bladder tumour recurrence (p=0.04, HR 0.28, 95% CI 0.09-0.94). However on multivariate analyses, histologic multifocality did not reach statistical significance. Interestingly, CIS, tumour grade and smoking status were not found to be significant predictors for bladder tumour recurrences on both univariate and multivariate analyses. The median time to tumour recurrence was 13 months; with most recurrences within the first 12 months postoperatively (72.7%), and majority within the first 24 months (90.9%).
Conclusion: Histologic multifocality was predictive for bladder tumour recurrence post-nephroureterectomy, with majority of tumour recurrences within the first 24 months. Close bladder surveillance with flexible cystoscopy is needed for timely detection and treatment of such recurrences.

MP-10.19
Adjuvant Chemotherapy for Lymph Node-Positive Upper Tract Urothelial Carcinoma following Radical Nephroureterectomy: A Retrospective International Multicenter Study

Klatte T[1], Lucca I[1,2], Kassouf W[3], Kapoor A[4], Fairey A[5], Rendon R[6], Izawa J[7], Black P[8], Fajkovic H[1], Seitz C[1], Remzi M[9], Nyirady P[10], Rouprêt M[11], Margulis V[12], Lotan Y[12], De Martino M[1], Hofbauer S[1], Karakiewicz P[13], Briganti A[14], Novara G[15], Shariat S[1,12,16]
[1]Dept. of Urology, Comprehensive Cancer Center, Medical University of Vienna, Vienna General Hospital, Vienna, Austria; [2]Dept. of Urology, Centre hospitalier universitaire vaudois, Lausanne, Switzerland; [3]Dept. of Urology, McGill University, Montreal, Canada; [4]Dept. of Urology, McMaster University, Hamilton, Canada; [5]Dept. of Surgery (Urology), University of Alberta, Edmonton, Canada; [6]Dept. Urology, Dalhousie University, Halifax, Canada; [7]Dept. of Surgery (Urology), University of Western Ontario, London, Canada; [8]Dept. of Urological Sciences, University of British Columbia, Vancouver, Canada; , [9]Dept. of Urology, Landeskrankenhaus Weinviertel-Korneuburg, Korneuburg, Austria; [10]Dept. of Urology, Semmelweis University, Budapest, Hungary; [11]Dept. of Urology, Groupe Hospitalier Pitié – Salpêtrière, Assistance Publique Hopitaux de Paris, Faculty of Medicine Pierre et Marie Curie, Institut Universitaire de Cancérologie GRC5, University Paris 6, Paris, France; [12]Dept. of Urology, University of Texas Southwestern Medical Center, Dallas, USA; [13]Cancer Prognostics and Health Outcomes Unit, University of Montreal Health Centre, Montreal, Canada; [14]Dept. of Urology, San Raffaele Scientific Institute, Urological Research Institute, Milan, Italy; [15]Dept. of Surgical, Oncological and Gastroenterologic Sciences, Urology Clinic, University of Padua, Padua, Italy; [16]Dept. of Urology, Weill Cornell Medical College, New York-Presbyterian Hospital, New York, USA

Introduction and Objectives: To evaluate the effect of adjuvant chemotherapy (AC) on mortality after RNU for upper tract urothelial carcinoma (UTUC) with positive lymph nodes and to identify patient subgroups that are most likely to benefit from AC.
Materials and Methods: We retrospectively analyzed data of 263 patients with lymph node-positive UTUC, who underwent full surgical resection. One hundred seven patients (41%) received 3 to 6 cycles of AC, while 156 (59.3%) were treated with surgery alone. UTUC-related mortality was evaluated using competing-risks regression models.
Results: In all patients (Tall N+), administration of AC had no significant impact on UTUC-related mortality on univariable (P=0.49) and multivariable (P=0.11) analysis. Further stratified analyses showed that only N+ patients with pT3-4 disease benefited from AC. In this subgroup, AC reduced UTUC-related mortality by 34% (P=0.019). The absolute difference in mortality was 10% after the first year and increased to 23% after 5 years. On multivariable analysis, administration of AC was associated with significantly reduced UTUC-related mortality (SHR 0.67, P=0.022). Limitations of this study are the retrospective non-randomized design, selection bias, absence of a central pathologic review and different AC protocols.
Conclusion: AC seems to reduce mortality in patients with pT3-4 lymph node-positive UTUC after RNU. This subgroup of lymph node-positive patients could serve as target population for an adjuvant prospective randomized trial.

Moderated Poster Session 11
Men's Health
Tuesday, October 14
1300-1430

MP-11.01
Impact of Chronic HCV Infection on Male Fertility
Mohamed Abdel Hamid A[1], **Khalaf Fath Elbab T**[1], Mohamed Galal E[1], Khairy Salem H[2]
[1]Faculty of Medicine, El Minia University, Minya, Egypt; [2]Faculty of Medicine, Cairo University, Cairo, Egypt

Introduction and Objectives: Hepatitis C virus (HCV) infection is gaining attention as a global health problem especially in Egypt which has the highest prevalence. Treatment with peg interferon alfa and ribavirin (PEGIFN/RBV) is the standard of care for chronic hepatitis C. There is some evidence that sperm quality may be impaired in HCV patients. Furthermore limited data is available on the effect of PEGIFN/RBV treatment on human sperm quality and male fertility as some reports have linked HCV infection to altered gametogenesis found in HCV patients. Aim: To study the impact of chronic HCV infection and standard antiviral treatment on male fertility via estimation of seminal parameters, DNA integrity and reproductive hormonal serum levels.
Materials and Methods: Thirty male patients proved pathologically as chronic hepatitis C complaining of infertility (with mean age 35±3.6 years). In addition to 15 healthy volunteers were studied. In all subjects semen samples were analyzed for motility, morphology, and concentration. Furthermore we analyzed sperm DNA integrity via chromatin structure assay which is expressed as the DNA fragmentation index (DFI). A DFI larger than 30% is considered abnormal. In addition to estimation of hormonal levels of (follicle-stimulating hormone, luteinizing hormone, free testosterone, prolactin and DAHES) before treatment and after 12, 24and 48 weeks of combination therapy of pegyinterferon + ribavirin.
Results: The sperm concentration, the mean sperm motility, were significantly decreased in HCV patients compared to that of controls (P 0.001) (P 0.03) respectively, also the normal morphology was significantly reduced in HCV patients (P 0.04) with respect to that of controls. An impairment of spermic morphology occurred, while other seminal parameters did not change significantly during antiviral treatment. Data on sperm DNA integrity were available in 20 patients. At baseline, 5 of 20 patients (25%) had a DFI >30%. The median DFA increased very markedly during treatment (from 20.5% before to 65.2% at 24 weeks of treatment) and remained elevated at 48weeks. Hormonal pattern of patients did not significantly change after treatment except free testosterone, prolactin and DAHES in INF responders. Advanced liver fibrosis and high viral load were risk factors for male infertility.
Conclusion: HCV infection has a negative impact on male fertility through impaired reproductive hormones, quantitative and qualitative alterations of spermatogenesis with DNA abnormalities. Advanced liver fibrosis and high viremia were risk factors for male infertility. Successful treatment will improve hormonal pattern.

MP-11.02
Nomogram to Predict the Outcomes of Intracytoplasmic Sperm Injection (ICSI)
Khairy Salem H[1], Abd El-Latif A[1], El-Din Hosni H[2], Hashem A[2], W. Kattan M[3], Amer M[2]
[1]Dept. of Urosurgery, Cairo University Hospital, Cairo, Egypt; [2]Adam International Clinic, Giza, Egypt; [3]Cleveland Clinic Glickman Urological and Kidney Institute, Cleveland, USA

Introduction and Objectives: Although many studies have shown that the success of ICSI depends on a number of male factors, female factors and laboratory procedures, no one has analyzed these variables collectively.
Materials and Methods: We prospectively analyzed 1112 ICSI cycles performed for male or female infertility. We used multiple factors to build the first nomogram to predict the probability of clinical pregnancy of ICSI. All ICSI procedures were performed in the same institute using the same technique and the same operators. Eleven variables (male factors, female factor, and laboratory factors) were included in a multiple logistic regression analysis. The final nomogram was internally validated with bootstrap analysis.
Results: A young maternal age and an increased number of good quality embryos increased the likelihood of clinical pregnancy. The nomogram was found to have a concordance index of 0.652 and was well calibrated.
Conclusion: We constructed the first nomogram that is accurate to predict the probability of clinical pregnancy of ICSI. The nomogram still needs to be validated externally.

MP-11.03
Assessment of Testicular Perfusion Prior to Sperm Extraction Predicts Success Rate and Decreases the Number of Required Biopsies in Patients with Non-Obstructive Azoospermia
Nowroozi M, Ayati M**, Amini E**, Radkhah K, Jamshidian H, Delpazir A, Ghasemi F
Uro-Oncology Research Center, Tehran University of Medical Sciences, Tehran, Iran

Introduction and Objectives: There have been several attempts to decrease the morbidity of testicular sperm extraction and increase the likelihood of sperm retrieval (SR). In this study we assessed the role of power and color Doppler ultrasonography (US) in patients with azoospermia prior to testicular sperm extraction.
Materials and Methods: One hundred and thirty consecutive patients with azoospermia were assessed in this prospective study. Testicular artery resistive index (RI) was measured using color Doppler US. Based on a semi-quantitative method, the results of power Doppler US were graded into 3 categories: grade 1, no visible vessels; grade 2, between one and three detectable vessels; grade 3: more than three detectable vessels. The location of each visible vessel was also recorded as upper, middle or lower third of the testis.
Results: Seventy four patients with non-obstructive azoospermia (NOA) and 27 with obstructive azoospermia (OA) fulfilled the study criteria. OA patients revealed a significantly lower RI and higher intratesticular perfusion compared with NOA patients. Among NOA patients with grade 3 testicular perfusion, 60% required less than 3 biopsies for successful sperm retrieval (SR) whereas in less than 18% of patients with grade 1 perfusion, sperm was retrieved prior to the third sampling. We also noted a correlation between the presence of visible vessels in each segment and the probability of successful SR during biopsy from the corresponding segment.
Conclusions: Our data indicates that a semi-quantitative, simplified Power Doppler US assessment is capable of localizing areas containing viable sperm with the potential to direct biopsies to specific sites and subsequent decrease in the number of required biopsies.

MP-11.04
A Modified Single-Armed Technique for Microsurgical Vasoepididymostomy
Tu X, Zhao L, Zhuang J, Lv K, Sun X, Qiu S, Deng C
The First Affiliated Hospital of Sun Yat-sen University, Guangzhou, China

Introduction and Objectives: The aim of this study is to evaluate the effectiveness and safety of a modified single-armed suture technique for microsurgical vasoepididymostomy (MVE) in patients with epididymal obstructive azoospermia.
Materials and Methods: From September 2011 to December 2012, microsurgical two-suture longitudinal intussusception vasoepididymostomy were performed using our modified single-armed suture technique in 52 men with epididymal obstructive azoospermia at our hospital. Postoperative patency rate, postoperative impregnation rate and complications were followed.
Results: Among all the cases followed-up more than 10-25 months after operation, 41 patients (79%) had sperm (>10^4/ml^{-1}) in the semen. The

median sperm density was 18.2 $\times 10^6/ml^{-1}$. Thirteen patients' wives (25%) achieved the natural pregnancy. Postoperative complications, such as scrotal hematoma in 2 cases, were observed in the study.
Conclusions: Our modified single-armed suture technique for MVE is an effective and somewhat simplified method for treatment of epididymal obstructive azoospermia.

MP-11.05
Phosphorus as Predictive Factor for Erectile Dysfunction in Middle Aged Men: A Cross Sectional Study in Korea
Cho I**, Kim Y**, Kim S, Kim S, Min S
National Police Hospital, Seoul, South Korea

Introduction and Objectives: Higher serum phosphate levels are associated with atherosclerotic disease and an increased risk of cardiovascular events. However, the association of phosphate with erectile dysfunction (ED) is not well known. We evaluate the influence of serum phosphorus level on ED and the association with other clinical factors.
Materials and Methods: Between March and September 2013, 1899 police officers aged 40-59 years who had participated in a health examination were included. No one had a definite history of neurogenic or vasculogenic ED. All men underwent a detailed clinical evaluation using the Korean version of International Index of Erectile Function-5 (IIEF-5) questionnaires. Serum prostate-specific antigen (PSA), testosterone, phosphorus, body mass index (BMI), evaluation of metabolic syndrome (MetS), and transrectal ultrasonography were also performed.
Results: The median age was 53.0 years, and median value of phosphorus and testosterone were 3.50mg/dL, 4.58ng/mL, respectively. The median total IIEF-5 score was 18. Serum phosphorus level (r=0.108, P<0.001) showed the highest correlation coefficient with IIEF except age, followed by total prostate volume (TPV) (r=-0.065, P<0.001). Serum testosterone level had no significant correlation with the IIEF. Phosphorus level showed a weak but significant correlation with IIEF score after adjusting for age, testosterone, and MetS (r=0.044, p=0.048). Using logistic regression analysis, age, phosphorus, and MetS were predictive factors for moderate to severe ED in the univariate analysis (p<0.001, OR 1.125, 95% CI 1.093-1.159, p=0.007, OR 0.702, 95% CI 0.542-0.908, p=0.010, OR 1.372, 95% CI 1.078-1.745, respectively). The PSA, testosterone, BMI, and TPV had no predictive value for ED. Age and MetS were independent predictors for moderate to severe ED (p<0.001, OR 1.122, 95% CI 1.089-1.156, p=0.048, OR 1.283, 95% CI 1.003-1.641) in the multivariate analysis.
Conclusion: Our data showed that phosphorus had a correlation with ED. Phosphorus is a significant predictor for ED and the powerful factor that can be easily modified in middle-aged men. Handling of phosphorus level in men may be considered one of the useful modalities against the development of ED.

MP-11.06
Use of Erectile Dysfunction as a Tool for Early Diagnosis of Cardiovascular Diseases
Apolikhin O, Efremov E, Melnik Y**, Krasnyak S**
Research Institute of Urology, Moscow, Russia

Introduction and Objectives: Myocardial infarction and ischemic stroke are the main causes of death in adult males. In addition, the identification of erectile dysfunction (ED) may indicate the presence of these disorders in a patient in a latent form, according to some authors. We determined the prevalence of cardiovascular diseases and risk factors in patients seeking medical help with erectile dysfunction at an outpatient clinic.
Materials and Methods: The 108 men with ED were enrolled in the study. All patients filled the International Index of Erectile Function questionnaire (IIEF). Waist circumference, blood pressure, blood chemistry and penile duplex Doppler ultrasound were assessed. Also medical history was studied for the presence of cardiovascular diseases that were previously diagnosed.
Results: The average age of the patients was 52.7 ± 8.6 years. Duration of erectile dysfunction at the time of enrollment was 44.5 (range: 1-180) months. According to medical history the hypertension has been previously diagnosed in 19 (17.5%) patients, whereas elevated blood pressure was detected in 46 (42.5%) patients during examination. Coronary artery disease was previously diagnosed in 5 (4.6%) males. Type 2 diabetes was previously diagnosed in 16 (14.8%) patients. However, fasting glucose level was higher 6.1 mmol/l in 29 (26.8%) patients. History of acute cerebrovascular accidents and intermittent claudication were in 2 patients (1.8%) and 1 (0.9%) patients, respectively. Decreased reactive hyperemia index and the development of systemic endothelial dysfunction were found in 45 (41.6%) patients. Increasing the level of total cholesterol, LDL and triglyceride levels were observed in 68, 79 and 46 cases, respectively (62.9%, 73.1% and 42%, respectively).
Conclusions: Metabolic changes indicating atherosclerosis and other life-threatening diseases in men with erectile dysfunction marked much more frequently than in the general population. Therefore, we have shown that ED is an early marker of systemic diseases in men. These data should be used as a tool for prevention of premature mortality from avoidable causes.

MP-11.07
Erectile Dysfunction, Testosterone Level and Abdominal Obesity
Fillo J[1], Levčíková M[2], Breza J[1], Luha J[3]
[1]Dept. of Urology, University Hospital, Bratislava, Slovakia; [2]Dept. of Internal Medicine, University Hospital, Bratislava, Slovakia; [3]University Hospital, Bratislava, Slovakia

Introduction and Objectives: Testosterone (TST) plays an important role in erectile dysfunction (ED) and may has influence on the development of metabolic syndrome. The number of men with abdominal obesity (AO) which constitutes a serious health risk is continuously growing. This study examined the association among ED, TST level and metabolic syndrome in men with AO at different waist circumference.
Materials and Methods: We examined 216 men, 42 years to 78 years old. AO (waist circumference over 94cm) had 198 men and 18 men were as control group without AO. Complete urological evaluation and internal evaluation were carried out in every patient.
Results We found some degree of ED in 74.7% of men with AO. With growing AO there were

MP-11.07, Table 1. AO and TST level.

Testosterone level	Grade 0,< 94 cm		G 1, 94-101 cm		G 2, 102-109 cm		G 3, 110-119 cm		G 4, 120 + cm		Total	
	no	%	no	%	no	%	no	%	no	%		
<7.0nmol/l	0	0.00	2	4.35	3	4.76	9	15.52	7	22.58	21	9.72
7.0-10.5	1	5.56	9	19.57	24	38.10	22	37.93	16	51.61	72	33.33
10.5-14.0	1	5.56	17	36.96	14	22.22	11	18.97	4	12.90	47	21.76
>14.0nmol/l	16	8.89	18	39.13	22	34.92	16	27.59	4	12.90	76	35.19
Total	18	100.00	46	100.00	63	100.00	58	100.00	31	100.00	216	100.00

more and severe forms of ED. In the control group without AO 50% of men had ED (33% had a mild form, 17% medium and nobody had a severe form ED). We found a strong correlation between TST level and AO (Table 1).There were more patients with low level of TST with growing AO. We found that nearly 89% of men without AO had a TST level over 14nmol/l and none of these men had a low level of TST (below 7.0 nmol/l). With growing AO there were more men with a low level of TST. Ninety eight out of 198 (49.5%) men with AO and 1/18 (5.5%) men without AO had testosterone deficiency syndrome (TDS). Metabolic syndrome was diagnosed in 105/198 (53.0%) men with AO. No men without AO had MetS.

Conclusion: Men over 40 with ED and AO have a higher incidence of TDS and MetS and should also be examined for TDS and MetS. It seems to be reasonable to divide men into four groups according waist circumference. There are significant differences among groups in ED, TDS and MetS.

MP-11.09

Proteomics in Diabetic Patients with Erectil Disfunction and Treatment with 5-Phosphodiesterase Inhibitors

Celada Luis G[1], Brime Menendez R[1], **Otta Oshiro R**[1], San Jose Manso L[1], Galante Romo I[2], Zamorano Leon J[2], Rodriguez Sierra P[2], Jimenez Mateo-Caceres P[2], Calatrava Ledrado L[2], Anastasio de las Heras P[2], Lopez Farre A[2], Olivier Gomez C[1]

[1]University Hospital La Princesa, Autonoma University, Madrid, Spain; [2]University Hospital Clínico San Carlos, Complutense University, Madrid, Spain

Introduction and Objectives: Endothelial dysfunction is one of the first symptoms of erectile dysfunction (ED) and is closely related to atherosclerosis and risk factors such as diabetes mellitus (DM), characterized by inflammatory and oxidative advanced state. Vardenafil is one of the more effective 5-phosphodiesterase inhibitors known in patients with DE and DM. However, at present, it is speculated on the potential pleiotropic effects on inflammation, oxidative stress or endothelial homeostasis. The purpose of this study is to determine the plasma proteome of patients with DM and the effect of vardenafil administration in the expression of proteins related to inflammatory, oxidative stress and cellular homeostasis.

Materials and Methods: Seventeen patients with ED (IIEF-EF 8.8 ± 0.7) and DM were recruited for the study. They received 20 mg of vardenafil one or two times per week for 12 weeks. Each patient's plasma was obtained before and after the 12 weeks of treatment and was analyzed by a bi-dimensional electrophoresis. The plasma proteome obtained before and after the treatment were compared and analyzed with mass spectrometry.

Results: After the treatment with vardenafil, erectile function of patients increased significantly (IIEF-EF 18.3 ± 2.0 p = 0.05). The expression levels of ceruloplasmin isoform 1 (antioxidant protein) and A1 apolipoprotein isoform 5 (endothelial protective protein) increased significantly after the treatment with vardenafil. Furthermore two isoforms of alpha-antitrypsin and betatropomyosin were significantly reduced after treatment. We also observed a significant negative correlation between plasma levels of beta-tropomyosin and IIEF-EF score. Elevated levels of beta-tropomyosin in plasma indicate cell damage and loss of cellular regenerative capacity.

Conclusions: Vardenafil treatment may exert a protective endothelial role through the reduction of systemic inflammation, oxidative stress and the increase of the cellular regenerative capacity.

MP-11.10

Venous Leakage Treatment Revisited: Pelvic Venoablation Using Aethoxysclerol under Air Block Technique and Valsalva Maneuver

Herwig R[1], Sansalone S[2]

[1]Dept. of Urology, Vienna International Medical Clinic, Vienna, Austria; [2]Dept. of Urology, Medical University Tor Vergata, Rome, Italy

Introduction and Objectives: We evaluated the effectiveness of pelvic vein embolisation with aethoxysclerol in aero-block technique for the treatment of impotence due to venous leakage in men using sildenafil for intercourse. The aim of the procedure was to reduce or eliminate the use of sildenafil.

Materials and Methods: A total of 49 patients with veno-occlusive dysfunction, severe enough for the need of PDE5 inhibitors for vaginal penetration, underwent pelvic venoablation with aethoxysklerol. The mean patient age was 53.5 years. Venous leaks were identified by Color Doppler Ultrasound after intracavernous alprostadil injection. Under local anesthesia a 5F-Angioport was inserted antegrade into the deep dorsal penile vein. The pelvic venogram obtained with deep dorsal venography was included. Aethoxysklerol 3% as sclerosing agent was injected after air-block under valsalva manoeuver in three consecutive steps. A 5F-angiography catheter was placed in the vein of major outflow from the penis. Success was defined as the ability to achieve vaginal insertion without the aid of any drugs, vasoactive injections, penile prosthesis, or vacuum device. Additionally, a prae- and posttherapeutical IIEF-5 score was performed.

Results: At a 12 month follow-up 40 out of 49 patients (81.63%) reported to have erections sufficient for vaginal insertion without the use of any drug or additional device. Four (8.16%) patients did not report any betterment. Follow-up Color Doppler Ultrasound revealed a new or persistant venous leakage in 8 (16.33%) of the patients. No serious complications occurred.

Conclusions: Our new pelvic venoablation technique using aethoxysklerol in air-block technique was effective, minimally invasive, and cost-effective. All patients were able to perform sexual intercourse without the previously used dosage of their PDE5 inhibitor. This new method may help in patients with contraindications against PDE5 inhibitors, in patients who cannot afford the frequent usage of expansive oral medication or those who do not fully response to PDE5-inhibitors.

MP-11.11

Early Experiences with Single Session Low-Intensity Shock Wave Therapy for Erectile Dysfunction: Multi-Center Study

Jung G[1], Ha S[1], Seo J[1], Park S[1], Seo K[2], Eom M[3], Rhee H[3]

[1]Smile Jung's Urology Clinic, Busan, South Korea; [2]Dr Seo Urology Clinic, Cheonan, South Korea; [3]Uro Center Uology Clinic, Cheongju, South Korea

Introduction and Objectives: Shock wave therapy is a novel treatment option for erectile dysfunction (ED), and has been proved to be effective in some studies. But the treatment methods were empirical and there is no established shock wave treatment method for ED yet. We analyzed our experiences with short-course single session Low-intensity shock wave therapy (LSWT) for ED.

Materials and Methods: Forty eight consecutive ED patients without any history of pelvic surgery, trauma and/or irradiation who underwent single session LSWT from December 2012 to July 2013 at the 3 centers were included in this study. We applied LSWT to the patients using ED-1000TM (Medispec Ltd.). Single session treatment consisted with 8-time treatment: twice a week, for 4 weeks. Erectile function was assessed with self-administrated International Index of Erectile Function-Erectile Function Domain (IIEF-EFD) score and Erection Hardness Score (EHS) before and 1 month after treatment. The patients' satisfaction to the treatment was assessed by Global Assessment Questionnaire (GAQ) 1 month after the treatment.

Results: Mean IIEF-EFD score increased from 12.6 points to 17.6 points after treatment ($p<0.001$). There were 22 patients (45.8%) who had a 5-point or greater increase in IIEF-EFD score and 34 patients (70.8%) who answered positively to GAQ after treatment. Among 28 patients who couldn't achieve erection hard enough to penetrate initially (EHS ≤ 2), 39.3% (11/28) could achieve penetration after the treatment (EHS ≥ 3). No adverse events were

reported from the treatment.
Conclusion: Single session LSWT improved erectile function of ED patients without any adverse events.

MP-11.12
Penile Prosthesis Placement in Patients with a History of Total Phallic Construction
Zuckerman J, Smentkowski K, Gilbert D, Virasoro R, Tonkin J, Jordan G, McCammon K
Eastern Virginia Medical School, Norfolk, USA

Introduction and Objectives: Outcomes following penile prosthesis placement in patients with a history of total phallic construction are not well described.
Materials and Methods: Retrospective review penile prosthesis placement in patients with prior total phallic construction. Gortex sleave corporal construction was utilized in all patients.
Results: Twenty-five patients underwent neophallus prosthesis placement at a mean 34.4 years of age. Prosthesis placement occurred an average 42 months following phallic construction and follow-up was a mean of 60 months. Malleable prostheses were placed in 17 patients and inflatable in 8; implants were bilateral in 92%. Eight percent experienced operative complications including a bladder injury (1) and phallic flap arterial injury (1). Post-operative complications occurred in 24% at a median 5.9 months following placement. Four prosthesis (16%) were explanted secondary to infection or erosion and two additional required revision. Of the explanted prosthesis one was later replaced without further complication. Seventy-six percent of patients were sexually active following prosthesis placement.
Conclusions: Penile prosthesis placement is possible in patients with prior phallic construction. Although complications rates appear to be increased in this population compared to historic controls of normal anatomic males, the majority in this series were sexually active following prosthesis placement. This demonstrates the utility of prosthesis implantation in these difficult patients.

MP-11.13
Penile Prosthesis Implantation in Surgical Treatment of Severe Peyronie's Disease with Buccal Mucosa Graft
Acimovic M[1,2], Milosavljevic M[3], Radovanovic M[1], Rafailovic D[1], Stojanovic-Milosavljevic M[3], Pejcic T[1], Dzamic Z[1,2], Hadzi-Djokic J[2,4]
[1]Clinic of Urology, Clinical Center of Serbia, Belgrade, Serbia; [2]School of Medicine, University of Belgrade, Belgrade, Serbia; [3]Dept. of Urology, University Children's Hospital, Belgrade, Serbia; [4]Serbian Academy of Sciences and Arts, Belgrade, Serbia

Introduction and Objectives: To present our experience with management of patients with Peyronie's disease. Younger patients with severe Peyronie's disease associated with erectile dysfunction (ED) require the reconstruction of the cavernosal body (CB), preservation of the vascular elements of the CB and implantation of the penile prosthesis.
Materials and Methods: Nineteen younger patients with impaired axial rigidity due to severe Peyronie's disease and partial, or complete ED, underwent surgical reconstruction from September 2011 to November 2013. Color Doppler Ultrasound (CDU), revealed that majority of patients had normal arterial flow through CBs, while three patients had moderately impaired flow. Circumcision incision line was used to approach the defect on the cavernosal bodies. Multiple buccal mucosa grafts (BMG) were used as patches in order to straighten the CB curvature and to prevent the narrowing phenomenon. The mucosal side of the BMG was positioned to face the penile prosthesis, inside the CB, in that way, buccal epithelium replaces the endothelium. Semirigid, AMS-Spectra® prosthesis, 9mm in diameter, was used in all patients, in order to enable the straightening of the penis and to prevent the postoperative recurrent curvature. The use of thinner prostheses enables genuine erections in younger patients.
Results: The average patients' age was 43 years (range 26 -57 years). Average follow-up was 14 months (range 6-24 months). All patients were satisfied by cosmetic and functional results. None of the patients had voiding problem. Fifteen patients (78.9%) reported improved erection after the surgery, while four patients had to induce the erection with sildenafil. There were no cases with recurrent curvature, or penile shortening. In addition, there were no cases with the rejection of the prosthesis.
Conclusion: In the management of Peyronie's disease in the younger men, BMG provides satisfactory functional and cosmetic results. The orientation of the buccal epithelium towards the prosthesis is important. Dartos tunica provides better vascular bed for the BMG than the erectile tissue of the CBs. The use of thinner prosthesis preserve aditional erection in younger patients and also provides good axial rigidity.

MP-11.14
Different Ways to Support Recovery of Erectile Function after Nerve-Sparing Radical Prostatectomy: Concepts for Rehabilitation in Germany
Bannowsky A[1], Ückert S[2], van Ahlen H[1]
[1]Dept. of Urology, Klinikum Osnabrück, Osnabrück, Germany; [2]Dept. of Urology, Hannover Medical School, Hannover, Germany

Introduction and Objectives: Despite objective data regarding rehabilitation of erectile function (EF) after nerve-sparing radical prostatectomy (nsRP) the "gold-standard"-treatment is still under debate. The aim of this study was to evaluate the distribution of the different treatment options in Germany.
Materials and Methods: Between 10/2010 and 11/2013 we performed a questionnaire sent to all urologist (outpatient/general and university hospitals/rehabilitation hospitals) in Germany. The survey consists of different questions, e.g. if and what kind of therapy the urologist choose to support rehabilitation of EF after nsRP. Further questions dealt with the frequency, duration and "optimal" start of the chosen therapy.
Results: Until today 262 urologists completed and returned the questionnaire. The distribution was: urologists in hospitals n=110, outpatient/ambulatory n=148, with 24% performing surgical treatment, and urologist in rehabilitation hospitals n=4. Overall 50% of the urologists are performing radical prostatectomy on a regular basis. The question about the "rehabilitation concept" showed 39 different treatments within this group. To increase EF after nsRP PDE5-inhibitors were mostly administered (88%): 45% "on demand" vs. 55% on a daily or regular basis ≥ 3 times/week. The use of penile injection therapy, MUSE or VCD was 32%, 6% and 30% respectively. In 56% the treatment started within the first weeks after surgery and was performed until the patient regained potency in 46%. Only 14% of the urologists didn't choose any "active" kind of rehabilitation treatment for EF recovery after nsRP.
Conclusion: Lots of different therapeutic concepts are currently performed in Germany to increase EF recovery after nsRP. The use of PDE5-inhibitors is the most chosen treatment option. Despite the published data regarding effectiveness the optimal treatment seems to be still unknown.

MP-11.15
"Kiel Concept": Low-Dose Sildenafil for Rehabilitation of Erectile Function after Nerve-Sparing Radical Prostatectomy: A Two-Year Follow-Up
Bannowsky A[1], Schulze H[2], van der Horst C[2], Jünemann K[2]
[1]Dept. of Urology, Klinikum Osnabrück, Osnabrück, Germany; [2]University Hospital Schleswig-Holstein, Campus Kiel, Kiel, Germany

Introduction and Objectives: Several treatment regimens for rehabilitation of erectile function after nerve-sparing radical prostatectomy (nsRP) are currently discussed. In previous prospective studies we showed nocturnal penile tumescense and rigidity (NPTR) in 95% of the patients in the early phase after nsRP.
Materials and Methods: Forty three sexual active patients were operated by nerve-sparing retropubic radical prostatectomy. All patients completed an IIEF-5 questionnaire concerning erectile function preoperatively. A measurement of NPTR (Rigi-Scan®) was carried out in the following night after catheter removal.

Twenty three patients with preserved nocturnal erections detected during NPTR-recordings received sildenafil 25mg/d at night. A control of 18 patients underwent follow-up without PDE-5-inhibitors. IIEF-5 questionnaire was performed 6, 12, 24, 36, 52, 78 and 104 weeks after operation.
Results: Forty one of 43 patients (95%) showed 1-5 erections during the first night after catheter removal. In the group of daily sildenafil the IIEF-5 score decreased from preoperative 21.2 mean score to 3.6 at 6 weeks, 3.9 at 12 weeks, 6.1 at 24 weeks, 10.4 at 36 weeks, 14.5 at 52 weeks, 19.4 at 78 weeks and 21.0 mean score at 104 weeks after prostatectomy. In the control group preoperative IIEF-5 mean score 21.2 decreased to 3.8 at 6 weeks, 3.9 at 12 weeks, 5.3 at 24 weeks, 6.1 at 36 weeks, 9.3 at 52 weeks, 13.4 at 78 weeks and 14.8 at 104 weeks. Statistical evaluation showed a significant difference in IIEF-5 score and time to recovery of erectile function ($p<0.05$).
Conclusion: The measurement of NPTR after nsRP showed erectile function even at the "first" night after catheter removal. In case of early penile erections the cavernous nerve was well preserved during surgery providing good neuronal integrity. Daily low dose PDE-5 inhibitors lead to a significant improvement of recovery of erectile function and is supportive to the organic rehabilitation.

MP-11.16
Premature Ejaculation in University Students: Prevalence and Relation with Mood Disorders
Campos Braga I[1,2], Cabral J[2], Louro N[2], Avelino F[2]
[1]School of Health Sciences, University of Minho, Braga, Portugal; [2]Dept. of Urology, Centro Hospitalar do Porto, H.S.António, Porto, Portugal

Introduction and Objectives: Actual prevalence of premature ejaculation (PE) in young males is not well described. Some recent studies (Shindel et al) showed that healthy sexuality can be protective against depressive symptoms in medical students. The aim of this study was to assess self-reported PE and the relation with depressive or anxious symptoms in a young male population.
Materials and Methods: Students from a public university were invited to participate in an online questionnaire. Participants completed a demographic survey and sexual history and sexual bother was evaluated with the question: "How do you characterize your sexual function at this time?". A validated scale (Hospital Anxiety and Depression Scale – HADS) evaluated depression – score of ≥9 in the HADS depression dimension – and anxiety – score of ≥9 in the HADS anxiety dimension. Subjects completed Premature Ejaculation Diagnostic Tool (PEDT) and a score of 9 or 10 indicated probable PE and a score of ≥11 indicated PE. Descriptive statistics, Mann-Whitney U and Chi square were used to analyze responses.
Results: A total of 231 male subjects (mean age 24.2y) completed the questionnaire. Demographic data is available in Table 1. Depressive symptoms were present in 10 (5.5%) and anxiety symptoms in 62 (34.1%) subjects. The presence of PE was self reported in 40 (22.0%) and probable PE in 17 (9.3%) subjects. The subjects that had depression score in HADS showed more sexual bother ($p=0.028$), but didn't present more PE ($p=0.515$). Subjects with anxiety symptoms had more sexual bother ($p=0.042$) and more PE ($p=0.030$).
Conclusion: Our study showed a high prevalence of PE in young male population. There is a relation with mood disorders to disturbances in normal sexual function. Anxiety disorders, more than depression, play an important role in sexual dysfunction, namely in PE.

MP-11.17
Are Estimated and Stop-Watch Intravaginal Ejaculatory Latency Time Surely Interchangeable in Assigning Lifelong Premature Ejaculation?
Lee W[1], Lee S[2], Ko K[3], Yang D[3]
[1]Chuncheon Sacred Heart Hospital, Chuncheon, South Korea; [2]Dongtan Sacred Heart Hospital, Chuncheon, South Korea; [3]Kangdong Sacred Heart Hospital, Chuncheon, South Korea

Introduction and Objectives: To assess the clinical utility of estimated intravaginal ejaculatory latency time (eIELT) compared to stop-watch intravaginal ejaculatory latency time (sIELT), in assigning lifelong premature ejaculation (PE) based on International Society for Sexual Medicine (ISSM) Guidelines.

MP-11.16, Table 1.

Age, in years (min-max)	24 (17-65)
Sexual Orientation	n (%)
Heterosexual	201 (87.0)
Homosexual	15 (6.5)
Bisexual	15 (6.5)
Relationship status	n (%)
Single, no actual relation	87 (37.7)
Single, with relation	119 (51.5)
Living together	12 (5.2)
Married	12 (5.2)
Divorced	1 (0.4)
Age of first sexual intercourse, in years (min-max)	18 (13-30)
Never had sexual relations, n (%)	49 (21.2)
Number of sexual partners in the last six months	n (%)
0	67 (29.0)
1	135 (58.4)
≥2	29 (12.6)
Subjective global assessment of sexual function (*- classified as sexual bother)	n (%)
Satisfied, no desire for change	97 (42.0)
Most satisfied, desire change	53 (22.9)
Unsatisfied, no desire for change	5 (2.2)
Unsatisfied, desire change *	52 (22.5)
Sexual dysfunction *	7 (3.0)
Sex is not an issue for me	17 (7.4)
PEDT (total n: 182)	n (%)
No PE	125 (68.7)
Probable PE	17 (7.4)
PE	40 (17.3)
Legend: PEDT – Premature Ejaculation Diagnostic Tool	

Materials and Methods: A total of 118 healthy men between the ages of 30 and 70 years with a history of lifelong PE, not erectile dysfunction, were recruited between July 2010 and August 2011 at five institutions in Korea. At the initial visit, all subjects underwent preliminary assessments including a medical and sexual history, vital signs, physical examination, and self-administration of the eIELT, International Index of Erectile Function erectile function domain (IIEF-EF), Premature Ejaculation Profile (PEP) and Premature Ejaculation Diagnostic Tool (PEDT) questionnaire. During the 1-week study period, subjects were requested to experience sexual intercourse at least two times, and to record the time from foreplay to beginning intercourse (FTIT) using a stop-watch and sIELT. PE was diagnosed using the ISSM guidelines.
Results: Geometric mean eIELT and sIELT were 3.3 and 2.8 minutes, respectively. eIELT and sIELT correlated reasonably well (Pearson correlation coefficient=0.512; $p<0.001$). However, eIELT was overestimated by 1.2 min, compared to the sIELT ($p=0.046$). Also, eIELT was less correlated with each PEP questionnaire, PEP index score and overall sexual act time (OSAT), when compared to the sIELT (each p value <0.05). Accuracy of eIELT was lower (67.9%, $p=0.001$), and eIELT of 2 minutes was the most acceptable cut-off value (sensitivity 64.0%, specificity 65.6%), compared to diagnose PE by sIELT.
Conclusion: Our results showed that eIELT was overestimated, and lower clinical utility compared to sIELT. Our study suggests that eILET and sIELT cannot be directly interchangeable, and the flexibility may be needed to use eIELT instead of sIELT, in men who are likely to seek treatment for lifelong PE. More research is needed.

MP-11.18
Diagnostics of Penile Microcirculation Disorders in Patients with Vasculogenic Erectile Dysfunction
Kurbatov D[1], **Aliev R**[2]
[1]Endocrinological Scientific Center, Moscow, Russia; [2]Andrology Center of Altai Region, Barnaul, Russia

Introduction and Objectives: Duplex Doppler ultrasonography (DDU) is the conventional test for penile haemodynamic evaluation for erectile dysfunction (ED) screening. We used since 2007 a new method for vasculogenic ED diagnosis - Laser Doppler Microcirculation Floumetry (LDMF).
Materials and Methods: Ninety six patients were examined – 69 men (mean age 56±5.2) suffered arteriovenous form of ED and 27 healthy men (mean age 28±4.6) as control group. Patients with diabetes mellitus, severe arterial hypertension were excluded. Initially all men undergone DDU with pharmacological test, then tested by LDMF with laser analyzer LAKK-02 ("LAZMA", Russia) and helium-neon laser of LGN-207 B-type with 0.63 microns wave length.
Results: Slow rhythms with frequency of 1-10 oscillations per minute prevailed in the control group. These rhythms were accompanied with the maximum intravascular resistance and active microcirculations mechanism. We considered these blood flow parameters as a physiological norm of the peripheral microcirculation and it correlated with the dynamics fluctuations of the blood flow. The patients with ED had intravascular circulatory injuries. It characterized by abrupt decrease of the blood flow and statistically significant fluctuations of the erythrocytes velocity, decreasing of the myogenic tone and increasing of the neurogenic tone in the precapillary net. The microcirculation's effectiveness index was also decreased. There was the decreasing of the blood perfusion intensity in cavernous tissue, blood volume reduction in the arterioles, and the congestion in venules with increasing of the erythrocytes amount. These data indicated that the patients with vasculogenic ED had the spastic form of microcirculation injure - decreasing of blood inflow due to cavernous tissue vessels spasm. In these cases the microcirculation index and sphygmic fluctuations amplitude decreased, but the slow oscillations amplitude and vasomotory activity increased.
Conclusion: LDMF is a new method of vasculogenic ED diagnosis. In comparison with DDU this method allows to check the microcirculation mechanism and evaluate blood flow disturbances directly in the cavernous tissue. It helps to study the pathogenic changes caused by vasculogenic ED and thus improves the quality of diagnosis.

Moderated Poster Session 12
Prostate Cancer: Markers, Prevention and Staging
Tuesday, October 14
1300-1430

MP-12.01

Incidence of Prostate Cancer (PCa) in 340 Hypogonadal Men Treated with Testosterone Undecanoate Injections (TU) for Up To 7 Years: Observational Data from a Registry Study

Haider A[1], Doros G[2], Traish A[3]
[1]Dr. Ahmad Haider Medical Office, Bremerhaven, Germany; [2]Dept. of Epidemiology and Statistics, Boston University School of Public Health, Boston, USA; [3]Depts. of Biochemistry and Urology, Boston University School of Medicine, Boston, USA

Introduction and Objectives: Concerns regarding the safety of testosterone treatment, particularly regarding PCa in middle-aged and elderly men, still hamper the use of testosterone in hypogonadal men. In this study, we investigated prostate parameters incl. incidence of PCa in hypogonadal patients on long-term treatment with TU.

Materials and Methods: In a prospective, cumulative registry study, 340 men (age: 57.37 ± 7.03 years) with testosterone ≤12.1 nmol/L received TU 1000 mg every 12 weeks following an initial interval of 6 weeks for up to 7 years. Prostate volume (PV) and PSA were measured and digital rectal examination (DRE)/transrectal ultrasound (TRUS) performed before treatment initiation and then regularly every 3-6 months. In case of suspected PCa, biopsies were performed.

Results: PV increased from 28.96 ± 10.41 to 29.88 ± 13.85 ml by model-adjusted 2.59 ± 0.2 ml (p<0.0001). This increase was statistically significant compared to the previous year for the first four years. PSA increased from 1.74 ± 0.94 to 1.96 ± 1.03 ng/ml by model-adjusted 0.23 ± 0.52 ng/ml (p<0.0001). Fifty three biopsies were performed in testosterone-treated patients. Of these, 5 (9.4%) were positive and 48 (90.6%) negative. The proportion of PCa in testosterone-treated patients in our registry study was 1.5% with an incidence of 30.7 per 10,000 patient years. In hypogonadal patients without testosterone treatment, 314 biopsies were performed. Of these, 111 (35.4%) were positive and 203 (64.6%) negative. In eugonadal patients, 584 biopsies were performed. Of these, 263 (40.4%) were positive and 321 (55%) negative. In total, 898 prostate biopsies were performed in our practice from 2004 through 2013, of which 379 (42.2%) were positive and 519 (57.8%) negative.

Conclusions: Long-term treatment with TU in hypogonadal men undergoing regular monitoring according to EAU guidelines does not increase the incidence of PCa.

MP-12.02

Genetic Variations of the ADIPOQ Gene, Adiponectin and Risk of Prostate Cancer

Gu C, Zhu Y, Qu Y, Zhang G, Wan F, Ye D
Dept. of Urology, Fudan University Shanghai Cancer Center, Shanghai, China

Introduction and Objectives: Adiponectin secreted by adipose tissue has been implicated in prostate carcinogenesis. Genetic variations in *ADIPOQ* are thought to influence the activity of adiponectin, thus relating to cancer occurrence.

Materials and Methods: In this hospital-based case–control study of 917 prostate cancer (PCa) cases and 1,036 cancer-free controls, we evaluated the association of single nucleotide polymorphisms (SNPs) in *ADIPOQ* gene with risk of PCa and adiponectin levels. Variants of *ADIPOQ* gene were genotyped by Taqman polymerase chain reaction method. The plasma adiponectin concentrations were measured by enzyme-linked immunosorbent assay (ELISA).

Results: We found that *ADIPOQ* rs3774262 variant AA genotype was associated with both decreased PCa risk [adjusted odds ratio (OR): 0.66, 95% confidence interval (CI) = 0.48-0.92] and increased plasma adiponectin levels (p = 0.036 and 0.043), with significant difference by tumor grade, clinical stage and aggressiveness. A significant interaction between *ADIPOQ* rs3774262 and body mass index (BMI) was observed in modifying the risk of PCa ($p = 6.7\times10^{-3}$). *ADIPOQ* rs266729 and rs182052 were not related to PCa risk or plasma adiponectin levels.

Conclusion: Our data support *ADIPOQ* rs3774262 may be prognostic factors for PCa development in combination with plasma adiponectin levels. It may contribute to the molecular basis for the association between obesity and PCa, but underlying complex mechanisms require further studies.

MP-12.03

Virus-Encoded microRNAs hsv1-miR-H18 and hsv2-miR-H9-5p: Valuable Diagnostic Biomarkers for Prostate Cancer

Kim W[1], Yun S[1], Kim T[2], Jang H[3], Kim Y[1], Lee S[1], Kim W[1]
[1]Chungbuk National University, Cheongju, South Korea; [2]Cheongju Saint Mary's Hospital, Cheongju, South Korea; [3]Daejoen Veteran Hospital, Daejeon, South Korea

Introduction and Objectives: miRNAs may be potential cancer biomarkers as stable miRNAs have been detected in biological fluids such as serum, plasma, and urine. In terms of prostate cancer, although several studies have reported on the use of putative miRNAs in body fluids as diagnostic and prognostic markers, the significance has been limited. This study is to examine whether the expression of urinary cell-free miRNAs is different in patients with prostate cancer and controls with benign prostatic hyperplasia.

Materials and Methods: A total of 750 urine samples from patients with prostate cancer, benign prostatic hyperplasia, and prostate biopsy were used. After miRNA array analysis from urine to select candidate urinary miRNAs, ten candidates were validated in independent cohort. Finally matched samples from cases and control were used to evaluate correlation between candidate miRNA in prostate tissue, urine and serum. Urinary miRNAs were detected using miRNA array and real time PCR, and the diagnostic value was evaluated by Receiver operating characteristics analysis.

Results: There were significant differences in the expression of cell-free hsa-miR-615-3p, ebv-miR-BART4, hsv1-miR-H18, hsv2-miR-H9-5p, and hsa-miR-4316 between benign prostatic hyperplasia controls and prostate cancer patients (P<0.05). In particular, hsv1-miR-H18 and hsv2-miR-H9-5p levels were higher in urine from prostate cancer patients (P<0.001). The levels of hsv1-miR-H18 and hsv2-miR-H9-5p in urine showed an area under the curve of 0.790, with a sensitivity of 78.2% and a specificity of 68.5%, and an area under the curve of 0.826, with a sensitivity of 69.2% and a specificity of 80.8%, respectively. For patients in the PSA gray zone and transrectal biopsy, hsv2-miR-H9-5p showed a better diagnostic performance than serum PSA. There was a significant correlation between hsv1-miR-H18 and hsv2-miR-H9-5p in tissue and urine samples (r=0.369, P<0.001, and 0.552, P<0.001, respectively).

Conclusions: Virus-encoded miRNAs were associated with prostate cancer, and hsv1-miR-H18 and hsv2-miR-H9-5p may be important urinary diagnostic markers for prostate cancer even in patients with PSA gray zone.

MP-12.04

New Perspectives in Urinary Markers of Prostate Cancer: Role of MMP9, hK3 and PSMA Gene Expressions

Araujo L, Dos Anjos G, Dos Reis S, Viana N, Leite K, Srougi M, Antunes A
FMUSP, Sao Paulo, Brazil

Introduction and Objectives: The evaluation of urinary markers for prostate cancer (PCa) diagnosis has become an important field of research. Our goal is to evaluate the role of urinary matrix metalloproteinase-9 (MMP9); kallikrein-3 (hK3) and prostate-specific membrane antigen (PSMA) gene expressions in the diagnosis and prognosis of PCa.

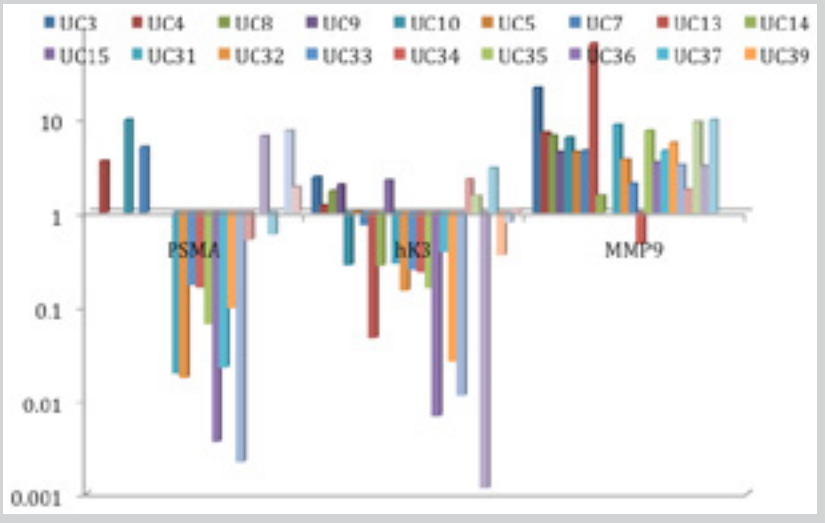
Materials and Methods: We conducted a case-control study with 26 patients with PCa and 28

patients with low-risk for PCa diagnosis after the ethics committee approval. Urine samples were collected after prostatic massage of patients during the outpatient visit to the urology department at the University of Sao Paulo and analyzed by qRT-PCR. Expression levels were compared between patients with and without PCa and according to the prognostic factors, as Gleason score, PSA, clinical stage.

Results: Expression levels of urinary markers in PCa cases relative to patients without PCa are shown in Figure 1. The MMP9 showed an overexpression in 95.4% of with an average overexpression of 8.3 times. When we analyzed genes simultaneously, we found that overexpression of MMP9 and PSMA was related to a Gleason >6 in 100% of patients (p: 0.036). The PSMA presented underexpression pattern in cases of PCa, however, in patients with poorer prognostic factors, it showed an overexpression pattern: 3.19 times (Gleason >6) and 3.45 times (PSA>10). hK3 presented an underexpression pattern in cases of PCa and lack of association with prognostic factors. None of the genes correlate with prostate size.

Conclusions: We have shown that there is an upregulation of MMP-9 and a downregulation of hK3 and PSMA in PCa cases. In addition, we demonstrated a prognostic relevance of PSMA expression as demonstrated by the significant correlation with poorer prognostic factors.

MP-12.04, Figure 1.



MP-12.05

ERG Typing of Prostate Cancers in the Context of Multi-Focal Tumors, Age and Ethnicity in 909 Whole-Mount Prostatectomy Specimens

Dobi A[1,2,3], Young D[1,2,3], Rosen P[1,2,3], Farrell J[1,2,3], Degon M[1,2,3], Chen Y[1,2,3], Cullen J[1,2,3], Petrovics G[1,2,3], Srivastava S[4], Kagan J[4], McLeod D[1,2,3], Srivastava S[1,2,3], **Sesterhenn I**[5]

[1]Dept. of Surgery, CPDR, Bethesda, USA; [2]Urology Service, USUHS, Bethesda, USA; [3]Urology Service, WRNMMC, Bethesda, USA; [4]Cancer Biomarkers Research Group, Division of Cancer Prevention, National Cancer Institute, Bethesda, USA; [5]Joint Pathology Center, Silver Spring, USA

Introduction and Objectives: ERG overexpression, a result of ERG genomic alterations, is the most common validated prostate cancer (pc) gene alteration. ERG typing will impact its utility in biological classification. Evaluations of ERG oncogenic activation are providing new insights into the ERG based stratification of pc in diverse ethnic populations around the world. This study provides a comprehensive evaluation of ERG oncoprotein in 909 whole-mount prostatectomy specimens in the context of multifocal disease, age and ethnicity.

Materials and Methods: For comparative evaluation of ERG frequencies, ERG oncoprotein expression was analyzed in whole-mounted sections of 491 Caucasian American (CA) and 418 African American (AA) patients who underwent radical prostatectomy at Walter Reed National Military Medical Center. ERG oncoprotein was evaluated by immunohistochemistry, an excellent surrogate of ERG gene fusions in pc.

Results: Consistent with our previous observations, this comprehensive evaluation of ERG in a larger cohort further confirmed significantly lower frequencies of ERG oncoprotein expression (p<0.0001) in the index tumors of AA (28.6%) as compared to CA (51.1%) patients. The difference was more pronounced in higher grade tumors of AA patients with majority of Gleason 8-10 index tumors lacking ERG expression. Significantly increased ERG oncoprotein frequency was noted in pc of both young CA and AA patients.

Conclusions: ERG-based stratification defines molecular subtypes of pc. Association of ERG negativity with high grade tumors and poor prognostic features in AA warrants ERG inclusion in the development of informative marker panels to aid in diagnostic, prognostic and targeted therapy settings. ERG typing significantly contributes to the understanding of causal alterations resulting in higher incidence and associated mortality among AA patients.

MP-12.06

Systematic Review of Prostate Cancer Risks and Association with Consumption of Fish and Fish-Oils: Analysis of 495,321 Participants

Lovegrove C[1], Ahmed K[1], Challacombe B[2], Khan S[2], Popert R[2], Dasgupta P[1]

[1]MRC Centre for Transplantation, NIHR Biomedical Research Centre, King's Health Partners, King's College, London, UK; [2]Dept. of Urology and Nephrology & Renal Transplantation, Guy's & St Thomas' Hospital, London, UK

Introduction and Objectives: The role of fish-oils in inflammation entails potential role in inhibiting carcinogenesis and favourable outcomes for cancer symptoms. This systematic-analysis of the literature aims to review current evidence for the role of dietary-fish and fish-oil intake in prostate-cancer (PC) risk, aggression and mortality.

Materials and Methods: A systematic-review of studies exploring evidence for PC-risk, aggression and mortality associated with dietary-fish and fish-oil intake was conducted through PubMed, MEDLINE and Embase. Outcome-measures were PC-risk, aggression and mortality were extracted for analysis.

Results: A total of 495,321 (37-studies) participants were investigated. These revealed various relationships regarding PC-risk (n=31), aggression (n=8) and mortality (n=3). Ten studies considering PC-risk found some significant inverse trend related to fish or fish-oil intake. One found a dose-response relationship whereas greater intake of long-chain-polyunsaturated-fatty-acids increased risk of PC when considering crude odds-ratios (p=0.014). Three studies addressing cancer aggression identified a significantly relationship with reduced risk of aggressive disease. This applied when considering the greatest intake of total fish (OR 0.56 (95% CI 0.37–0.86)), dark fish and shellfish-meat (p<0.0001), EPA (p=0.03) and DHA (p=0.04). Three studies investigating fish-consumption and PC-mortality identified a significantly reduced risk. Multivariate-OR (95% CI) were 0.9 (0.6-1.7), 0.12 (0.05-0.32) and 0.52 (0.30-0.91) at the highest measured fish-intake.

Conclusion: Fish and fish-oil do not show a consistent role in reducing PC incidence, aggression and mortality. Results suggest that type of fish consumed and fish-oil ratio are significant considerations. Findings demonstrate potential for incorporating awareness of fish and fish oil consumption into public-health campaigns for primary and secondary prevention.

MP-12.07
The Preliminary Study of Genistein in the Chinese Prostate Biopsy Population
Wu Y, Na R, Ding Q
Fudan Institute of Urology and Dept. of Urology, Huashan Hospital, Fudan University, Shanghai, China

Introduction and Objectives: Genistein is one of the main soy isoflavone in our daily diet. There were some studies both *in vivo* and *vitro* had proved that high concentration of serum genistein may relate to the low morbidity and mortality of prostate cancer in Asian population. Since there are few studies of genistein in Chinese population, we performed this study to preliminary evaluate the associations among serum genistein, epidemiologic factors and prostate cancer in Chinese population.
Materials and Methods: Between 2012 and 2013, 98 men over the age of 40, underwent prostate biopsy for prostate cancer (PCa) at Huashan Hospital, Shanghai, China. Clinical information, epidemiologic information and blood samples were collected prior to biopsy for each patient. All patients underwent 10-core ultrasound guided transperineal prostate biopsy, the pathology results were collected after biopsy. Measure the serum genistein concentration of the blood samples and analyze the results along with the clinical and epidemiologic information.
Results: Among the 98 patients, 46 (46.9%) were diagnosed with prostate cancer. The serum genistein concentration of non-PCa patients (913.6 ng/ml) were significantly higher than PCa patients (639.6 ng/ml) (P<0.05). As for other epidemiologic factors, we only found significant difference in age between PCa and non-PCa patients (72.5 vs. 68.1) (P<0.05). In the univariate analysis, we found age and serum genistein were related with prostate cancer (P<0.05). In multivariate analysis, we found age, smoking history and serum genistein were related with prostate cancer (P<0.05).
Conclusion: High concentration of serum genistein may have a protective effect for prostate cancer.

MP-12.07, Table 1. The Epidemiological Features and Serum Genistein Concentration of Chinese Prostate Biopsy Population

Variables	Overall (n=98)	PCa (n=46)	non-PCa (n=52)	P value
Age (year) Mean (SD)	70.1 (8.9)	72.5 (8.4)	68.1 (8.9)	0.014a
Family history of cancer Positive n (%)	52 (52)	27 (56.3)	25 (48.1)	0.414b
Somking history Positive n (%)	38 (38.0)	22 (45.8)	15 (28.8)	0.053b
Total genistein at the time of biopsy(nmol/l) Mean (SD)	773.1 (592.3)	639.6 (442.0)	913.6 (677.6)	0.022a
Intake of soy products High intake (%)	27 (27.0)	11 (23.9)	16 (30.8)	0.448b

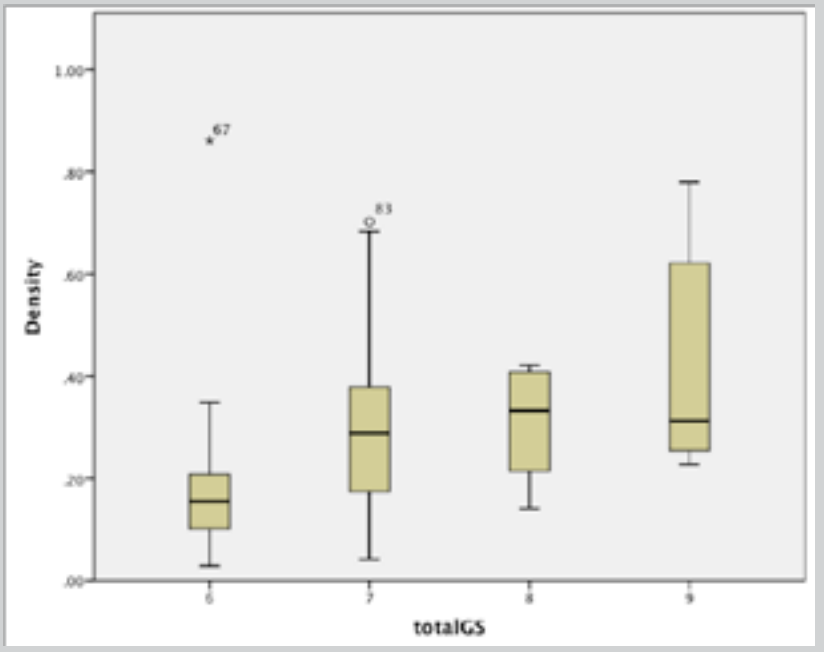
MP-12.07, Table 2. Univariate and Multivariate Analysis of the Epidemiological Variables at the Time of Biopsy

	Univariate analysis	
Variables	**Odds ratio (95% CI)**	**P Value**
Age	1.062 (1.011-1.116)	0.017
Family history of cancer Positive vs. Negative	1.286 (0.580-2.848)	0.536
Somking history Negative vs. Positive	0.442 (0.192-1.018)	0.055
Total genistein	0.999 (0.998-1.000)	0.026
Intake of soy products High vs. Low	0.707 (0.288-1.735)	0.449
	Multivariate analysis	
Variables	**Odds ratio (95% CI)**	**P Value**
Age	1.073 (1.019-1.131)	0.01
Somking history Negative vs. Positive	0.386 (0.155-0.959)	0.013
Total genistein	0.999 (0.998-1.000)	0.018

MP-12.08
Relationship between Volume-Adjusted Prostate-Specific Antigen and Pathologic Gleason Score
Ma WK, Yuen S, Teoh J, Yiu MK
Queen Mary Hospital, University of Hong Kong, Hong Kong

Introduction and Objectives: We investigate the relationship between pathologic Gleason score of prostate cancer and volume-adjusted serum prostate-specific antigen (PSA) concentration estimates based on pre-operative magnetic resonance imaging (MRI).
Materials and Methods: All prostate cancer patients who underwent MRI prior to Robot-assisted Laparoscopic Radical Prostatectomy (RaLRP) in our hospital from October 2011 to February 2014 were included. Data was retrieved from a prospectively collected database of all patients treated with RaLRP for prostate cancer. The height (H), width (W) and length (L) of the prostate on T-2 weighed MRI were measured by the radiologist and the MRI-estimated volume was calculated according to the ellipsoid formula (H x W x L x π/6). The volume-adjusted serum PSA was derived from PSA divided by MRI-estimated prostate volume. The volume-adjusted serum PSA was then compared with the pathologic total Gleason score by using Spearman correlation coefficient.
Results: A total of 84 patients (average age 65.9 years old, range 46 – 77 years old) were included. The mean MRI-estimated prostate volume was 41.6±37.5cm^3. Of the 84 patients, 29 (34.5%) patient had Gleason score of 6, 40 (47.6%) had Gleason score of 7; 8 (9.5%) had Gleason score of 8 and 7 (8.3%) had Gleason score of 9. The mean volume-adjusted serum PSA is 0.2737±0.18 ng/mL/cm^3. The Gleason score was significantly correlated with volume-adjusted serum PSA (ρ = 0.48; p = 0.000004) (Figure 1).
Conclusion: Volume-adjusted serum PSA has shown a significant correlation with pathologic Gleason score of prostate cancer and can potentially contribute to risk stratification of significant prostate cancer.

MP-12.08, Figure 1.



MP-12.09
Role of Transition Zone PSA Density in the Detection of Prostate Cancer in Patients with Chronic Prostatitis
Ayati M, Nowroozi M, Jamshidian H**, Amini E**, Taheri M, Tehranchi A
Uro-oncology Research Center, Tehran University of Medical Sciences, Tehran, Iran

Introduction and Objectives: Prostatic inflammation may cause increased PSA level in some men; we conducted this study to assess the *predictive accuracy of* transition zone PSA density in the detection of prostate cancer among patients with abnormal PSA and chronic prostatitis.
Materials and Methods: Analysis was performed on data derived from TRUS-Biopsy registry database containing 2014 men. Patients with serum PSA level higher than 20 ng/dL were excluded and 1352 patients were assessed. Patients were divided into two groups based on the presence of chronic inflammation in prostate histopathology specimens. Group 1 consisted of 783 patients with no evidence of inflammatory process in histopathology specimens and Group 2 consisted of patients with the presence of chronic inflammatory process. All patients underwent standard TRUS-guided 12 core prostatic biopsy with calculation of total and transition zone prostatic volume. Receiver operating characteristic *(*ROC*)* curve analysis was performed and the area under the roc curve (AUC) was calculated to evaluate the diagnostic accuracy of PSA and PSA-related parameters in each group.
Results: The AUC for PSA density and Transition zone PSA density in Group 1 patients was 0.748 and 0.769 respectively. In this group of patients at PSA density cut-off value of 0.1, sensitivity and specificity estimates were 92% and 28% respectively and at transition zone PSA density cut-off value of 0.22 the sensitivity and specificity of prostate cancer detection was 90% and 30%. In the second group, The AUC for PSA density and Transition zone PSA density was 0.708 and 0.760 respectively. In this subgroup of patients we noted that at PSA density cut-off value of 0.1, sensitivity and specificity estimates were 90% and 23% respectively whereas at transition zone PSA density cut-off value of 0.22 the sensitivity and specificity of prostate cancer detection was 90% and 40%.
Conclusion: transition zone PSA density acts no better than PSA density in detecting prostate cancer in patients without prostatic inflammation, however transition zone PSA density may be considered a valuable tool in detecting prostate cancer among patients with chronic prostatitis and may reduce number of unnecessary biopsies.

MP-12.10
Stratification of Patients with Intermediate-risk Prostate Cancer
Hong S[1], Jung J[2], Lee J[1], Byun S[1], Lee S[1]
[1]Seoul National University Bundang Hospital, Seongnam, South Korea; [2]Catholic St. Mary's International Hospital, Incheon, South Korea

Introduction and Objectives: Published reports on the outcomes after definitive primary treatments for intermediate-risk prostate cancer (PCa) suggest that significant heterogeneity may exist among intermediate-risk group. Thus, we sought to identify appropriate risk stratification system for intermediate-risk PCa.
Materials and Methods: Classifying patients according to National Comprehensive Cancer Network (NCCN) risk groups, we reviewed data of 1559 radical prostatectomy (RP) patients who were treated at our institution from 2006 to 2013. For our analyses, intermediate-risk PCa meeting at least one of two following factors were designated as unfavorable intermediate-risk disease: biopsy Gleason score ≥ 4 + 3 and/or multiple (≥ 2) intermediate-risk criteria present. All other intermediate-risk PCas were designated as favorable intermediate-risk disease. Postoperative outcomes including biochemical recurrence (BCR)-free survivals were calculated and compared via log-rank test and Cox proportional hazards model.
Results: In multivariable analysis, biopsy Gleason score ≥ 4 + 3 (p = 0.003) and multiple (≥ 2) intermediate-risk criteria (p = 0.005) were observed to be independent predictors of the risk of BCR amongst intermediate-risk group. Favorable intermediate-risk group showed a significantly higher 5-year BCR-free survival than unfavorable group (87.5% vs. 66.5%) (p < 0.001). Unfavorable intermediate-risk group showed significantly higher 5-year BCR-free survival than high-risk group (66.5% vs. 47.9%) (log rank, p < 0.001) while favorable intermediate-risk group demonstrated significantly lower 5-year BCR-free survival than low-risk group (87.5% vs. 93.9%) (log rank, p = 0.002).
Conclusions: A significant heterogeneity exists in biochemical outcomes of contemporary patients with intermediate-risk PCa who underwent definitive RP. According to biopsy Gleason score and number of intermediate-risk criteria present, intermediate-risk group should be stratified into favorable and unfavorable disease.

MP-12.11
Tertiary Gleason Grade as Prognostic Factor of Prostate Cancer Recurrence
Ognerubova I**, Cherniaev V**, Volkova M, Matveev V
Russian Cancer Research Center, Moscow, Russia

Introduction and Objectives: Tertiary Gleason grade (TGG) pattern in radical prostatectomy (RP) specimens is known to be associated with adverse pathology characteristics and a higher risk of biochemical recurrence (BCR). The aim of this study was to determine whether the TGG pattern in RP specimens can be used as a prognostic factor of BCR-free survival of patients undergoing RP.
Materials and Methods: We retrospectively reviewed medical records and histological specimens of 159 consecutive patients treated with RP at our institution. All patients did not receive any hormonal therapy. Each surgical

specimen was reviewed and assessed for the Gleason score (according to 2005 ISUPCC criteria) and the presence of TGG pattern. TGG was defined as the third most prevalent Gleason pattern if it was higher than the two predominant Gleason grades. Biochemical relapse was defined as an increase of PSA level higher than 0.2 ng /ml confirmed with at least two measurements.
Results: A presence of TGG in histological specimens was reported in 51 of 159 (32.1%) patients. In 34 cases (66.7%) TGG constituted ≤ 5% of the whole tumour volume, in 17 cases (33.3%) the volume was > 5% of tumour volume. The presence of TGG was statistically significantly associated with extracapsular extension, seminal vesicle invasion, lymph node invasion and positive surgical margins (p<0.05). The 5-year BCR–free survival rates for patients with TGG were 46.4±10.2% versus 76.6±5.2% when no tertiary Gleason grade was present in the specimens (log-rank test □<0.001).
Conclusion: Our findings confirm the statistically significant association of the presence of a TGG with adverse pathologic features and biochemical recurrence.

MP-12.12
Implication of Ultrasensitive Prostate-Specific Antigen Assay for Prediction of Biochemical Recurrence after Radical Prostatectomy
Ognerubova I[1], **Cherniaev V[2]**, Volkova M[3], Puddubnaya I[1], Matveev V[3]
[1]Russian Academy of Postgraduate Education, Moscow, Russia;[2]Russian Cancer Research Center, Moscow, Russia [3]N.N. Blokhin Cancer Research Center, Moscow, Russia

Introduction and Objectives: The role of post-operative ultrasensitive PSA level (USPSA) in identifying patients at high risk for biochemical recurrence (BCR) after radical prostatectomy (RP) is controversial but might have important implication for selection of candidates for adjuvant therapy. The aim of this study was to determine whether the prostate-specific antigen (PSA) nadir measured with an USPSA assay can be used as a prognostic factor of BCR following RP.
Materials and Methods: We retrospectively analyzed 136 patients who underwent RP at our institution and were followed with regular measurements of USPSA levels at 1, 3, 6, 9 and 12 months during the first year, once in 6 months during the second year and annually afterwards. Biochemical relapse was defined as PSA > 0.2 ng /ml confirmed with at least two measurements.
Results: Forty eight (35%) of 136 patients recurred during a median follow-up of 57 months. Median PSA nadir of patients without BCR was 0.005 ng/ml, while that of BCR group 0.08 ng/ml (□<0.001). Median time to achieve a USPSA nadir in BCR group was significantly shorter (median 7.5 weeks) than in the group without BCR (median 14 weeks) (□<0.001). The receiver operator characteristics (ROC) curve defined an optimal cut-off value for USPSA nadir of 0.02 ng/ml, showing a statistically significant difference in BCR after RP. All patients were stratified into two groups based on their USPSA nadir: Group 1, which consisted of patients whose PSA was ≤0.02 ng/ml (n=87), and Group 2, which consisted of patients whose PSA was >0.02 ng/ml (n=49). In the first group only 8 of 87 patients (9.2%) experienced BCR, whereas in the second - 40 of 49 patients (81.6%) recurred biochemically (□<0,001). Patients who achieved a USPSA nadir level ≤0.02 ng/ml had significantly greater BCR free survival (log-rank test p<0.001). Within the first 36 months after RP among patients whose PSA was ≤0.02 ng/ml, no case of BCR was registered and the 5-year BCR–free survival rates achieved 96.7±2.3%. The 3-year and 5-year BCR–free survival rates for patients with USPSA nadir >0.02 ng/ml were 58.2±7.3% and 32.8±7.1%. A multivariable Cox proportional hazards model showed that the USPSA nadir >0.02 ng/ml was a significant predictor of BCR (HR 11.77; 95% CI 5.49 – 25.23; p<0.001).
Conclusion: The PSA nadir measured with USPSA assay is a significant predictor of BCR of patients undergoing RP.

MP-12.13
Is Outcome following Radical Prostatectomy Determined by Race?
Nair R, Pai A, Kulkarni M, Campbell E, Perry M, Anderson C, Issa R
St. George's Hospital, London, UK

Introduction and Objectives: Racial variations in outcomes following radical prostatectomy (RP) have been attributed to socio-economic deprivation and genetic factors in Afro-Caribbean men from North America. Recurrence is more common, and oncological outcomes are poorer in this group. The last ten years however, has seen both improved imaging and biopsy techniques in the diagnosis and surveillance of prostate cancer. Despite these changes, it is unclear whether the racial variation in prostate cancer outcome still remains. We aim to evaluate disease outcomes in specific racial groups within a metropolitan UK population treated following RP within the National Health Service.
Materials and Methods: A prospective single-centre study of 599 patients undergoing RP for localised prostate cancer was performed over between July 2002 and February 2014. Men were divided into three ethnic groups: Asian (AS), Caucasian (CA) and Afro-Caribbean (AC), and clinical and pathological variables compared. Biochemical-recurrence free survival (BCR) (PSA>0.1ng/mL) rates and predictors of BCR were calculated.
Results: A total of 599 men underwent RP (CA: n=393, AC: n=148 and AS: n=58). There was no significant difference between patient age (mean, 62.4 years), follow-up (median, 49 months) or preoperative PSA (mean, 8.5ng/ml). AC-patients had a longer operative time (p=0.0038) and narrow measurable pelvic-inlets (P<0.0001). There were no significant differences in blood loss, tumour stage, histology, volume or margin status between groups. AC-men had significantly lower 5-year BCR-free survival (56.7%) than CA-men (73.1%) or AS-men (80.8%, p=0.005). On multivariate analysis, AC-race was an independent predictor of BCR.
Conclusion: In a national healthcare system, despite advances in prostate cancer detection, surveillance and treatment, being Afro-Caribbean is a significant predictor of BCR. Asian men have favourable outcomes, and this should be taken into consideration prior to treatment. These factors do not appear to be explained by histopathological factors. There remains an imperative need to map genetic and environmental mechanisms accounting for different outcomes in this population.

MP-12.14
Predicting Biochemical Recurrence following Radical Prostatectomy through Tissue Expression of the Insulin Receptor, IGF-1 Receptor and PTEN
Breen K, Fitzgerald N, Boyce S, O'Neill A, Fitzpatrick J, Watson W
UCD School of Medicine and Medical Science, University College Dublin, Dublin, Ireland

Introduction and Objectives: The insulin receptor (INSR) and IGF-1 receptor (IGF-1R) are key components of the Insulin-like Growth Factor (IGF) axis which has been implicated in prostate cancer development and progression through activation of downstream signaling mechanisms including PI3K and AKT. The tumour suppressor gene, PTEN, is a negative regulator of the PI3K pathway. Reduced/absent PTEN expression has been linked to lethal prostate cancer. We examined the expression of the INSR, IGF-1R and PTEN in radical prostatectomy tissue of patients who developed biochemical recurrence (BCR) post-surgery.
Materials and Methods: Tissue microarray (TMA) of 32 patients post-radical prostatectomy (16 = BCR, 16 = controls) was stained by immunohistochemistry for the INSR, IGF-1R and PTEN. The TMA was then scored by independent pathologists. The parametric independent samples *t*-test and non-parametric Mann Whitney U test were used to examine the statistical significance of differences in INSR, IGF1-R and PTEN expression between benign and malignant tissues, and Gleason

grade. Correlations between INSR, IGF1-R and PTEN were measured using Spearman's correlation coefficient. Odd ratio's (OR) were also estimated.
Results: INSR and IGF-1R expression was significantly increased in malignant compared to benign prostate tissue (p<0.001, p=0.002 respectively). There was no difference between either receptors expression across Gleason grades (p=0.482, p=0.391) or between patients with BCR versus non-BCR (p=0.929, p=0.289). There was a significant correlation between INSR and IGF-1R expression in both benign (correlation coefficient = 0.836, p = 0.0001) and malignant tissue (correlation coefficient = 0.436, p=0.002). There was a trend towards reduced PTEN expression in malignant tissue of BCR patients versus non-BCR patients (p=0.0942). The trend was strongest between Gleason grade 4 disease in BCR vs. non-BCR patients (p=0.0651). When we examined the interaction of PTEN with the IGF-1R, we found patients with high IGF-1R + low PTEN were 3.5 times more likely to experience BCR versus patients with low IGF-1R and high PTEN (OR 3.5).
Conclusions: Low PTEN is associated with BCR and this association is strongly modified by high IGF-1R expression. Measurement of these proteins could help to inform appropriate patient selection for post-operative adjuvant therapy and prevent BCR.

MP-12.15
External Validation of the 2007 and 2013 Updated Partin Tables in a Cohort of Irish Men
Breen K[1], Boyce S[1], Boyd Lyons A[1], Lundon D[1], Fitzpatrick J[1], Murphy B[2], Watson W[1]
[1]UCD School of Medicine and Medical Science, University College Dublin, Dublin, Ireland; [2]UCD School of Mathematical Sciences, University College Dublin, Dublin, Ireland

Introduction and Objectives: Our aims were to perform the first external validation of the 2013 Partin tables and to compare the 2007 and 2013 Partin tables in a cohort of Irish men.
Materials and Methods: Prospective data collection from 795 men was performed through the Irish Prostate Cancer Research Consortium; those for whom full data was not available were excluded resulting in 414 consecutive cases available for statistical analysis. The predictive accuracy of the 2013 and 2007 Partin tables were assessed by means of receiver operating characteristic (ROC) curves and area under the curve (AUC) values to measure discriminate ability, calibration curves to measure calibration and decision curve analysis to measure clinical benefit.
Results: In our cohort, the rates of organ confined (OC) disease, extracapsular extension (ECE), seminal vesicle invasion (SVI) and lymph node involvement (LNI) respectively were 73%, 17%, 7% and 3% respectively. AUC values for OC, ECE, SVI and LNI were 0.669, 0.592, 0.695 and 0.795 respectively for the 2007 Partin tables and 0.668, 0.600, 0.688 and 0.811 respectively for the 2013 Partin tables. Both the SVI and LNI predictions from the 2007 and 2013 Partin tables are well calibrated.
Conclusion: The 2013 and 2007 Partin tables cannot accurately predict OC, ECE and SVI in Irish men and should not be used for this purpose. However, the 2013 Partin tables can accurately predict LNI (AUC = 0.811 - 0.978), indicating that the 2013 Tables represent a useful clinical tool to inform decision-making regarding pelvic lymphadenectomy at radical prostatectomy. The 2013 Partin tables are superior to the 2007 tables for the prediction of LNI in an Irish population, and therefore the 2013 Tables should be preferred by clinicians.

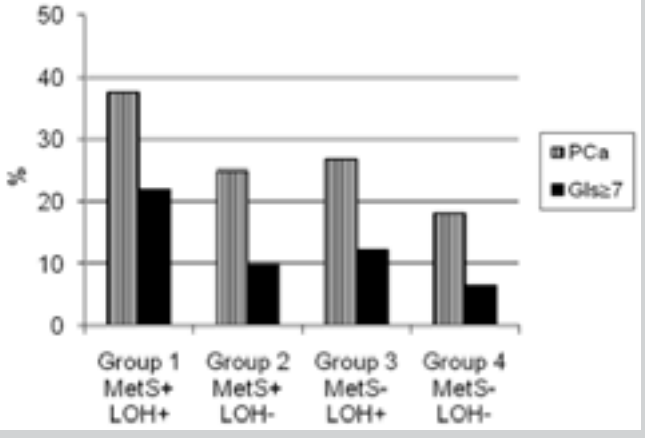
MP-12.16
The Relationship between Prostate Cancer, Presence of Metabolic Syndrome and Late Onset Hypogonadism
Kayali M**, Balci M**, Aslan Y, Bilgin O, Guzel O, Tuncel A, Atan A
Ankara Numune Training and Research Hospital, Ankara, Turkey

Introduction and Objectives: We aimed to investigate the relationship between Prostate cancer (PCa), presence of Metabolic Syndrome (MetS) and Late Onset Hypogonadism (LOH).
Materials and Methods: One hundred and seventy patients who underwent transrectal ultrasonography guided prostate needle biopsy were included in this study. For the diagnosis of MetS, AHA/NHLBI criteria were used. For the diagnosis of LOH, Androgen Deficiency in Aging Males questionnaire and serum total and free testosterone levels were used. Patients were divided into four groups according to the presence of MetS and LOH; Group 1 MetS and LOH, Group 2 with MetS but without LOH, Group 3 with LOH but without MetS and Group 4 with neither MetS nor LOH.
Results: The mean age of the patients was 63.7±7.2 years. In Group 1, 12 patients (37.5%); in Group 2, 5 patients (25%); in Group 3, 11 patients (26.8%) and in Group 4, 14 patients (18.2%) were diagnosed as PCa. Aggressive PCa was determined in 7 patients in Group 1 (21.9%), 2 patients in Group 2 (10%), 5 patients in Group 3 (12.2%) and 5 patients in Group 4 (6.5%). The PCa and aggressive PCa were detected at a higher rate in patients with MetS alone, independent from the presence of LOH (32.7% vs. 21.2%, p=0.109 and 17.3% vs. 8.5%, p=0.092). Similarly, the PCa and aggressive PCa were detected at a higher rate in patients with LOH alone, independent from the presence of MetS (31.5% vs. 19.6% p=0.074 and 16.4% vs. 7.2%, p=0.059). There was a statistically significant difference only in between Groups 1 and 4 in terms of detection of PCa (37.5% vs. 18.2%, p=0.031) and aggressive PCa (21.9% vs. 6.5%, p=0.019) (Figure 1).
Conclusions: These results highlight the fact that co-existence of MetS and LOH increases the risk of PCa and aggressive PCa.

MP-12.17
Variations in Prostate Biopsy Practice between West and East: Results of Two National Surveys
Wang W[1], Philpott-Howard J[2], Nemade H[2], Sheehan S[2]**, Thompson P**[3]
[1]Beijing Tongren Hospital, Capital Medical University, Beijing, China; [2]King's College, London, UK; [3]King's College Hospital, King's College, London, UK

Introduction and Objectives: To our knowledge, this is the first international survey to discover the variation in biopsy practice and policy of antimicrobial prophylaxis for prostate biopsies between west and east.
Materials and Methods: A questionnaire of

MP-12.16, Figure 1. PCa and Aggressive PCa Ratio of the Groups



urological practice in relation to prostate biopsy was constructed, using the website *SurveyMonkey®*. A link to the survey was e-mailed to members of the British Association of Urological Surgeons (BAUS) and the Chinese Urological Association (CUA), with the permission and co-operation of the Societies. Members were invited to complete the survey on-line.

Results: The proportion of urologists who responded was 189 out of 1199 (16%) in the UK and 2168/3200 (68%) in China. For the UK and China surveys respectively: 150/186 (81%) and 1963/2168 (91%) performed transrectal prostate biopsies (TRPB); 64 out of 186 (34%) and 205 out of 2168 (10%) performed transperineal prostate biopsies (TPPB). The commonest antimicrobial prophylaxis regimens were ciprofloxacin & metronidazole or co-amoxiclav & gentamicin (UK) and ciprofloxacin or levofloxacin, and cefotiam (China). The most common antibiotic duration is 1-3 days in both UK and China. A total of 12% urologists in UK recommend that antibiotic policy should depend on pre-biopsy rectal swab culture results while only 4% urologists in China use pre-biopsy rectal culture. The results of the preference to the biopsy route are summarized as Table 1.

Conclusion: This survey indicates that there is a wide variety of opinions and practice in prostate biopsies among urologists who practice in the UK and China. Despite the fact that most urologists agreed that the sepsis risk after transperineal route was low, most urologist still preferred transrectal route. Further consensus, research and debate on the antibiotic policy and biopsy route are necessary.

MP-12.17, Table 1.

Respondents -		**UK**	**China**
Strongly agreed or agreed that:	in my experience sepsis is a significant problem post-transrectal biopsy	107/186 (60%)	889/2168 (41%)
	in my experience sepsis is a significant problem post-transperineal biopsy	15/183 (8%)	65/2168 (3%)
	transrectal biopsy should be routinely replaced by transperineal biopsy	28/189 (15%)	195/2168 (9%)
When consenting for transrectal biopsy, do you believe there is a medico-legal responsibility to offer transperineal biopsy as an alternative?		No 126/189 (67%)	No 715/2168 (33%)
If advised to have a prostate biopsy, would you personally prefer to have a:	transperineal biopsy	50/181 (28%)	932/2168 (43%)
	transrectal biopsy	72/181 (40%)	911/2168 (42%)
	no preference	59/181 (32%)	325/2168 (15%)

Moderated Poster Session 13
Minimally Invasive Surgery
Tuesday, October 14
1300-1430

MP-13.01
Arterial Renal Embolization: A Single Center Study

Thorlund M[1], Wennevik G[1], Andersen M[1], Andersen P[2,3], Lund L[1,3]
[1]Dept. of Urology, Odense University Hospital, Odense, Denmark; [2]Dept. of Radiology, Odense University Hospital, Odense, Denmark; [3]Clinical Institute, University of Southern Denmark, Odense, Denmark

Introduction and Objectives: Transcatheter arterial embolization (TAE) is an effective minimal invasive treatment modality, which is associated with low morbidity and mortality. TAE can be performed in patients with low performance status. Furthermore, TAE is well established in endovascular treatment of urological vascular emergencies such as iatrogenic, traumatic or spontaneously with or without underlying pathology. The typical patient undergoing TAE is not well described. This descriptive study aim to present the demographics of patients who underwent renal embolization performed elective or acute in a single center study with 24-hour available embolization.
Materials and Methods: All patients who underwent TAE at Odense University Hospital from October 2010 to July 2013 were identified retrospectively. Patients' medical records were examined to determine indication for treatment, procedural details and complications. Patients were divided in to 4 groups; renal cancer, trauma, angiomyolipoma (AML) and others. When elective TEA was performed, selective kidney function was determined by renography. Computed tomography with intravenous contrast confirmed the embolization diagnosis in all cases. When there was indication for embolization renal angiography was performed and followed by embolization if possible. The procedure was performed in local analgesia via the common femoral artery and as super-selective as possible to save as many nephrons as possible. Most common embolization material was coils and vascular plugs but in some cases of coagulopathy or patients on anticoagulation treatment, liquid embolization materials were used.
Results: A total of 35 patients were included, mean age 64 years (range 17-95), 8 females and 27 males. Fifteen patients underwent embolization because of renal cancer; 9 elective and 6 acute. Seven traumas were embolized. Five patients with AML, 3 acute and 2 elective, underwent embolization. Finally, 8 patients were treated because of spontaneous bleeding, AV-malformation and aneurisms (3 elective, 5 acute). The post-embolization syndrome occurred in 22 patients (63%) and 6 patients (17%) were re-embolized. One patient had persistent infection and one patient died (3%). Post-embolization nephrectomy was performed in four patients (11%) because of ongoing bleeding.
Conclusion: The most common reason for TAE was renal cancer. TAE is a safe modality with few complications both as an acute or elective procedure.

MP-13.02
Risk Factors and Management of Unruptured Renal Artery Pseudoaneurysms Immediately after Minimally Invasive Partial Nephrectomy

Omae K, Kondo T, Fukuda H, Yoshida K, Takagi T, Iizuka J, Kobayashi H, Hashimoto Y, Tanabe K
Tokyo Women's Medical University, Tokyo, Japan

Introduction and Objectives: Renal artery pseudoaneurysm (RAP) after partial nephrectomy (PN) is a rare complication and its presentation is often delayed, which could lead to life-threatening bleeding. Its incidence has been reported to be 1 to 5%, however there are few reports of the risk factors associated with the development of RAP after PN. We have been performing 3-dimensional computed tomography arteriography (CTA) in the early postoperative period to screen for complications after PN since January 2012. Our objectives are to report the risk factors and natural history of unruptured RAP detected by the CTA screening after minimally invasive partial nephrectomy (MIPN), including laparoscopic and robotic PN.
Materials and Methods: We retrospectively reviewed the medical records and surgical videos of 101 consecutive patients who underwent MIPN followed by the CTA screening on the 3rd or 4th postoperative day in our hospital between February 2012 and November 2013. Two radiologists reviewed the CTA images to diagnose RAP. Patient characteristics, tumor specifics and surgical data were analyzed.
Results: Screening CTA revealed asymptomatic unruptured RAPs in 22 patients (21.7%) after MIPN. Patients who developed RAPs had larger resected tumors (p=0.02) and more frequent intraoperative renal sinus exposure (p<0.01) than patients who did not develop RAPs. Multivariate analyses identified intraoperative renal sinus exposure as the only independent risk factor of the development of RAP (renal sinus exposure: OR=4.99, 95%CI 1.11-24.0, p=0.03).
Conclusions: The rate of development of asymptomatic unruptured RAP detected by the CTA screening in the early postoperative period after MIPN was higher than that of development of postoperative ruptured RAP identified in our hospital before 2012 and reported in previous studies. Most of the RAPs immediately after MIPN might resolve spontaneously with no intervention. Avoidance of intraoperative deep excision into the renal sinus could be the most important factor in minimizing the development of RAP after MIPN.

MP-13.03
Accurate Multi-Parametric MRI Monitoring of Focal Therapy with Compensation for Local Deformation

Orczyk C[1,2,3], Rusinek H[4], Rosenkrantz A[4], Valable S[2], Mikheev A[4], Villers A[5,6], Taneja S[7]
[1]Dept. of Urology, University Hospital of Caen, Caen, France; [2]CERVOxy, ISTCT, Caen, France; [3]New York University Medical Center, New York, USA; [4]Dept. of Radiology, New York University Medical Center, New York, USA; [5]Dept. of Urology, University Hospital of Lille, Lille, France; [6]University of Lille Nord de France, Lille, France; [7]Dept. of Urology, Division of Urologic Oncology, New York University Medical Center, New York, USA

Introduction and Objectives: Focal therapy (FT) is an emerging approach for treatment of localized prostate cancer. Multi-parametric (mp) MRI demonstrated capability to monitor the effect of FT procedures. At time of follow-up, the ablated zone (AZ) clearly undergoes local shrinkage. Accurate definition of AZ at follow-up will improve FT evaluation and oncologic safety. We analyzed the volume and shape changes of the gland between pre and post FT MRI by developing a 3D coregistration method to compensate for deformation of the gland in response to FT.
Materials and Methods: We studied 10 patients who underwent FT (interstitial laser ablation and photodynamic therapy) within IRB approved trials. All patients underwent preoperative, early control and late postoperative 3T MRI which included T2, T1, diffusion and perfusion weighted sequences. We have developed image registration software to analyze, transfer and model shape changes using a deformable and a rigid body transformation. Alignment between pre- and post-op images of AZ was assessed using the overlap index or Dice index (Di) and the maximum boundary distance, or Hausdorff distance (HD). Correction for deformation was measured using the HD normalized by the volume to transform in mm/cc and automated feature of the software.
Results: There was a significant volume decrease D of the gland that averaged 6.49 cc (p=0.017) between preoperative and postoperative gland. D was directly correlated (ρ=0.738, p=0.014) with the ablated volume (7.88, p=0.04). We successfully co registered pre operative to post operative MRI in each cases. There was a significant increase D computed with deformable versus rigid transform. Deformable

model achieved a significantly more accurate match of pre- vs. post-FT AZ with deformable (Di=0.88, HD=1.98 mm) vs. rigid transformation (Di=0.95 HD=3.83mm). The deformable approach also yielded a higher (p=0.019) correction of deformation (0.72mm/cc) compared to the rigid model (0.15mm/cc).
Conclusion: We described a novel method that compensate in 3D for the local deformation induced by FT. The method achieves better than 2mm of accuracy of aligning pre and post FT MRI. These findings could be implemented in clinical trials for follow-up evaluation and oncologic safety while incorporated in biopsy platforms.

MP-13.04
Point of Technique: Reducing Wrong Side Errors for Endourology Procedures
Alleemudder A, Mehta S
Southend University Hospital, Westcliff-on-Sea, UK

Introduction and Objectives: Upper tract endourological procedures form a key part of the workload in Urology. The potential for wrong side surgery exists despite the adoption of universal precautions such as the WHO checklist. To reduce such risks even further, we describe a novel simple technique used when inserting a double J stent or performing upper tract endourological procedures.
Materials and Methods: We use an adhesive Skintact® ECG electrode (Leonhard Lang GmbH, Austria) placed in the corresponding groin on the side of the intended procedure in full view of the whole surgical team at the time of the surgical checklist. This provides a visual aid on the fluoroscopy image to ensure the correct side is being performed, especially when the marked side is often obscured by the surgical drape.
Results: Use of this technique is an invaluable tool in the prevention of wrong side surgery during upper tract endoscopic procedures.
Conclusion: With an estimated 1 in 10 patients experiencing an adverse event during their hospital stay, patient safety and implementation of measures to prevent wrong side surgery should be paramount. The negative consequences upon the patient and the surgeon should not be underestimated and any intervention or point of technique which will help reduce medical errors should be welcomed.

MP-13.05
Laparoscopic Nephrectomy for Adult Polycystic Kidney Disease: Techniques, Complications and a Novel Minimally Invasive Approach
Williamson A[1], Paterson S[1], Erolin C[1], Sweeney C[2], Townell N[2], Nabi G[1]
[1]University of Dundee, Dundee, Scotland, UK; [2]NHS Tayside, Dundee, Scotland, UK

Introduction and Objectives: Indications for laparoscopic renal surgery are increasing, however benefits in APKD remain uncertain. In cases where kidneys are massively enlarged, laparoscopic approach can be challenging. The data from studies reporting on resection in APKD has not been synthesised. In Tayside a novel technique is used, involving the use of intra-operative ultrasound to assist with cyst puncture for kidney debulking. We aimed to synthesise results from observational studies including a Tayside cohort and assess safety, feasibility and complications.
Materials and Methods: We conducted a review of the published literature reporting on laparoscopic nephrectomy in APKD between 1991 and 2013. The criteria from the 'Strengthening the Reporting of Observational Studies in Epidemiology' (STROBE) study were used to assess the quality of reported literature. Unpublished local data including description of a novel retroperitoneoscopic technique was added to the published evidence.
Results: Three prospective and twenty-one retrospective studies of low to modest quality (according to the STROBE checklist) were identified, reporting on 327 patients. Transperitoneal approach was the most commonly used. Mean mass of affected kidneys was 1,186g (range 132g – 7,200g). The duration of hospital stay ranged from 1.5 to 12 days; mean 5 days. Operative time ranged from 90-568 minutes, with 13% of patients requiring blood transfusion. There were 26 intra-operative complications and 80 post-operative complications, a rate of 8% and 24% respectively. A total of 17 cases (5%) were converted to open technique. None of the included studies reported any mortality.
Conclusion: Laparoscopic approach to excision of APKD is safe and feasible, but complication rate is high. Quality of included studies was poor. Further research is required to clarify the generalisability and validity of different approaches, including greater reporting of patient outcomes with laparoscopic techniques. A modified retroperitoneoscopic technique described in this study could be offered to patients. Higher quality research is required to establish the generalisability of the approaches including standardisation of approach.

MP-13.06
Keep Your Head: Three-Port Laparoscopic Radical Prostatectomy Should Be a More Cost-Effective Therapy in Developing Countries like China
Xu B, Luo C, Zhang Q, Jin J
Peking University First Hospital, Beijing, China

Introduction and Objectives: To introduce a more cost-effective therapy of three-port laparoscopic radical prostatectomy (LRP) for prostate cancer (PCa) in developing countries like China, and compare its results with the conventional four-five port LRP of ours and other minimally invasive techniques performed by others.
Materials and Methods: We retrospectively reviewed the data of 112 patients with PCa receiving LRP between January 2011 and December 2013 at our institution. They were divided into Group A (three-port LRP, 24 patients) and Group B (conventional four-five port LRP, 88 patients). Both groups were compared by the perioperative parameters. A learning curve was also analyzed by dividing these 24 patients into the early and late stage.
Results: The two groups were comparable with regard to all of the preoperative characteristics. All three-port LRP were performed successfully. There was no conversion to open radical prostatectomy (ORP) or four-five port LRP. In Group A, the mean operative time (OT) was 89.3min, the mean estimated blood loss (EBL) was 132.5ml, the mean hospitalization was 4.2d, and 29.2% of the prostate specimen margins (PSM) were positive. In Group B, the figures were 100.6min, 216.7ml, 5.2d respectively and 33.0% of PSM were positive. The differences of OT and EBL were statistically significant between both groups ($p<0.05$). After undergoing the early stage of a learning curve in three-port LRP, the OT and EBL could be decreased evidently.
Conclusions: Three-port LRP is a modified technique, which exhibits superior intraoperative advantages to the conventional LRP. Simultaneously, by making a comparison between three-port LRP with the other minimally invasive techniques, due to its lower cost and less EBL with a shorter learning curve and OT, it should be recommended that three-port LRP is a more cost-effective therapy in developing countries like China. Please keep your head when faced to the hot topic!

MP-13.07
Laparoendoscopic Single-Site (LESS) for Treatment of Different Urologic Pathologies: Single-Centre Single-Surgeon Experience
Abdel-Karim A, Moussa A, Elmissery M, Abolfotoh A, Elhenawy I, Elsalmy S
Alexandria University, Alexandria, Egypt

Introduction and Objectives: LESS is an evolving minimally invasive treatment option in urology. However, LESS needs a steep learning curve and advanced laparoscopic background. We present our single-centre single-surgeon experience of LESS for treatment of different urologic pathologies.
Materials and Methods: Between January 2010 and June 2013, 114 consecutive patients had LESS by a single surgeon with advanced laparoscopic skills. LESS procedures included simple nephrectomy (n=18), radical nephrectomy (n=12) nephroureterectomy (6), pyeloplasty

(n=13), excision of renal cyst (13), ureterolithotomy (8), orchiopexy (n=18), varicocelectomy (n=8), repair of vesicovaginal fistula (VVF) (n=8), repair of vesicouterine fistula (n=5), distal ureterectomy (n=2), adrenalectomy (n=1), sacrocolpopexy (n=1) and bladder diverticulectomy (n=1). Data was collected in a standard data sheet and all procedures were approved by the Ethical Care Committee of our institute.
Results: Mean age of patients was 28.6 years while mean BMI was 28.5. Of all the patients, 25.4% had previous abdominal surgery. Upper urinary tract LESS procedures were done in 60% of the patients. Both transperitoneal and retroperitoneal LESS was done in 93% and 7% of the patients respectively. Intraoperative and postoperative complications were reported in 2.7% (Clavien Grade II) and 5.4% (Calvein Grade II 3.6% and IIIa 1.8%) of the patients respectively. All intraoperative complications were reported during the first 30 LESS procedures. Mean blood loss was 69 c.c., while mean operative time was 120 minutes. Adding of one 5-mm extraport, conversion to conventional laparoscopy and conversion to open surgery was reported in 14, 0.9, 0.9% of the cases, respectively. Mean postoperative hospital stay was 1.4 days, while mean Visual Analogue Pain Score at discharge was 1.2. On multivariate analysis, factors significantly associated with longer operative time were history of prior abdominal surgery and high BMI, while reconstructive and pelvic LESS procedures were significantly associated with a higher risk of adding an extraport. At a mean follow-up of 21.7 months, all patients with reconstructive LESS procedures but one (with complex VVF) were successful.
Conclusions: In experienced hands, LESS is technically feasible for both ablative and reconstructive urologic applications. Although LESS is still technically difficult, both conversion and complications rates are low.

MP-13.08
Laparoendoscopic Single-Site Surgery (LESS) and Conventional Laparoscopy for Treatment of Different Upper Urinary Tract Pathologies: Outcome of Prospective Comparative Study
Abdel-Karim A[1], Fayz A[2], Elashry O[2]
[1]Alexandria University, Alexandria, Egypt; [2]Tanta University, Tanta, Egypt

Introduction and Objectives: There are increasing reports in the literature about role of LESS as an alternative to conventional laparoscopy (CL) for treatment of different urologic pathologies. However, most of these reports are retrospective case series. We present a prospective comparative study between LESS and CL for treatment of different upper urinary tract pathologies.
Materials and Methods: This is a prospective study that included consecutive patients with different upper urinary tract pathologies who had LESS and CL at both Alexandria and Tanta universities from December 2011 to June 2013. Procedures were done by two experienced laparoscopists. Exclusion criteria included absolute contraindications of laparoscopy and children less than 3 years. Data was independently collected by two persons in a standard data sheet. All procedures were approved by the Ethical Care Committee at both institutes.
Results: Included in this study were 58 patients (30 patients had 31 LESS procedures and 28 patients had CL). Indications included pyeloplasty (LESS=10, CL=4), simple nephrectomy (LESS=7, CL=6), excision of renal cyst (LESS=7, CL=7; one patient had bilateral LESS renal cysts excision), nephroureterectomy (LESS=2, CL=0), ureterolithotomy (LESS=2, CL=5), radical nephrectomy (LESS=1, CL=1), adrenalectomy (LESS=1, CL=1), ureterectomy (LESS=1, CL=0), pyelolithotomy (LESS=0, CL=3), partial nephrectomy (LESS=0, CL=1). Mean age was significantly less and BMI was significantly higher in LESS group. Mean operative time and blood loss was significantly less in LESS group. Intraoperative complications were reported in 12.6% and 3.3% of CL and LESS groups, respectively. In 54.2, 37.5 and 8.3% of patients in CL group 3, 4 and 5 ports (5-15mm), were used respectively, while 5-mm extraport was added in 3.6% of LESS group. Conversion to open was reported in 8.3% and 3.3% of CL and LESS groups respectively, while none was converted to CL in LESS group. Postoperative hospital stay, analgesic requirement and visual analogue pain scale was significantly less in LESS group. Patient satisfaction regarding postoperative scar was higher in LESS group.
Conclusions: LESS offers a safe and efficient alternative to CL for treatment of different upper urinary tract pathologies, with reduced pain, faster recovery, less complications and better cosmetic outcome.

MP-13.09
Major Vascular Injury in Laparoscopic Urology: Single Center Experience in 5347 Cases
Simforoosh N, Basiri A, Ziaee S, Tabibi A, Nouralizadeh A, Radfar M, Sarhangnejad R, Mirsadeghi A
Shahid Labbafinejad Hospital, Urology and Nephrology Research Center, Shahid Beheshti Medical Sciences University, Tehran, Iran

Introduction and Objectives: Major vascular injury is the most devastating complication of laparoscopy, occurring most commonly during the laparoscopic entry phase. Our goal was to report our experience with major vascular injury during laparoscopic entry with closed- and open-access techniques in urologic procedures.
Materials and Methods: All 5347 patients who underwent laparoscopic urologic procedures from 1996 to 2011 at our hospital were included in the study. Entry was carried out using either the closed Veress needle technique or the modified open Hasson technique. Patients' charts were reviewed retrospectively investigating access-related major vascular injury.
Results: The closed technique was used in the first 474 operations and the open technique in the remaining 4873 cases. We had three cases with major vascular injury in our patients. They were three men scheduled for nephrectomy without any history of previous surgery. All injuries occurred in the closed-access group during the setup phase with insertion of the first trocar. Injury location was the abdominal aorta in two patients and the external iliac vein in one patient. Management was performed after conversion to open surgery, control of bleeding, and repair of the injured vessel.
Conclusions: To our knowledge, this is the first report of laparoscopic entry in urologic procedures. Given the high morbidity and mortality of major vascular injury, its clinically higher incidence in laparoscopic urologic procedures with the closed-access technique leads us to suggest using the open technique for the entry phase of laparoscopy. Using the open-access technique may decrease laparophobia and encourage a higher number of urologists to enter the laparoscopy field.

MP-13.10
Transvaginal Natural Orifice Translumenal Endoscopic Surgery (NOTES) in Urology: One Single Centre Experience
Zou X, Zhang G, Yuan Y, Xiao R, Wu G, Wang X, Xue Y
First Affiliated Hospital of Gannan Medical University, Ganzhou, China

Introduction and Objectives: The feasibility of transvaginal natural orifice translumenal endoscopic surgery (NOTES) has already been demonstrated in urology. However, the experience is limited. We aimed to describe our experience with the transvaginal NOTES in female patients, and to evaluate its feasibility, safety and efficacy.
Materials and Methods: Between May 2010 and December 2013, 172 female patients with a mean age of 36.3 (range 28 to 65) years and a median body mass index of 26.2 (range 18.2 to 29.8) kg/m^2, were subjected to transvaginal NOTES in our center. After induction of general anesthesia, the patients were positioned in lithotomy with ipsilateral lumbar at 60° angle to the floor. In transvaginal NOTES-assisted laparoscopic procedures, a 5-mm trocar and a 10-mm trocar were inserted in the umbilical edge for conventional operating apparatus. A 5-mm or 10-mm trocar was inserted in the posterior vaginal fornix for a 5-mm flexible-tip

0° or 10-mm 30° laparoscope. In pure transvaginal NOTES procedures, a 30-mm incision was made at the posterior vaginal fornix, and a 5mm trocar was introduced into the pelvic cavity guided by a 5-mm forceps. A 5-mm flexible-tip 0° laparoscope was inserted into the pelvic cavity confirming no rectal injury. Then a Zou-Port was introduced at the posterior vaginal fornix. Dissection was performed according to the method of the standard laparoscopy. The intact specimen was extracted transvaginally.
Results: Transvaginal NOTES was successfully completed in 172 patients. One patients required conversion to suprapubic-assisted laparoendoscopic single-site surgery because of the rectal injury in pure transvaginal NOTES nephrecomy. Two patients underwent open conversion because of the injury of inferior vena cava (N=1) and the injury of spleen (N=1) during the dissection. The various transvaginal NOTES-assisted laparoscopic procedures performed included adrenalectomy (N=21), nephrectomy (N=124; simple 101, radical 23), nephroureterectomy (N=4), nephron sparing surgery (N=1), and heminephroureterctomy for duplex kidney (N=1). The various pure transvaginal NOTES procedures performed included renal cyst excision (N=5), nephrectomy (N=16; simple 15, radical 1), The mean operative time was 123, 116, 183, 188, and 87 minutes, and estimated blood loss was 162, 94, 137, 175, and 26 ml for transvaginal NOTES-assisted nephrectomy, transvaginal NOTES-assisted adrenalectomy, transvaginal NOTES-assisted nephroureterectomy, pure transvaginal NOTES nephrectomy, and pure NOTES transvaginal renal cyst excision respectively. The mean follow-up of 23.8 (range 2 to 45) months showed hidden umbilicus scar. The umbilical scar of each patient was hidden and difficult to find. The incision in the vagina healed well. No infection in the abdominal or pelvic cavity or celiocele occurred.
Conclusion: Transvaginal NOTES is feasible, safe and effective. It provides a good cosmetic outcome. However, existing instruments need improving for the development of transvaginal NOTES.

MP-13.11
Pure Transurethral Natural Orifice Transluminal Endoscopic Surgery (NOTES) for Fenestration and Drainage Treatment of Renal Cyst: Report of Eight Cases
Zhang G, Xu H, Yang J, Liu M, Xu R**, Zou X**
First Affiliated Hospital of Gannan Medical University, Ganzhou, China

Introduction and Objectives: To describe the initial clinical experience of pure transurethral NOTES for fenestration and drainage treatment of renal cyst, and evaluate its feasibility and safety.
Materials and Methods: From May 2012 to August 2013, five female patients and three male patients with renal cyst underwent pure transurethral NOTES for fenestration and drainage treatment. The median age was 29.2 (range 22 to 42) years. In this group, 3 renal cysts were on the right side and 5 on the left. All cases were confirmed by B ultrasound, CT scan and IVU. The median diameter of renal cyst was 6.3 (range 5.2 to 7.2) cm. After induction of general anesthesia, flexible ureter scope was transurethrally introduced into renal collect system. Renal cyst was found by B ultrasound guide when necessary. A crisscross incision was cut by Holmium laser to 1.5~2.0cm, and a 7F double J stent was positioned with the proximal end coiled in the cyst cavity, which was removed after 4 weeks.
Results: All procedures were successfully completed. Three cysts were found by flexible ureter scope and the others were found by B ultrasound guide. The median operation time was 55 (range 30 to 125) min. There were no intraoperative or postoperative complications. The diameter of cyst decreased at least 1/2 during follow-up (3 to 15 months).
Conclusion: Pure transurethral NOTES for fenestration and drainage treatment of renal cyst is safe, feasible, minimal invasive and cosmetic. It is worth selecting the method to treat endogenous renal cyst.

MP-13.12
Defining a Learning Curve from Simple to Complex: Adopting Tumour Nephrometry Scores during the First One Hundred Robot Assisted Partial Nephrectomies
Nair R, Pai A, Macarthur R, Tsavalas P, Issa R, Patel H, Anderson C
St. George's Hospital, London, UK

Introduction and Objectives: Present learning curve data for robot-assisted partial-nephrectomy (RA-PN) has reflected on achieving acceptable warm ischaemic (WIT) and console times (CT). Development of modular training however, must incorporate tumour complexity. We critically evaluate Pre-operative Aspects and Dimensions Used for an Anatomical (PADUA) nephrometry scores against learning curve parameters.
Materials and Methods: A prospective study of 100 consecutive patients undergoing RA-PN was performed from August 2008 to February 2014. Individual PADUA nephrometry scores (range 6-12) were evaluated against learning curve parameters and Clavian-Dindo complications (CDC).
Results: Twenty consecutive cases were required to achieve a WIT of less than twenty minutes and ten cases to achieve a CT of less than 120 minutes. These cases demonstrated PADUA scores of less than or equal to eight (PADUA ≤8). The first attempted PADUA score-9 was case 23. When comparing individual PADUA scores, against WIT, CT and CDC, there were statistical differences beyond PADUA score-8. A further five PADUA ≥8 cases (case-number thirty-six) were required to achieve a WIT of less than twenty minutes. An extra ten PADUA ≥8 cases (case number 45) were required to achieve a CT of less than 120 minutes with no significant change in CDC. Between individual PADUA scores, there were no significant differences in blood loss, CDC, positive surgical margins or pre-and post-operative estimated glomerular filtration rate.
Conclusion: Nephrometry scoring creates opportunity for RA-PN modular training by providing an objective parameter of difficulty. Only tumours with PADUA scores of less than or equal to eight should be attempted during the first twenty case learning curve.

MP-13.13
Is Robotic Partial Nephrectomy Safe for T1b Tumours? A Comparison of the Functional and Oncological Outcomes for T1a and T1b Tumours at a Single Centre
Kadirvelarasan A, Roman A, Puglisi M, Cozzi G, Brown M, Challacombe B
Guy's and St Thomas' NHS Trust, London, UK

Introduction and Objectives: Partial nephrectomy remains the gold standard in the definitive treatment of T1a renal tumours, with robotic partial nephrectomy (RPN) gaining popularity. To date, only a handful of retrospective studies explore the feasibility of RPN for T1b tumours. We assessed whether outcomes achieved using RPN in T1a tumours could be successfully reproduced in T1b tumours.
Materials and Methods: Using a prospective database of 116 elective cases, the peri-operative, oncological, and functional outcomes of 95 T1a tumours were compared with 21 T1b tumours including a single T2a tumour.
Results: Mean age was 55.9 years (T1a) and 55.3 years (T1b), mean tumour size 2.59 cm vs. 5.10 cm and mean PADUA scores 7.39 (T1a) vs. 9.08 (T1b) ($p<0.01$). There were no significant differences in operative times, 179 mins (T1a) vs. 192 mins (T1b), warm ischaemic times (18.0 vs. 19.8 mins) or hospital stay (3.5 days and 3.4 days). Estimated blood loss was significantly decreased in the T1a group (147 mls vs. 256 mls), with no difference in subsequent haemoglobin drop (1.44 vs. 1.45 g/dl). There were 2 positive margins early in the T1a group but no radiological recurrences at mean 16 months. There was 1 conversion to radical nephrectomy in the T1a group but no transfusions or open conversions. Both groups had 1 Clavien grade IIIa complication (angioembolisation) with 1 Clavien IIIb (ureteric stent) in the T1a group. Serum creatinine rose by 5.18 mol/l (T1a) and 12.5 mmol/l (T1b) (NS). 65/95 T1a's and 16/21 T1b's were performed for malignancy.

Conclusion: In the elective setting RPN can be performed safely on carefully selected T1b tumours to achieve equivalent oncological and functional results to those seen with T1a tumours, therefore potentially extending indications for RPN. It is possible the advantages offered by the Da Vinci Surgical system may overcome the limitations previously posed by the larger T1b tumours with both OPN and LPN.

MP-13.14

Comparison of Peri-Operative and Pathological Outcomes for Open and Robotic Assisted Laparoscopic Prostatectomy during Early Stages of Surgeon's Learning Curve for Both the Procedures

Nandwani G, Chahal R, Hanchanale V, Singh R, Addla S
Bradford Teaching Hospital NHS Trust, Bradford, UK

Introduction and Objectives: Robotic assisted laparoscopic prostatectomy (RALP) has become the current standard of care for prostatectomy. The evidence has accrued from high volume centres performed by experienced surgeons who have plateaued their surgical learning curve. We assessed the outcomes of RALP and open prostatectomy performed by surgeons relatively early in their surgical learning curve.
Materials and Methods: We retrospectively compared the first 150 consecutive cases of RALP with similar number of open prostatectomies carried out by surgeons at our institute who all were relatively new to independently performing both these procedures.
Results: The preoperative patient characteristics were evenly matched between both the cohorts (Table 1). However, patients in the open cohort had a higher incidence of Gleason 7 or more. There was a higher proportion of T3 disease in the open cohort compared to RALP cohort but the margin positive rate was higher for both T2 and T3 in the open prostatectomy cohort. Clavien-Dindo grade 4 complications were notably higher in the open cohort compared to the RALP cohort. The open cohort also had a strikingly higher proportion of bladder neck strictures (Table 2). There were no immediate returns to theatre or post-operative deaths in either of the study arms.
Conclusion: This study reaffirms the superiority of RALP in terms of perioperative complications and pathological outcomes even when performed by relatively inexperienced surgeons. RALP can be safely introduced to a new program and demonstrate early patient benefits.

MP-13.15

Retroperitoneal Robotic Assisted Dismembered Pyeloplasty: Initial Experience

Drinnan N, Hindley R, Emara A, Ni Raghallaigh H, Barber N
Frimley Park Hospital, Frimley, UK

Introduction and Objectives: Robotic assisted pyeloplasty (RAP) has gained wide acceptance around the world as surgical treatment for pelvi-ureteric junction obstruction (PUJO); the advantages of the robotic system thanks to binocular vision and wristed instruments allowing more reproduceable and rapid suturing than the more technically challenging minimally invasive alternative of standard laparoscopy. The approach employed in descriptions of RAP is almost exclusively transperitoneal; we report our series of RAP employing only a retroperitoneal approach.
Materials and Methods: We prospectively collected data from 2010 to 2013, all patients undergoing a retroperitoneal 4 port RAP employing a standard dismembered technique, parameters recorded prospectively included operative time, length of stay and peri-operative complications. Outcome data has been collected yearly.
Results: In total 46 patients underwent the procedure. The average age was 46 years with an exact 1:1 Right:Left ratio. Forty percent were tertiary referrals and over that time a further 18 laparoscopic procedures were performed. The average operative time was 151.4 minutes (skin to skin) and blood loss 10.5ml. One patient did require conversion to open because of anatomical difficulty. The median length of in hospital stay was 1 day. We have encountered two failures to date, both as a result of re-stricture.
Conclusions: The retroperitoneal approach in performing robotic assisted pyeloplasty achieves comparable outcomes with alternative

MP-13.14, Table 1. Preoperative Characteristics of Patients in the 2 Cohorts

	Open	RALP
Total number of patients	150	150
Age	65 (43 – 75)	63 (44 – 71)
PSA	8.3 (0.5 – 32)	8 (0.9 – 26)
Gleason score 6	39%	61%
Gleason score 7	51%	36%
Gleason score >7	10%	3%
Clinical T1	19%	29%
Clinical T2	64%	60%
Clinical T3	17%	11%
Radiological T2	61%	60%
Radiological T3	39%	40%

MP-13.14, Table 2. Post-Operative Complications and Pathological Outcomes for the 2 Cohorts

	Open	RALP
Pathological staging		
pT2	39%	56%
pT3	61%	44%
Post op complications		
Bladder neck contracture needing operation	11 (7.3%)	0
Incisional hernia repair	2 (1.3%)	3 (2%)
Peri-op complications		
Clavien-Dindo grade 1	4 (2.6%)	5 (3.3%)
Clavien-Dindo grade 2	3 (2%)	0
Clavien-Dindo grade 3a	3 (2%)	2 (1.3%)
Clavien-Dindo grade 3b	2 (1.3%)	2 (1.3%)
Clavien-Dindo grade 4	4 (2.6%)	0
Margin status		
Overall margin positive	37%	12%
pT2 margin positive	11%	4%
pT3 margin positive	54%	23%

approaches and is associated with a low complication rate and associated surgical morbidity reflected in a very rapid discharge from hospital, most patients being discharged the following day.

MP-13.16
Patient's Experience of the Surgeon's Robotic Learning Curve
Fragkopoulou C, Jehan E**, Nandwani G**, Singh R, Chahal R, Addla S
Bradford Teaching Hospital NHS Trust, Bradford, UK

Introduction and Objectives: Robotic assisted laparoscopic radical prostatectomy (RALP) is known to be associated with a difficult surgical learning curve. The objective of this study was to understand the impact of a robotic surgical team's learning curve on the patient's apprehensions, expectations and also patients' experience of undergoing an innovative surgical procedure.
Materials and Methods: Patient questionnaires were posted to the first 60 patients who underwent RALP at our hospital. The questions were divided into 4 domains: 1) Anxiety and expectations about the operation; 2) quality of preoperative information; 3) patients experience of RALP and 4) views on expensive innovative surgical techniques.
Results: To date 50 patients (83.3%) returned the completed questionnaires. All patients who were offered RALP agreed to undergo the procedure, including those initial patients who were clearly informed about the surgeon's lack of robotic surgical experience. The majority (88%) of the patients felt they were well informed pre-operatively. Twenty percent and 58% said they were apprehensive about developing a major or minor complication with RALP respectively. The actual patient perceived major and minor complication rates were 6% and 26%, respectively. With respect to return of urinary continence following RALP, 63% attained this function sooner than or at their expected post-operative phase. The remaining 37% attained urinary continence later than their expectations. Return to normal physical activity was concordant with patients' expectations in 90%. All patients rated their overall robotic surgical experience as excellent or good with 100% of the patients highly recommending robotic surgery to their friends and relatives. All patients felt the extra cost involved in delivering robotic surgery was justified.
Conclusion: Our study shows a very good patient satisfaction associated with RALP. Although our belief was that patients undergoing RALP in the initial phase of the surgeon's learning curve would be more anxious and apprehensive, this was not the case. There was no relation between patients' anxiety levels and surgeon's surgical experience. This study further clarifies the role of fully informing patients pre-operatively and shows that patient can be equally anxious irrespective of the surgeon's position on the ladder of surgical experience.

MP-13.17
Transvaginal Natural Orifice Translumenal Endoscopic Surgery (NOTES)-Assisted versus Conventional Laparoscopic Nephrectomy: A Prospective, Non-Randomized Trial at a Single Center
Xue Y**, Zou X**, Zhang G, Yuan Y, Xiao R
First Affiliated Hospital of Gannan Medical University, Ganzhou, China

Introduction and Objectives: To compare the surgical outcomes of two contemporary series of female patients with benign or malignant kidney disease treated by transvaginal natural orifice translumenal endoscopic surgery-assisted nephrectomy (NOTES-N) or conventional laparoscopic nephrectomy (LN).
Materials and Methods: This was a non-randomized prospective comparative study of all female patients undergoing NOTES-N or LN at our institution between September 2011 and October 2013.
Results: We enrolled 94 patients in the NOTES-N and 98 in the LN group; the two groups were comparable for all preoperative parameters except for median age. Procedural time, length of postoperative hospital stay, and the rate of intra- and postoperative complications were similar in the 2 groups. Both the visual analogue scale and the postoperative use of analgesics were significantly lower during postoperative days 1, 2, and 3 in patients who underwent NOTES-N, compared with patients who underwent LN. Time to return to normal activities was shorter in the NOTES-N group compared with the LN group. In the NOTES-N group, patients were significantly more satisfied with the cosmetic result ($P < 0.05$) and were reported unaltered sexual function after surgery.
Conclusion: This series adds to the existing evidence that NOTES-N is a technically feasible and safe procedure with significantly less pain and faster recovery compared to conventional LN; however, multi-institutional randomized trials are required to confirm benefits.

MP-13.18
A Prospective Investigation of the Impact of Transvaginal Natural Orifice Transluminal Endoscopic Surgery (NOTES)-Assisted Laparoscopic Nephrectomy on Female Sexual Function and Quality of Life
Jiang B**, Zou X**, Wu Y, Zhang G, Yuan Y
First Affiliated Hospital of Gannan Medical University, Ganzhou, China

Introduction and Objectives: To investigate the impact of transvaginal natural orifice transluminal endoscopic surgery (NOTES)-assisted laparoscopic nephrectomy on female sexual function and quality of life.
Materials and Methods: From May 2010 to November 2012, 81 females underwent transvaginal NOTES-assisted laparoscopic nephrectomy. According to the inclusion and exclusion criteria, 42 patients with a mean age of 36.90±5.31 years and a mean body mass index of 21.67±2.60 kg/m^2 were included in the investigation. The female sexual function and quality of life were assessed before and 4 months, 7 months and 1 year after surgery using the Female Sexual Function Index (FSFI) questionnaire and the MOS 36-item Short-Form Health Survey (SF-36), respectively.
Results: The mean FSFI of 42 cases preoperatively and 4 months, 7 months and 1 year postoperatively were 27.74±4.34, 27.19±4.49, 28.54±4.23, and 28.68±4.19, respectively. There was no statistically significant difference among them (F=1.111, P=0.346). Compared with that of preoperation, the physical function, vitality, metal health, body pain, and general health of the patients were improved, but the role-physica1, role-emotion and social function were not improved at postoperative month 4 and month 7 (P<0.05). Each item of SF-36 was improved after postoperative year 1 (P<0.05).
Conclusion: Transvaginal NOTES-assisted laparoscopic nephrectomy could not cause negative effects on the female sexual function. The quality of life could be improved after operation. The physical function is improved at early stage, and then the psychological function.

MP-13.19
Robotic Pyeloplasty: Initial Experience of a Single UK Centre
Lamb B[1]**, Vasdev N**[2], Mourtzilas E[2], Hanbury D[2], Lane T[2], Adshead J[2]
[1]Whipps Cross Hospital, London, UK; [2]Lister Hospital, Stevenage, UK

Introduction and Objectives: In order to decrease the morbidity and improve outcomes associated with pyeloplasty for the treatment of pelvoureteric junction obstruction, a robotic assisted laparoscopic approach is increasingly being used. We present our experience at a single UK robotic centre with robotic assisted laparoscopic dismembered pyeloplasty.
Materials and Methods: Between July 2009 and July 2013, 20 robotic-assisted transperitoneal laparoscopic pyeloplasties were performed by 4 surgeons. Data were obtained from patient case notes, patient charts, and radiographic reports.
Results: A total of 20 robot assisted laparoscopic dismembered pyeloplasties were performed in 11 men and 9 women. Mean age at treatment was 37 years (range 16–75) with an average follow-up of 14 months (5-24). The average console time was 2hr:08min (1:30–3:30), mean drop in haemoglobin 0.67g/dL (-3.5–+1.3),

mean change in serum creatinine -0.5 (-22–+18). The average time to post-operative catheter removal was 1.64 days (1–2), to post-operative drain removal 2.43 days (2–3), and to discharge 2.8 days (2–4). The average time to stent removal was 6.1 weeks (6–8). At the mean follow-up of 10 no major perioperative complications had occurred and no patients were re-admitted within 30 days of operation. The success rate was 95%, one patient required a second procedure in the form of an open redo pyeloplasty because of continued pain and radiographic evidence of continued obstruction.
Conclusions: These results suggest that robotic assisted laparoscopic pyeloplasty is a feasible treatment for PUJ obstruction in a UK centre. Low rates of morbidity, short post-operative stay and high success rates at our centre are comparable with other series. Longer follow-up of this cohort is needed to demonstrate durable and effective outcomes.

MP-13.20
Suprapubic-Assisted Laparoendoscopic Single-Site Surgery (SAE-LESS) for Nephroureterectomy
Liu Q**, Zou X**, Zhang G, Liao Y, Xue Y, Yuan Y, Xiao R, Wu G, Wang X, Liu F
First Affiliated Hospital of Gannan Medical University, Ganzhou, China

Introduction and Objectives: During the past years, suprapubic-assisted laparoendoscopic single-site surgery (SA-LESS) established by ourselves has been used in urology in our center. We report 17 cases of SA-LESS for nephroureterectomy in a patient with right upper urinary tract cell carcinoma.
Materials and Methods: Seventeen consecutive patients including 10 males and 7 females, with a mean age of 67.6 years (range 58 to 76), were subjected to SA-LESS nephroureterectomy in our center. There were 8 renal pelvic carcinomas, 4 ureteral carcinomas, one renal pelvic carcinoma combined with ureteral carcinoma, two renal tuberculosis, and one megaureter with empyema included in this study. The patients were administrated general endotracheal anesthesia and secured on the operating table in lateral decubitus with right side elevated 70°. One 5- and 10-mm trocars were inserted at the medial margin of umbilicus. A 5-mm trocar was inserted into the abdominal cavity below the pubic hairline under the direct vision from a 5-mm flexible-tip 0° laparoscope through the umbilical trocar. The operation was performed using conventional operating apparatus placed in the abdominal trocars, under direct vision achieved by a 5-mm flexible-tip 0° laparoscope placed through the trocar below the pubic hairline. Firstly, the distal ureter was dissected and blocked by a Hem-O-lok. Then, the bladder cuff excision was performed and the incision was sutured. Finally, the ureter was isolated completely and radical nephrectomy was performed according to the method of the standard laparoscopy. The specimen was removed after the incisions below the pubic hairline was enlarged transversely and the rectus abdominis muscle sheath was incised vertically.
Results: All the procedures were successfully performed. The median operative time was 160 (range 115 to 220) minutes, and the median estimated blood loss was 150 (range 50 to 250) ml. No major perioperative complication occurred. All the patients resumed ambulation on postoperative day 1. Pelvic drainage tube was removed on postoperative day 2-3. Urethral catheter was removed on postoperative day 6-7 (the tumor patients underwent irrigation of bladder with Pirarubicin). The patients were discharged on postoperative day 8.
Conclusions: SA-LESS nephroureterectomy appears to be feasible, safe and effective. The placement of trocar at umbilicus and below the pubic hairline not only decreases the difficulty of operation, but can also leads to good cosmetic results.

MP-13.21
Pure Transvaginal Natural Orifice Transluminal Endoscopic Surgery (NOTES) for Nephrectomy: Report of 16 Cases
Zou X, Zhang G, Xiao R, Yuan Y, Xue Y
First Affiliated Hospital of Gannan Medical University, Ganzhou, China

Introduction and Objectives: Pure natural orifice translumenal endoscopic surgery (NOTES) within urology has largely been limited to experimental animal studies. We describe the initial clinical experience of pure transvaginal NOTES for nephrectomy, and evaluate its feasibility.
Materials and Methods: Fifteen female patients with non-function kidney (right 12, left 3), with a median age of 42.6 years (range 32 to 68), underwent pure transvaginal NOTES nephrectomy, and one female patient with right renal carcinoma underwent pure transvaginal NOTES radical nephrectomy. After induction of general anesthesia, the patients were positioned in lithotomy with ipsilateral lumbar at 60° angle to the floor. A 5-mm incision was made at the posterior vaginal fornix, and a 5-mm trocar was introduced into the pelvic cavity guided by a 5-mm forceps. A 5-mm flexible-tip 0° laparoscope was inserted into the pelvic cavity confirming no rectum injury. Then a ZOU-port was introduced at the posterior vaginal fornix. Dissection was performed according to the method of the standard laparoscopic simple and radical nephrectomy. The intact specimen was extracted transvaginally.
Results: The procedures were successfully performed in all patients without additional trocars except for 1, who immediately underwent suprapubic-assisted laparoendoscopic single-site surgery conversion for rectal injury during vaginal entry. There was no other major perioperative complication occurred. The median operative time was 180 mins (range 170 to 330). The median estimated blood loss was 165 ml (range 100 to 250). The patients resumed ambulation on postoperative day 1 (3 for the patient with rectal injury). The pelvic drainage was removed on postoperative day 2 to 3. The patients resumed nutrition on postoperative day 2 to 3 (8 for the patient with rectal injury). The patients were discharged on postoperative day 6 (12 for the patient with rectal injury). The median follow-up of 14.5 months (range 2 to 35) showed that the incision in the vagina healed well. No patient experienced sexual dysfunction.
Conclusion: Pure transvaginal NOTES for nephrectomy is feasible and effective.

Moderated Poster Session 14
Reconstruction and Trauma
Tuesday, October 14
1300-1430

MP-14.01

High BMI, Previous Urethral Surgery and Early Experience Are Risk Factors for Failure in Open Urethroplasty Due to Penile Strictures

Olsen Ekerhult T, Lindqvist K, Peeker R, Grenabo L

Dept. of Urology, Sahlgrenska University Hospital, Gothenburg, Sweden

Introduction and Objectives: To evaluate outcome and possible risk factors for failure of open urethroplasty due to penile urethral strictures.

Materials and Methods: Retrospective chart review of 114 patients with penile stricture undergoing open urethroplasty between 2000 and 2011. In 80 patients, a one-stage onlay procedure was used. A majority of these patients had a pediculated penile skin flap while a few had a free buccal mucosal graft. A two-stage procedure using buccal mucosa was performed in 29 patients. Another five patients with panurethral and complex strictures were managed with a perineal urethrostomy. Failure was defined as when further intervention was needed such as clean intermittent dilatation, internal urethrotomy, a new urethroplasty or a fistula reconstruction. Fisher's exact test and chi–square test was used to identify univariate and multivariate predictors of failure and failure over time.

Results: Mean ages in the one-stage, the two-stage and the perineal urethrostomy groups were 50, 54, and 74 years, respectively. The success rates in the corresponding groups were 65%, 72% and 80% with follow-up times 44, 29 and 32 months, respectively. In the one-stage group, 28 failures (23 restrictures/5 fistulas) were recorded and in the two-stage group, 8 (4 restrictures/4 fistulas). Among the five perineal urethrostomies one failure was found. Multivariable analyses disclosed previous internal urethrotomy/urethroplasty and BMI >30 to be significant risk factors for failure in the one-stage group. Failure over time significantly decreased during the study period (p=0.002).

Conclusions: Both one- and two-stage penile urethroplasty demonstrate a good success rate in line with previous reports. Obesity, previous urethral surgery and early experience appear to be associated with less favorable outcome after open urethroplasty due to penile strictures. Two-stage procedures and perineal urethrostomies could be preferred options in carefully selected patients.

MP-14.02

Urethral Stricture vs. Benign Prostatic Obstruction: A Radiographic Analysis

Eswara J[1], Raup V[2], Madison K[2], Vetter J[2], Brandes S[2]

[1]Brigham and Women's Hospital, Harvard Medical School, Boston, USA; [2]Washington University, St. Louis, USA

Introduction and Objectives: Urodynamic parameters such as peak flow, pressure/flow, and PVR are often used during the evaluation of patients with urinary retention. Patients with urethral stricture disease often demonstrate the same urodynamic picture as patients with benign prostatic obstruction (BPO), potentially leading to incorrect management. In this study, we examine the radiographic parameters on voiding cystourethrogram (VCUG) and retrograde urethrogram (RUG) that identify stricture patients that have concurrent BPO.

Materials and Methods: This is a retrospective review of 30 consecutive patients who underwent anterior urethroplasty; 15 who had a diagnosis of BPO and 15 who did not. All surgeries were performed by a single surgeon (SBB) from 2000 to 2012. Patients with BPO were diagnosed by urodynamics or symptomatic relief with an alpha-blocker. Among patients with BPO, 9/15 required TURP/PVP after urethroplasty. Radiographic characteristics on RUG and VCUG were evaluated by 2 independent reviewers (JRE, SBB). Univariate and multivariable analyses were performed.

Results: Median age was 50 years in the BPO group and 49 years in the non-BPO group and (p=0.88). Features associated with concurrent BPO included narrow bladder neck (BN) width on VCUG (mean 1.0cm vs. 1.8cm, p=0.0002), lower BN/prostatic length ratio (0.40 vs. 0.57, p=0.01), BN shape (concave vs. convex, p=0.003), narrowed prostatic urethra on RUG (p=0.016), bladder trabeculation/diverticula (p=0.0000003), PVR>180cc after VCUG (p=0.00006), and inability to complete VCUG (p=0.03). Factors not associated with concurrent BPO and urethral stricture included non-visualization of proximal urethra on RUG (p=0.063), enlarged bladder (p=0.12), and closed BN on VCUG (p=1.0). The multivariable model including BN width, BN shape, trabeculation/diverticula, and PVR showed that each additional variable increased the odds of having BPO 13.4-fold (p=0.009).

Conclusions: Urethral stricture patients with urethrographic findings of narrow BN, low BN/prostatic length ratio, concave BN on VCUG, narrowed prostatic urethra, bladder trabeculation/diverticula, PVR>180cc, and inability to complete VCUG, should be counseled that they may need subsequent therapy to treat prostatic obstruction in addition to their anterior urethroplasty.

MP-14.03

Substitution Bulbar Urethroplasty Using Buccal Mucosal Graft in Dorsal Onlay Fashion (Barbagli Technique): Results for Patients Treated over a 10-Year Period in a Scottish Regional Referral Centre

Khan R, Kelly L, Palmer M

Gartnavel General Hospital, Glasgow, Scotland, UK

Introduction and Objectives: Substitution bulbar urethroplasty using buccal mucosal grafting in dorsal onlay fashion (Barbagli technique) was introduced in 1995-96. Over the years, it has become an established technique used worldwide for treating bulbar urethral strictures. We analysed the outcomes for patients undergoing this procedure in our Scottish regional referral centre under one surgeon over a ten-year period (2003-2012).

Materials and Methods: This is a retrospective review of all patients, identified from the theatre procedure book, who had bulbar urethroplasty using above technique between years 2003 to 2012. We excluded anastomotic, re-do and peno-bulbar urethroplasty patients. A total of 68 patients were identified but 61 were included in this analysis. Seven were excluded from analysis due to non-availability of complete data or graft placement technique other than Barbagli's.

Results: Average age of patients at the time of the procedure was 43.9 years (Range 18 to 79). Average follow-up was 40.7 months (Range 0 to 113). Single buccal mucosal graft was used in all patients. Fifty eight patients (93%) had previous documented intervention for stricture disease with Optical urethrotomy being the most common procedure. Pre- and post-operative urethrogram results were accessible at time of analysis in 95% of patients. Four patients (6.5%) had evidence of leak on first post-procedure urethrogram. These patients had repeat urethrogram subsequently which showed complete healing. Erectile dysfunction was reported by 6 patients (9.8%). Fourteen patients (23%) had recurrence of stricture with average time to recurrence being 29 months (Range 2-106). For the patients with recurrence, 6 out of 14 had recurred by 7 months of follow-up (early recurrence). Two patients needed intervention to allow check cystoscopies for transitional cell cancers and may not be true recurrences.

Conclusion: Barbagli technique for bulbar urethroplasty is a reliable and reproducible technique. In our series, re-stricture rate is 23% for a cohort of patients treated over a long, ten-year period. Overall our results are comparable to other contemporary series in literature. This technique using buccal mucosal graft continues to be our technique of choice for first intervention for bulbar urethral stricture.

MP-14.04
Urethroplasty for Long Segments and Panurethral Strictures: A Multi-Institutional Study
Malkawi I[1], Warner J[1], Gonzalez C[2], Angermeier K[3], Barbagli G[4], Joshi P[5], Kulkarni S[5], Gomez R[6], Martins F[7], **Santucci R**[1], Daradkeh M[8], Han J[2]
[1]Detroit Medical Center, Detroit, USA; [2]Northwestern University School of Medicine, Chicago, USA; [3]Cleveland Clinic, Cleveland, USA; [4]Center for Reconstructive Urethral Surgery, Arezzo, Italy; [5]Kulkarni Center for Reconstructive Urology, Pune, India; [6]Hospital del Trabajador, Santiago, Chile; [7]Santa Maria Hospital, University of Lisbon School of Medicine, Lisbon, Portugal; [8]Jordan University of Science and Technology King Abdullah University Hospital, Irbid, Jordan

Introduction and Objectives: Panurethral strictures are the most difficult problems in reconstructive urology. We performed a multi-institutional study involving large numbers of patients to determine practice patterns and success rates after urethroplasty for this difficult population.
Materials and Methods: After IRB approval, an online form was used to collect urethroplasty data from 7 urethroplasty centers of excellence. Patients all had stricture length ≥ 8 cm and at least 1 year follow-up. Data was collected: age, previous procedures, etiology, length, urethroplasty type, follow-up time, complications and success rates. Success was defined as patients not needing further instrumentation after urethroplasty.
Results: Total sample size was 466. Mean age was 51.5 years (16-82). Mean stricture length 12.7 cm (8-24). Overall recurrence rate was 22.7%. Previous urethrotomy, dilation, or failed urethroplasty did not decrease success rates and success rates were similar for all stricture lengths. Patients had 2 or more strictures 16% of the time. Buccal urethroplasties had the highest success rate: 85% (p value <0.001 and an Odds Ratio of 0.43 for recurrence compared to all other surgeries). Second stage Johanson (65% success) and fasciocutaneous (63% success) were less successful. Planned first-stage-only Johanson urethroplasty and salvage perineal urethrostomy were successful 76% of the time and required revision 24% of the time. Combination surgery such as fasciocutaneous and buccal graft surgery was required in 4%. Neither fossa navicularis nor penile urethral involvement predicted higher failure rates. Immediate complication rate was 8%. Late complication rate was 7%, of which chordee and fistula were most common (38% + 22% respectively).
Conclusion: Long segment urethroplasty ≥8 cm has a potentially high success rate of 78% in expert hands, with Kulkarni (dorsal buccal) urethroplasties being most successful. Success rates are unaffected by previous urethrotomy/urethroplasty, stricture length, or even penile/fossa navicularis involvement in this long-segment and panurethral stricture population.

MP-14.05
The Everyman Urethroplasty
Sharma D
Woodlands Hospital, Georgetown, Guyana

Introduction and Objectives: Posterior Urethroplasty is a challenging, formidable operation. It will be required for patients who have suffered severe post traumatic urethral injury, oftentimes with fractured pelvis, seen after road traffic, construction site and forestry accidents, or after post infective stricture disease with perineal sepsis and the watering can perineum. Objectives: To develop a simplified Urethroplasty that can be performed by a competent surgeon working in the Third World.
Materials and Methods: The simplified technique has been developed and refined during a 30 year experience working with approximately 80 patients. It is a no suture substitution Urethroplasty done in two stages using perineo-scrotal skin to create a proximal neo-urethra. In the first stage the perineo-scrotal skin is passed through the bladder neck and anchored onto the anterior abdominal wall. No sutures are required. Very little dissection is encouraged. The bladder neck and strictured area are stretched to accept an index finger. The second stage proceeds after three months. The skin neo-urethra is transected as high as conveniently possible. A tubularised buccal mucosal graft is attached to the skin tube proximally and the patient's native urethra distally.
Results: A total of 77 men and 3 boys have had the operation. They all control the passage of urine and are free of catheters. Two men were happy with the perineal urethrostomy and refused the second stage.
Conclusion: The simplified technique can be used to repair the difficult post-infective urethral stricture or the severe post-traumatic urethral damage/disruption associated with pelvic fracture.
Disadvantages: It is a staged procedure with the theoretical bother of hair and skin changes rather like BXO in time – 30 years time. By inserting a buccal mucosal tube we limit the amount of skin in the neo-urethra.
Advantages: This is a simple straightforward procedure, technically possible even in very young boys. Minimum dissection required hence less risk of damage to the sphincteric mechanism and is do-able by a competent surgeon in the Third World under 3rd World conditions.

MP-14.06
Analysis of an Autologous Tissue-Engineered Graft for Urethral Reconstruction: A Safety Assessment
Knispel H[1], Spiegeler M[1], Stuerzebecher B[1], Fahlenkamp D[2], Balsmeyer U[2], Romano G[3], Lazzeri M[4], Barbagli G[4], **Ram-Liebig G**[5]
[1]Dept. of Urology, St. Hedwig Krankenhaus, Berlin, Germany; [2]Dept. of Urology, Zeisigwald Clinics Bethanien, Chemnitz, Germany; [3]Dept. of Urology, San Donato Hospital, Arezzo, Italy; [4]Center for Reconstructive Urethral Surgery, Arezzo, Italy; [5]UroTiss GmbH, Dresden, Germany

Introduction and Objectives: Urethral reconstruction using autologous engineered constructs could provide a superior alternative to native oral mucosa graft, while avoiding excision of larger tissue segments from patient's mouth. The present report sums up safety data of an autologous tissue-engineered oral mucosa graft from preclinical studies. Additional reported clinical safety data from an ongoing observational were also analysed.
Materials and Methods: For graft production, patient's oral mucosa cells were generated from a small oral mucosa biopsy and cultured on the surface of a biocompatible scaffold. Karyotype evaluation was performed on cultured cells from 7 patients to assess their chromosomal stability. Cell number used for karyotyping was 1.9-2.6x10^6/patient. To examine the tumorigenic risk of the graft *in vivo*, cells from 6 different human donors were injected by intraperitoneal and subcutaneous route into each of ten immunodefiscient athymic nude mice. Each injection consisted of 10^7 cells ± 2 × 10^6 cells, which were injected into each animal on day 1, 18, 25 and 46 of the study. An additional group consisting of ten animals each received cell culture medium as vehicle control. A biodistribution study was performed to provide data about a possible "spreading" of implanted cells into distinct organs. For this purpose, engineered homologous murine Transplants (size 1.5x0.5cm) generated from eGFP-transgenic mice were transferred into the peritoneal cavity of histocompatible non-transgenic mice and *vice versa*. Groups of three transplanted animals each were sacrificed after one week, two weeks and four weeks for histological analysis. Additionally, reported safety data from 70 tissue-engineered graft-treated patients suffering from urethral stricture were collected and analysed to assess safety of the graft. Patients were recruited in an ongoing observational study with a 2-year follow-up period for which ethical committee votum was available and a pharmacovigilance system according to international standard was in place.
Results: Karyotype analysis did not reveal any genetic instability or chromosomal alterations. The GLP-Tumorigenicity study in nude mice

did not show any sign of macroscopic tumor formation during the life span of 140 days that was 3 months following last cell injection. No malignancy attributable to graft was detected following thorough microscopic tissue evaluation. Biodistribution studies of the murine homologue of the graft revealed no migration of transplanted cells into distant tissues and organs. Reported clinical data of 70 patients demonstrated no peri- or post-operative events related to the engineered graft.
Conclusions: Tissue-engineered oral mucosa graft appears to be a safe, viable and superior alternative to native oral mucosa transplants for the treatment of urethral stricture.

MP-14.07
Urethroplasty with Autologous Tissue-Engineered Oral Mucosa Graft: Efficacy Results in Two Centers
Knispel H[1], Spiegeler M[1], Stuerzebecher B[1], Fahlenkamp D[2], Balsmeyer U[2], Romano G[3], Lazzeri M[4], Barbagli G[4], **Ram-Liebig G**[5]
[1]Dept. of Urology, St. Hedwig Krankenhaus, Berlin, Germany; [2]Dept. of Urology, Zeisigwald Clinics Bethanien, Chemnitz, Germany; [3]Dept. of Urology, San Donato Hospital, Arezzo, Italy; [4]Center for Reconstructive Urethral Surgery, Arezzo, Italy; [5]UroTiss GmbH, Dresden, Germany

Introduction and Objectives: To avoid potential complications associated with oral mucosa excision for urethroplasty, engineered grafts may become valuable alternatives. Here we present our preliminary results in the use of tissue-engineered oral mucosa graft, manufactured from a tiny biopsy in the treatment of urethral strictures in two centers.
Materials and Methods: We present reported data of 29 patients with bulbar or bulbopenile urethral stricture recurrence, who underwent one-stage urethroplasty with tissue-engineered graft. Ethical committee votum was available. Excluded in this report are patients with allergy against MukoCell® components, patients who had previous radiation or laser therapy at urethral site as well as patients with severe autoimmunogenic disease. The age of patients was between 24 to 86 years. Stricture length in each patient was between 20mm and 78mm.
Results: The size of the oral biopsy was about 0.4cmx0.8cm. No complications occurred at the donor site. Three weeks later, the operative procedure was performed. The mean follow-up time was 12.7 months. All patients voided spontaneously after catheter removal, 3 weeks after urethroplasty, and radiographic examinations showed a patent urethra. The mean reported postoperative peak flow was 27.1 ml/sec. Four patients had a recurrence, all of them in the first 12 months after operation. One patient had a postoperative meatus stenosis, while the grafted urethral site with MukoCell® remained free of stricture.
Conclusion: Our preliminary results regarding urethroplasty with autologous tissue-engineered graft are promising. A higher number of patients and longer term results are necessary to determine if tissue engineered grafts can replace native oral mucosa for urethroplasty in the future.

MP-14.08
Tissue Engineered Buccal Mucosal Urethroplasty: Long-Term Clinical Outcomes
Kuo T[1,2], Osman N[1], Patterson J[1], Inman R[1], MacNeil S[3], Chapple C[1]
[1]Royal Hallamshire Hospital, Sheffield, UK; [2]Singapore General Hospital, Singapore, Singapore; [3]Kroto Research Institute, University of Sheffield, Sheffield, UK

Introduction and Objectives: Buccal mucosa is commonly used as a graft in urethral substitution. In patients with recurrent or complex urethral stricture disease, obtaining sufficient quantity of tissue may not be possible. We previously developed a methodology for culturing tissue engineered buccal mucosa (TEBM) and 3-year clinical outcomes. We now present the findings from long-term (9 years) follow-up.
Materials and Methods: Five men with recurrent urethral strictures secondary to lichen sclerosis requiring extensive substitution underwent TEBM urethroplasty with local ethics committee approval. A 0.5cm^2 full thickness buccal mucosal biopsy was taken from each patient. Oral fibroblasts and keratinocytes were isolated, expanded in culture before being seeded on sterilized de-epidermised dermis from donors. The cells were then cultured for 7 to 10 days at air-fluid interface to TEBM grafts. Follow-up was initially performed at 2 weeks, 6 weeks then 3 months to 1 year, 6 monthly to 3 years and then yearly thereafter, by direct visualisation with flexible urethroscopy.
Results: Mean follow-up was 111 months (range 110 – 115 months). The grafts initially took in all patients. Subsequently one patient required partial excision of the graft for a hyperproliferative tissue reaction. Another required full excision for fibrosis. Of the three remaining patients with intact TEBM, two patients have since required an internal urethrotomy and one has required a urethral dilatation. Two of these three patients continue to perform intermittent self-dilatation. All had patent urethras on cystoscopic examinations within the past year with no adverse mucosal features.
Conclusion: As reported previously there was a significant initial risk of an adverse fibrotic reaction several months after implantation of TEBM. This occurred in 2 patients. It is not clear whether this was related to patient factors (i.e. lichen sclerosis) or whether graft related. In the other 3 patients results have been durable for 9 years albeit with the requirement for 1 further minimally invasive procedure. This study emphasizes the need for clinical evaluation before new technologies are introduced into clinical practice but that TEBM can provide a durable result.

MP-14.09
Functional Outcomes after Urethroplasty: Prospective Analysis from a Single Center
D'Hulst P, Vander Eeckt K, Van der Aa F, Joniau S
UZ Leuven, Leuven, Belgium

Introduction and Objectives: Urethroplasty is the 'gold standard' treatment of urethral strictures. Different techniques are used and success is generally described as freedom of stricture recurrence. However, patients are not only interested in stricture-free survival, but also want to experience a normalized urinary and erectile function and an improved quality-of-life. Therefore, patient-reported outcome measures (PROMSs) are of major interest in this field. The study objective is to prospectively analyze functional outcomes and patient satisfaction after anterior urethral reconstruction.
Materials and Methods: We prospectively evaluated 125 patients who underwent anterior urethral stricture repair between August 2009 and February 2014. Preoperatively and at each follow-up, patients received following questionnaires: the International Prostate Symptom Score (IPSS) with the International Prostate Symptom Score Quality Of Life (IPSS-QOL), the Urogenital Distress Inventory Short Form score (UDI-6), the International Index of Erectile Function-5 score (IIEF-5) score and the ICIQ-Lower Urinary Tract Symptoms Quality of Life score (ICIQ-LUTS-QOL). Voiding symptoms, incontinence, erectile dysfunction (ED) and quality-of-life were analyzed using paired sample t-tests.
Results: Patients with mild or no baseline ED (IIEF 17-25) had a significant decline in erectile function at first follow-up ($p<0.0001$). There was a recovery of erectile function between first and second follow-up ($p=0.0199$) but erectile function did not come back at baseline-levels. Patients with mild or moderate to severe ED (IIEF 5-16) at baseline experienced no significant changes in erectile function. Significant differences were noted between preoperative IPSS-score ($p<0.0001$), IPSS-QOL ($p<0.0001$), UDI-6-score ($p<0.0001$) and ICIQ-LUTS-QOL-score ($p=0.0001$) and the scores at first follow-up. These differences remain significant at second and third follow-up.
Conclusion: Following urethroplasty for anterior urethral strictures, we noticed a significant decline in erectile function in patients with mild or no baseline ED at first follow-up. A recovery was seen after 8.6 months, but there was no full restoration of erectile function. Voiding symptoms improved significantly, and we noticed a major positive impact on quality-of-life,

which remained up to 17.1 months after surgery. This large prospective study shows that success should not merely be defined by the absence of stricture recurrence. Other factors such as erectile function and voiding symptoms contribute to quality-of-life and to success.

MP-14.10

Patient Reported Quality of Life and Timing of Discharge after Outpatient or Short-Stay Urethroplasty

Okafor H, Madala A**, Nikolavsky D**
SUNY Upstate Medical University, Syracuse, USA

Introduction and Objectives: In this study we sought to assess quality of life (QOL) of patients after anterior or posterior urethroplasty in the outpatient or short-stay setting.
Materials and Methods: We retrospectively reviewed records of 50 consecutive adult patients who underwent anterior or posterior urethroplasty between 9/2012 and 3/ 2014 at our institution. A EuroQol-5 (EQ-5) validated questionnaire was administered 24 hours after the patient's discharge assessing "Mobility", "Self-Care", "Usual Activity", "Pain" and "Anxiety" on a scale from 1 (severe) to 3 (no problem). An additional question assessing the timing of discharge, as either "too late", "too soon", or "on time" was added to the survey.
Results: Mean age of the group was 47.5 years (18-78). Mean length of urethral stricture was 47.2 mm (4-160 mm). The etiology of strictures were idiopathic, 19 (38%), traumatic, 12 (24%), hypospadias failures, 7 (14%), and iatrogenic, 5 (10%). Repairs included excision primary anastomosis (EPA) (14), Kulkarni dorsal onlay (13), augmented anastomotic urethroplasty (AAU) (9), Staged urethroplasty with buccal mucosa graft (BMG) (5), and posterior urethroplasty (4). Nine patients (18%) were discharged postoperatively on the day of surgery, while 41 (82%) stayed overnight. At 24 hours there was an 82% response rate. In the short-stay and the outpatient cohort, 77.7% and 86% respectively felt they were discharged on time. Severe problems with self care, pain, or anxiety/depression were each reported by only 4.5% of patients, no patients reported severe problems with mobility.
Conclusion: In a heterogeneous population of patients including those requiring complex reconstruction for anterior strictures or posterior urethral disruption, performing urethroplasty in the outpatient or short hospital stay setting does not compromise QOL in the early post operative period. Despite early discharge, 86% of patients perceived that discharge timing was appropriate.

MP-14.10, Table 1. Number (Percentage) Reporting on EQ-5 and Discharge Time

EQ-5; n = 44	**1=Severe**	**2=Moderate**	**3=No Problem**
Mobility			
Outpatient n = 9	0	4	5
Short-Stay n = 35	0	18	17
All Responders	**0**	**22 (50%)**	**22 (50%)**
Self-Care			
Outpatient	0	1	8
Short-Stay	2	10	23
All Responders	**2 (4.5%)**	**11 (25%)**	**31 (70%)**
Usual Activities			
Outpatient	1	5	3
Short-Stay	11	14	10
All Responders	**12 (27.3%)**	**19 (43.2%)**	**13 (29.5%)**
Pain/Discomfort			
Outpatient	0	8	1
Short-Stay	2	26	7
All Responders	**2 (4.5%)**	**34 (77.3%)**	**8 (18.2%)**
Anxiety/Depression			
Outpatient	0	0	9
Short-Stay	2	6	27
All Responders	**2 (4.5%)**	**6 (13.6%)**	**36 (81.8%)**
	Time		
Discharge; n = 42	1=Too late	2=Too Soon	3=On Time
Timing of Discharge			
Short-stay n = 33	0	4	29
Outpatient n = 9	0	2	7
All Responders	**0**	**6 (14.3%)**	**36 (85.7%)**

MP-14.11

Treatment of Urethral Strictures in Patients Having Undergone Prior Total Phallic Construction

Zuckerman J, Smentkowski K, Gilbert D, Virasoro R, Tonkin J, Jordan G, McCammon K
Eastern Virginia Medical School, Norfolk, USA

Introduction and Objectives: The treatment of urethral strictures in patients having undergone a prior total phallic construction is not well defined.
Materials and Methods: We retrospectively reviewed patients treated for a urethral stricture at our institution who had undergone a prior total phallic construction. Stricture treatments were tabulated and outcomes assessed.
Results: We identified 32 patients who met inclusion criteria. They underwent a phallic construction at a mean 30.2 years of age. The urethra was constructed with a tubularized musculocutaneous forearm free flap (24) or a tubularized full-thickness skin graft (FTSG) (8). One patient underwent excision and primary anastomosis and another a second stage buccal graft urethroplasty at the time of phallic construction. Urethral strictures developed at a median 5.7 months following phallic construction. Stricture location was at the urethral anastomosis in the majority of patients (21); the remaining strictures were either proximal (1) or distal (7) to the anastomosis or pan-neourethral (2). One patient's stricture location was not determined by retrospective review. The patients underwent an average 2.6 stricture treatments. Forty-one percent underwent an initial dilation or internal urethrotomy (DVIU). This was the definitive procedure in only 29% with the remainder undergoing formal reconstruction after the DVIU failed or performing intermittent self-dilations. Patients not undergoing initial DVIU attempt underwent variety of procedures depending on stricture length and location, including a proximal cutaneous urethrostomy (3), meatoplasty (3), perineal urethrostomy (4), single-stage onlay (3), tubed FTSG (1), or a 2-stage reconstruction (1). Following urethral repair 84% of patients were voiding via the neourethra, 12.5% performed either intermittent catheterization or had an indwelling catheter, and one patient voided through a fistula

proximal to a more distal stricture.
Conclusions: Urethral reconstruction for stricture disease is possible in patients with prior total phallic construction. Initial DVIU may be attempted, but is successful in less than 1/3 of patients not performing self-dilations. Whatever approach is chosen, multiple procedures to attain urethral patency is the rule rather than the exception in this difficult patient population.

MP-14.12
Functional Outcome following Open Surgical Correction of Bladder Neck Contractures with Subsequent Implantation of an Artificial Urinary Sphincter
Bugeja S, Frost A, Andrich D, Mundy A
University College London Hospitals, London, UK

Introduction and Objectives: We review the functional outcome after open surgical reconstruction of bladder neck contractures and prostatic urethral stenoses with subsequent artificial urinary sphincter (AUS) implantation following treatment of prostate cancer.
Materials and Methods: Between 2006 and 2012, 32 patients (mean age 65.5 years) were treated in a single unit. Men with anastomotic contractures following radical prostatectomy only (n=16) or radical prostatectomy and adjuvant radiotherapy (n=6) underwent transperineal revision of the vesico-urethral anastomosis (VUA). Those with prostatic stenoses following external beam radiotherapy, HIFU, cryotherapy, brachytherapy or a combination of these (n=10) were treated by salvage radical prostatectomy. All had failed multiple previous attempts at endoscopic management. A bulbar AUS was subsequently implanted on average 9.1 months after the reconstruction to treat consequent incontinence.
Results: The overall stricture-free rate after reconstruction was 87.5% (28 of 32). Only one patient each following radical prostatectomy only and after adjuvant radiotherapy recurred and are carrying out self-dilatation. All the rest, except one who declined, went on to have a bulbar AUS implanted (n=19). All are dry at a mean follow-up of 31.2 months except one unirradiated patient with recurring incontinence due to device malfunction. Eight out of 10 patients (80%) having salvage prostatectomy were also successful. Seven underwent AUS implantation. Four remain dry after their primary implant, 3 are dry however had their devices revised for erosion (1) and malfunction (2). Therefore functional normality (unobstructed and continent) was achieved in 18 of 22 (81.8%) transperineal reconstructions. In irradiated patients with prostatic stenoses, 7 of 10 (70%) were rendered functionally normal after salvage radical prostatectomy albeit with a higher rate of AUS revision as a consequence of the primary irradiation treatment.
Conclusion: Surgical correction of recalcitrant BNC after treatment of prostate cancer is feasible and very effective however requires implantation of an AUS to restore functional normality. Salvage radical prostatectomy, though technically challenging, with longer hospital stays and time to catheter-free status, is the treatment of choice in radiotherapy-related prostatic urethral stenoses.

MP-14.13
Reconstructive Surgery for Uro-Rectal and Perineal Fistulae
Bugeja S, Frost A, Andrich D, Mundy A
University College London Hospitals, London, UK

Introduction and Objectives: This study evaluates the significance of perineal wound infection and post-operative radiological leak, determining their role in fistula recurrence after transperineal repair of uro-rectal and/or uro-cutaneous fistulae, with additional abdominal exposure when necessary.
Materials and Methods: Between 2006-2013, 43 transperineal (17 with gracilis flap) and 23 abdomino-perineal repairs (omentoplasty) of uro-rectal and/or uro-perineal fistulae were performed in 58 men. Thirteen were redo procedures. Thirty one patients had undergone radiotherapy, HIFU, cryotherapy, brachytherapy or a combination of these. All underwent fluoroscopic assessment on average 4 weeks post-op prior to urethral catheter removal. In 54 cases the perineal wound was closed over a corrugated drain.
Results: Overall success rate was 78% (52 of 66 procedures), all recurrences occuring in irradiated patients, on a background of Crohn's disease or in non-primary procedures. Fourteen perineal wound infections were documented, 13 in patients having a perineal drain. In 11, a fistulous track developed onto the perineum at the drain site. Nine arose from the urinary aspect, only two originating from the bowel side. Three eventually healed spontaneously after 3 months. The rest required salvage surgery. Of the 9 failed urorectal fistula repairs, only one had a persistent urinary leak through the rectum. The rest presented with these fistulae to the perineal drain site. In 20 of 52 cases with a successful outcome (38.5%), urethrogram at 4 weeks demonstrated a leak from the urinary side. This was either into a contained cavity or blind-ending track and was managed conservatively. The catheter was eventually removed on average 84.8 days after surgery. Eighteen patients remained asymptomatic. In 2, this cavity subsequently became infected and ruptured, requiring further salvage surgery.
Conclusions: Recurrence after fistula repair is usually from the urinary tract. This most often presents as a recurrent track, not into the rectum, but onto the perineum to the drain site. Consequently we now avoid draining the perineal wound routinely. Radiological leaks from the urinary system into a blind ending track or cavity are common after this type of procedure and very often can be managed conservatively without compromising the final outcome.

MP-14.14
Bulbar Urethral Necrosis
Kulkarni S, Joshi P, Rosenberg S, Surana S, Alhajeri F
Kulkarni Reconstructive Urology Center, Pune, India

Introduction and Objectives: Multiple failed anastomotic urethroplasties for Pelvic Fracture Urethral Defects (PFUD) may result in ischemic bulbar necrosis leading to long defects in the urethra. After transection of the bulbar urethra, distal bulbar urethra is dependent on retrograde blood supply from glans and penile urethra in anastomotic urethroplasty. This supply is suboptimal in vasculogenic impotence. During inferior pubectomy the dorsal penile arteries may be traumatized adding further to ischemia. We present our retrospective data analysis of bulbar urethra necrosis.
Materials and Methods: Between, 2010 and 2012, 46 patients were referred with bulbar necrosis .This was partial (narrow urethral plate) or complete. All 46 patients had >2 attempts at urethroplasty prior to referral. Choice of surgery was dependant on length of urethra to be created, presence of urethral plate, prepuce and status of scrotum. P1 patients with no urethral plate required circumferential substitution urethroplasty and P 2 patients had narrow plate and required augmentation with a vascularised flap.
Results: In P1, 25 underwent pedicled preputial tube urethroplasty, 4 underwent oral mucosa flap urethroplasty* and 3 had scrotal dropback. Two patients had dorsal BMG and ventral pedicled penile skin flap. In P2 requiring augmentation, 8 patients had pedicled penile flap as ventral onlay, and 4 had oral mucosa flap.*In oral mucosa flap midline scrotal incision is made and widened. A 3cm by 7cm buccal graft is applied on dartos. After 6 weeks graft is mobilized on midline scrotal septum, transposed to perineum and then either used as an onlay or tubularised. Follow-up ranges from 5 to 120 months. Nineteen out of 25 patients of preputial tube developed symptomatic diverticulum. Four had proximal anastomotic narrowing. One had incontinence due to bladder neck issues. One developed fistula. Four out of 8 patients of oral mucosa flap were successful. Two developed proximal narrowing.
Conclusions: A majority of preputial tube patients do well. Diverticulum formation, post micturition dribble and anastomotic narrowing are common problems. Oral mucosa flap is the new technique where vascularised random

buccal graft flap can be used for substitution. Inferior pubectomy should be performed below the periostium to avoid damage to the dorsal penile arteries.

MP-14.15
The Role of Bedside Bladder Sonography for Detection of Bladder Trauma
Adi K, Santoso J
Hasan Sadikin Hospital, Bandung, Indonesia

Introduction and Objectives: Bladder trauma is one of the most frequent urologic injury associated with concomitant pelvic trauma. The current gold-standard for diagnosis of traumatic bladder rupture include CT or cystogram, but these imaging modalities may only be performed in stable patients. On the other hand, sonograms are readily available in emergency bed-side settings, since Focused Assesment Sonography for Trauma (FAST) has become a routine procedure. This study aims to evaluate the role of bedside bladder sonography along with retrograde instillation of saline as a novel diagnostic procedure for suspected bladder trauma.
Materials and Methods: Prospective evaluation of all patients with suspected bladder injuries admitted to the emergency department of Hasan Sadikin General Hospital, Bandung, Indonesia, from 2010 to 2013. Suspected urethral injury patients were excluded. Along with routine FAST procedure, bedside bladder sonography was performed concurrently with retrograde instillation of normal saline 150-200cc through a Foley catheter. The objective of *real-time* bladder sonogram was to examine the presence of peri-vesical free fluid turbulence and accumulation during saline instillation, which subsequently indicated a suspected bladder perforation. The accuracy of sonographic results were compared with CT, cystogram or intraoperative findings. Time to diagnosis was recorded. Statistical analysis was performed to evaluate the sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and diagnostic accuracy.
Results: Twenty three patients met the inclusion criteria. The mean age was 27.21 years old, 87% were males. Based on cystogram or intraoperative finding there are 21 patients have bladder rupture. Among these patients, 14 patients had positive result on bladder sonogram, and all confirmed positive on cystogram and operative finding. Nine patients had negative result on bladder sonogram. While 7 among them have positive result on cystogram or intraoperative finding. Analysis revealed 67% sensitivity, 100% specificity, 100% PPV, and 22.2% NPV. Overall diagnostic accuracy of bladder sonogram was 83.5%. Time to diagnosis were significantly shorter in bedside bladder sonogram compared to cystogram or intraoperative finding (11.82 ± 2.99 min vs. 181.30 ± 88.89 min; $p<0.05$).
Conclusions: Bedside bladder sonogram is a useful adjunct procedure for diagnosis of bladder trauma. It is time and cost effective, and can be performed in bed-side emergency setting with acceptable accuracy.

MP-14.16
Postoperative Complications following Damage Control Nephrectomy Are Associated with Concomitant Abdominal Organ Resection
Eswara J[1], Oliver J[2], Spradling K[2], Brandes S[2]
[1]Brigham and Women's Hospital, Harvard Medical School, Boston, USA; [2]Washington University, St. Louis, USA

Introduction and Objectives: Renal injuries account for 3% of all trauma admissions in the US. Severely injured patients who are unstable due to hemorrhage or metabolic derangement require damage control nephrectomy. The purpose of this study is to describe the complications associated with damage control nephrectomy performed for trauma.
Materials and Methods: From 2000–2013, 49 patients underwent emergent damage control nephrectomy as a result of blunt or penetrating traumatic injury at a single institution. Endpoints were re-hospitalization, reoperation or additional procedures due to complications.
Results: Median age at time of surgery was 24 (15-82) years and median follow-up was 11 months. Median revised trauma score and injury severity score were 7.84 and 26, respectively. Thirty-two patients underwent additional abdominal visceral surgeries (10 splenectomies, 7 liver resections or repairs, 19 small or large bowel resections or repairs, and 6 distal pancreatectomies). Median length of initial hospitalization was 13 days (range 1-49). Of the 49 patients studied, 7 (14%) died during initial hospitalization. Of the 42 who survived, 9 (21.4%) were re-hospitalized and 7 (16.7%) required reoperation or additional procedures due to complications. The median time until postoperative complication was 40 days. The most common complication was infection or abscess formation (14.2%). Of note, patients who underwent damage control nephrectomy and removal of one or more additional abdominal visceral organs had a higher rate of major complications (Clavien grade ≥ 3) within 30 days than patients who underwent emergent nephrectomy alone (30% vs. 0%, $p = 0.04$).
Conclusion: Complications are common among trauma patients who undergo damage control nephrectomies. Among patients who undergo damage control nephrectomy, repair/resection of other abdominal organs is associated with higher incidences of post-operative complications. Patients who underwent damage control nephrectomy alone, however, had very low rates of readmission, reoperation or reintervention.

MP-14.17
Management of Female Urethral Trauma
Kulkarni S, Joshi P, Rosenberg S, Surana S, Alhajeri F
Kulkarni Reconstructive Urology Center, Pune, India

Introduction and Objectives: Data on females treated for urethral trauma is from case reports and small series. The management of such patients is still evolving. We present our experience in treating urethral trauma in females and suggest an algorithm for management.
Materials and Methods: Ours is a tertiary referral center for Reconstructive Urology for a large population of 1.2 billion. This is an observational, retrospective analysis from January 1995 to July 2013. Out of 1264 urethral surgeries, 344 surgeries were for male posterior urethral trauma and 10 were female urethral trauma. One patient had acute distal urethral transection due to penetrating injury and was repaired primarily. Nine patients had delayed treatment after 3-6 months. Etiology was road traffic accident in 8, and 2 were injured by a collapsed wall. Six patients were prepubertal (4-11 years) and 4 patients post pubertal (23-45 years). Assessment included RGU/MCU, urethroscopy and antegrade cystoscopy. Antegrade cystoscopy is paramount in assessing bladder neck status and presence of stones. Urethral transection was proximal in 2, mid in 7 and distal in 1 patient. Anastomotic urethroplasty was performed in 9 patients. One patient with distal obstruction underwent meatoplasty. No patient had rectal injury. Catheters were kept for 6 weeks. Follow-up was 40.4 to 80 months. Follow-up was 3 monthly and included clinical examination, uroflow and USG.
Results: Transpubic approach with posterior pubectomy was performed in all prepubertal girls. Approach in all post pubertal females was transvaginal. In transpubic approach, cystotomy was avoided by incising posterior urethra over a sound through the suprapubic tract or endoscope. Three girls had urethra-vaginal fistula which was closed transabdominally. One girl had anastomotic leak which healed by keeping catheter for additional 2 weeks. One girl with meatoplasty required revision due to stenosis. One girl had borderline flow and was investigated and diagnosed with hypocontractile bladder. All patients were continent and had optimal flow.
Conclusions: Female urethral trauma is uncommon. Transection can occur in proximal, mid or distal urethra. Delayed repair should be preferred. Post pubertal patients should be treated with transvaginal repair. Prepubertal girls merit a transpubic approach. Cystotomy can be avoided in transpubicapproach.

MP-14.18
Epidemiology of Adrenal Injuries Requiring Adrenal Surgery
Eswara J[1], Raup V[2], Geminiani J[2], Vetter J[2], Brandes S[2]
[1]Brigham and Women's Hospital, Harvard Medical School, Boston, USA; [2]Washington University, St. Louis, USA

Introduction and Objectives: Adrenal trauma is extremely rare and current literature is lacking in data from large case series. In this study, we analyze adrenal injuries using the National Trauma Data Bank (NTDB).
Materials and Methods: We performed a retrospective analysis of the NTDB from the years 2007-2011. Patient demographics, Injury Severity Score (ISS), mechanism of injury, and blunt versus penetrating trauma, associated injuries and hypovolemic shock were assessed. Multivariable models were used to determine associations with outcomes such as need for surgery, type of surgery mean length of stay, need for ICU, and death.
Results: Of the 1,766,606 trauma cases in the data set, 8683 were identified involving one or both adrenal glands. There were 7835 blunt and 663 penetrating injuries, and 184 of these injures were isolated to the adrenal glands. Of the 8683 adrenal injuries, 80 (0.9%) required surgery. However, none of the 184 isolated adrenal injures required surgery (p=0.42). Factors associated with isolated adrenal injury include lower ISS (p<0.001), younger age (p<0.001), and penetrating injury (p<0.001). No isolated adrenal injuries were associated with death (12% vs. 0%, p<0.0001). The most common associated organ injuries were ribs (50.9%), thoracic (50.0%), liver (41.6%), vertebrae (30.9%), kidney (27.8%), and spleen (22.0%). Logistic regression showed that injures to the thorax (p=0.0014) and multiple abdominal injuries (p<0.001) were associated with a lower rate of undergoing adrenal surgery. Higher ISS score (p=0.007), penetrating injury (p<0.001), race (Black) (p=0.029) and concurrent injuries to the spleen (p<0.001) and intestines (p=0.016) were associated with a higher likelihood of requiring adrenal surgery. Older age (p<0.001), higher ISS score (p<0.001), race (Black, Other) (p=0.03, p=0.02), penetrating injuries (p<0.001) and injuries to the aorta/vena cava (p=0.008), vessels (p=0.001), thorax (p=0.03), ribs (p=0.005), stomach (p=0.02), liver (p=0.03), multiple abdominal injuries (p=0.002), and brain/spinal cord (p<0.001) were associated with a higher mortality rate.
Conclusions: Adrenal injuries are rare, comprising 0.49% of all traumatic injuries. In our database, isolated adrenal injuries were not fatal and did not require surgery. Younger age, race (Black), higher ISS score, penetrating injury, and concurrent injuries to the spleen/intestines were associated with a higher likelihood of requiring an adrenalectomy.

MP-14.19
Outcomes of Iatrogenic Genitourinary Injuries during Colorectal Surgery
Eswara J[1], Raup V[2], Brandes S[2]
[1]Brigham and Women's Hospital, Harvard Medical School, Boston, USA; [2]Washington University, St. Louis, USA
Introduction and Objectives: The purpose of this study is to quantify and categorize genitourinary injuries during colorectal surgery.
Materials and Methods: We retrospectively reviewed patients who underwent colorectal surgery at Barnes Jewish Hospital and developed iatrogenic genitourinary complications requiring surgical repair between 2003 and 2013. Endpoints included GU repair failures.
Results: There were 75 patients in this series, with a mean age of 57.5 years (22-91) at time of surgery and median follow-up of 16.7 months (0-127). Sixty-four patients had single GU repairs and 11 patients had multiple GU repairs, with 18 patients having a failure of their initial repair. Colorectal procedures included colectomies (16), lower abdominal resections (15), lower abdominal and abdominoperineal resections with total abdominal hysterectomies and bilateral salpingo-oophorectomies (13), and abdominoperineal resections (9). The most common initial GU repairs were cystorrhaphy (24), ureteroureterostomy (22), ureteroneocystotomy with psoas hitch (12), and ureteroneocystotomy (11). Secondary GU repairs included stent placement or PCN for persistent ureteral leak (5), fistula repair (3) stent placement or cystorrhaphy for persistent bladder leak (2), and repair of recurrent ureteral strictures (1). Twenty-seven patients (36%) had prior radiation and 35 patients (47%) had prior chemotherapy. Fifty patients (67%) are alive, with a 30-day mortality rate of 4%. Pre-operative radiation was associated with failure of the GU repair (11/28 vs.7/47, p=0.025). Pre-operative chemotherapy was also associated with GU repair failure (13/35 vs. 5/40, p=0.016).
Conclusion: Pre-operative radiation and chemotherapy are associated with increased repair failure rates of GU injuries during colorectal surgery.

MP-14.20
Cyclic Stretch-Induced the Synthesis and Degradation of Extracellular Matrix of Human Bladder Smooth Muscle Cells: Role of MMPs and TIMPs in This Dynamic Balance
Wang K, Bu S, Peng C, Cai X, Li H
Dept. of Urology, West China Hospital, Sichuan University, Chengdu, China

Introduction and Objectives: Mechanical stimuli is an essential factor for growth and development of bladder. The purpose of this study was to emphasize the effects of the cyclic stretch up on HBSMCs proliferation and the metabolism of ECM, and the role of MMPs/TIMPs in this process.
Materials and Methods: HBSMCs were seeded onto silicone membrane and subjected to cyclic stretch at ranges of (5%, 10%, 15%) for 16 hours, and then cultured for 8h without any stretch. RT-PCR was used to assay gene expression of ECM (Col1, Col3, Col4, En, Ln, Fn), MMPs (MMP-1, 2, 3, 7, 9) and TIMPs (TIMP-1, 2). Cell proliferation determined by EdU incorporation assay.
Results: The expression of Col1 increased in group 10%, and there was a downward trend without statistical significance when the stretch changed from 10% to 15%. Col3 increased gradually as the stretch enhanced, but there is no difference among the three experiment groups. Fn was improved significantly, and the group 10% reached the highest level. The expression of Col4, En, Ln unchanged under stretch. In group 5%, MMP-1, 3 and 7 significantly increased. When the stretch changed from 5% to 10%, MMP-1, 2, 3 and 7 increased, but only MMP-1 and 2 were significant. In group 15%, MMP-1, 2, 3 and 7 changed without statistical significance compared with group 10%. MMP-9 was scarcely affected by stretch. TIMP-1 and 2 did not increase significantly until the stretch was increased to 15%. The proliferation rate of control group and each parameter group (5%, 10%, 15%) was 7.0±1.01%, 12.9±1.75%, 20.7±2.03%, 19.7±1.81%, respectively.
Conclusion: This study showed that cyclic stretch can promote the proliferation of HBSMCs in a reasonable range. ECM and MMPs synthesis increased as the stretch rose to an optimal parameter. But in the exceeding range, the increase of TIMPs synthesis would interrupt the balance of MMPs and ECM, led to decrease of cell proliferation and accumulation of ECM. This interesting dynamic balance under cyclic stretch should bring enlightenment to tissue engineering bladder and pathogenesis of bladder diseases.

Moderated Poster Session 15
Female Urology
Tuesday, October 14
1300-1430

MP-15.01

Female Ventral Buccal Mucosa Urethroplasty: Initial Operative Experience and Outcomes

Ehlert M, Sirls L**, Burks F**
William Beaumont Health System, Royal Oak, USA

Introduction and Objectives: Female urethral strictures are uncommon and present diagnostic and treatment dilemmas. Stricture dilation is often inadequate and definitive surgical repair techniques vary. We present a simple ventral-onlay approach using buccal mucosa and short term outcomes.

Materials and Methods: A retrospective chart review of consecutive patients. Stricture etiology, prior treatments, duration of symptoms, urodynamic and imaging results were reviewed. Patient outcomes, complications, and symptom improvements were categorized.

Results: Four women aged 53-76yo, underwent ventral buccal urethroplasty between 5/2013-2/2014. Etiologies were idiopathic (1), Foley trauma (2), and radiation (1). At diagnosis, two had urinary retention, two with lower urinary symptoms. One patient demonstrated hydronephrosis, two with bladder diverticula. Mean average urinary flow was 4.9ml/sec, maximum flow 11.3 ml/sec. Mean detrusor pressure was 82 cm/H2O (25-126) and residual urine 213ml. All patients underwent transvaginal ventral buccal graft urethroplasty for strictures in the mid-urethra. This was covered in 3 layers with peri-urethral and vaginal tissue, with the radiated patient receiving Martius labial fat graft. Average time from diagnosis to urethroplasty was 7.25 years and included an average of 2 internal urethrotomies. No patient suffered renal deterioration. Voiding cystogram was performed 2 weeks post-operatively without evidence of leak. The radiation patient had breakdown of vaginal mucosa, with visible Martius graft, no other post-operative complications were noted. At mean follow-up of 3 months, average residual urine was 21 ml, and mean improvement in American Urological Association Symptom Score was 17.8. No de-novo stress incontinence has been demonstrated. One patient was noted to have narrowing at the proximal anastomosis 4 months later. Rigid cystoscopy confirmed widely patent urethra.

Conclusion: Ventral-onlay buccal mucosal graft urethroplasty is simple and effective for treatment of female urethral strictures. Patients have substantial improvement in voiding symptoms and residual urine measurements. Longer follow-up is needed to assess durability, though success in male strictures has been proven.

MP-15.02

A Single Centre Experience in the Management of Symptomatic Urethral Diverticula, with Emphasis on Different Surgical Approaches

Kuo T[1,2], Venugopal S[1], Reeves F[1], Inman R[1], Chapple C[1]
[1]Royal Hallamshire Hospital, Sheffield, UK; [2]Singapore General Hospital, Singapore, Singapore

Introduction and Objectives: Clinically significant urethral diverticula are rare, albeit they have been reported to occur asymptomatically in up to 6% of adult females. Patients may present with a lump/mass, pain, dyspareunia, voiding difficulties or recurrent infection. We present a single centre experience in the surgical management of such patients.

Materials and Methods: We retrospectively reviewed 89 patients referred with symptomatic urethral diverticula. All patients were operated by two surgeons over an eight-year period (October 2004 to November 2012). Follow-up period was ranged from 3-20 months. We find the prone position for the transvaginal approach to be effective for the majority of patients as it allows for excellent access with enhanced exposure. In addition, we have found with recurrent or complex diverticula which extend anteriorly, a dorsal supra-urethral approach with the patient in a supine position is helpful. The surgical approaches are described in detail.

Results: Early complications included one urinary tract infection and one Martius graft infection both requiring intravenous antibiotics and settled without further morbidity. A total of 72% of patients were dry and cured post operatively. Thirteen patients (15%) had de-novo SUI following surgery. Those with bothersome SUI went on to have an autologous sling at six months. All were dry, three (23%) required clean intermittent self-catheterisation. Three patients have had a recurrent residual diverticulum (3.4%) following surgery. Two patients had a repeat diverticulectomy performed via a dorsal approach with good symptomatic relief and remained continent.

Conclusions: We have found that the prone position allows excellent exposure and is recommended over a traditional lithotomy positioning, particularly in cases where access may be an issue. The dorsal supra-urethral approach is useful for diverticula that extend anteriorly, e.g. horseshoe-shaped/circumferential, sometimes towards the bladder neck or re-do cases where a previous ventral incision has been made. Both approaches should be part of the reconstructive surgeon's armamentarium.

MP-15.03

The Predictors of Recurrence and Successful Treatment following Vesico-Vaginal Fistula Surgery: A Single Centre Experience at Saint Luc Hospital, Kisantu, Democratic Republic of Congo

Nkumu Loposso M[1], Hakim L[1], Ndundu J[2], Ost D[3], De Win G[3], Van der Aa F[1], Punga Maole A[4], De Ridder D[1]
[1]Dept. of Urology, University Hospitals Leuven, Leuven, Belgium; [2]Dept. of Surgery, Saint Luc Hospital, Kisantu, DRC; [3]Dept. of Urology, University Hospital Antwerpen, Antwerpen, Belgium; [4]Dept. of Surgery, Div. of Urology, Kinshasa University, Kinshasa, DRC

Introduction and Objectives: In this study, we determined the factors contributing to recurrence and successful treatment of VVF in a single Centre at Saint Luc Hospital, Democratic Republic of Congo.

Materials and Methods: One hundred-sixty data from vesico-vaginal fistula patients in the saint Luc hospital, Kisantu (DRC) were retrospectively collected between 2007 and 2013. Patients underwent surgery as treatment and followed-up for 3 months when they were evaluated. Successful treatment was defined as dry pads following surgery at 3 months follow-up, while recurrence was defined as wet pads persistently or after a period of dryness following surgery during the same period. The Waldijk-classification system was used prior to treatment to categorized patients as category I, IIAa, IIAb, IIBa, IIBb and III. Location of fistula was differentiated between urethral or other locations. Univariate and multivariate (stepwise method) analysis for recurrence and successful treatment were performed using logistic regression, corrected for pre-operative characteristics (POC), location of fistula (LF), size of fistula (SF) and event of fibrosis (FB). Similar method was used to identify the predictors for recurrence and successful treatment following surgery, corrected for intra-operative characteristics: flap procedure (FP), ureteral reimplantation (UR), urethral repair (URR).

Results: The median age was 29.11±9.6 years. Patients were categorized as category I (57.2%), IIAa (10.2%), IIAb (3.6%), IIBa (1.2%), IIBb (7.2%) and III (20.5%). Based on the pre and post-operative Waldijk-classification system, patients were considered completely cured, partially cured (down-staged), persistent and up-staged as 71.7%, 15.67%, 12% and 0.6% respectively. FB and LF were found to be independent predictors for recurrence. Vesico-vaginal patients with fibrosis were 2.95-fold (95% CI 1.31-6.62, p=0.0088) at higher risk for recurrence following surgery in comparison to those without fibrosis, meanwhile fistula at urethral location had 3.57-fold risk (95% CI 1.53 – 8.35, p=0.0033) of recurrence compared to other locations. Similarly, FB and LF

were also proven as independent predictors for successful treatment. Vesico-vaginal fistula patients with fibrosis were 68%-less likely (OR 0.32, 95% CI 0.14-0.73; p=0.0065) to reach a successful treatment following surgery in comparison to those without fibrosis. On the other hand, fistula at urethral location were 73%-less likely (OR 0.27, 95% CI 0.11 – 0.63, p=0.0024) to end up with successful treatment compared to other locations. None of the intra-operative characteristics (FP, UR and URR) were proven to be predictors for recurrence or successful treatment.
Conclusion: This study showed the impact of fibrosis and urethral location on the possibility of recurrence following surgery. A more extensive-particularly technique needs to be considered to treat VVF patients with fibrosis and/or urethral location.

MP-15.04
Vaginal Flaps for Repair of Vesico-Vaginal Fistulae
Seth A, Sharma J, Saini A, Singh A
All India Institute of Medical Sciences, New Delhi, India

Introduction and Objectives: Trans-vaginal repair of vesico-vaginal fistula (VVF) usually involves separation of bladder wall from vagina, freshening of edges, closure in layers and possible interposition of labial fat. We describe the use of vaginal flaps in situations where this is not possible.
Materials and Methods: From January 2009 to December 2013, 23 patients underwent trans-vaginal repair of VVF in our unit. Seventeen of these underwent the standard technique and 6 patients needed vaginal flaps. Four of these 6 were obstetric fistulae due to obstructed labour and two were after hysterectomy. One of the hysterectomies was trans-abdominal and the other was laparoscopic. Three of the obstetric and the laparoscopic hysterectomy patient had undergone previous attempts at VVF repair before presenting to our unit. Two of these were trans-abdominal and two were trans-vaginal. The size of the fistula varied from 1cm to 3cm. Reasons for using vaginal flaps were proximity to ureteric orifice in two cases, reduced bladder capacity in two cases, high VVF with previously failed trans-abdominal repair in one and fistula adherent to pubic bone in one case. Vagina was pre-treated with twice daily application of estrogen cream for a period of six weeks to make it supple and vascularised. One sided vaginal flap was used in the two patients with proximity to the ureteric orifice and in the patient with fistula adherent to the pubic bone. Two vaginal flaps (each flap based on each lateral edge of the fistula) were used in the two patients with reduced bladder capacity) and four flaps were used in the patient with high VVF with previously failed trans-abdominal repair. The technique involved mobilizing the vaginal flap and flipping it in to bridge the defect on the bladder side. Subsequently the vaginal walls would be mobilized to make the second layer of repair.
Results: Five out of six repairs worked. The sixth patient with the fistula adherent to the pubic bone needed another trans-vaginal repair after 4 months which was successful.
Conclusion: Use of vaginal flaps adds a versatile technique to trans-vaginal repair of VVF in difficult situations.

MP-15.05
Surgical Repair of Iatrogenic Vesicovaginal Fistula
Hinev A[1], Anakievski D[1], Kosev P[1], Ivanov S[2]
[1]Dept. of Urology, Medical University, Varna, Bulgaria; [2]Dept. of Obstetrics and Gynecology, Medical University, Varna, Bulgaria

Introduction and Objectives: Due to the high risk of recurrence, the surgical repair of iatrogenic vesicovaginal fistula is a real challenge, even for experienced urologists. The aim of this study was to evaluate the factors, contributing for the success of the procedure, and to present our current surgical technique, with the new modifications made in the last few years.
Materials and Methods: Between March 2004 and March 2014, a total of 22 women underwent surgical repair for iatrogenic vesicovaginal fistula at our institution. Mean patient age was 46.2 years (range 16 to 67 years). The fistula occurred after urological (1) or gynecological (21) operations, performed for benign (10), or malignant (12) diseases. In 9 of these cases the fistula was recurrent, and a few (1 to 4) unsuccessful attempts to close it had been previously done at other institutions. Beside total hysterectomy, due to gynecological malignancies, adjuvant pelvic radiotherapy had been also applied in 8 of the cases. Our standard surgical technique included: low midline laparotomy; sectio alta; insertion of ureteral prostheses; separation of fistula edges from the bladder wall; complete excision of all devitalized tissues; closure of the defect by suturing the vagina; interpositioning of a vascularized omentum flap, and closure of the bladder by a running 3-0 polydioxanone suture. In the last 8 cases the mobilized omentum flap was replaced (in 2 cases), or supplemented (in 6 cases) by the natural collagen implant "Pelvicol™" (Bard).
Results: All surgical procedures were done without complications. The postoperative period ran smoothly in all cases. The ureteral prostheses were usually removed on the 7th day, and the urethral catheter – on the 10th day after surgery. None of the patients experienced fistula recurrence during follow-up.
Conclusion: The interpositioning of a vascularized omentum flap and/or a biological collagen implant guarantees definitive closure of iatrogenic vesicovaginal fistula and prevents fistula recurrences.

MP-15.06
Formation of a Vesicovaginal Fistula in a Pig Model
Lindberg J[1], **Rickardsson E**[1], Andersen M[2], Lund L[2]
[1]Faculty of Health Science, University of Southern Denmark, Odense, Denmark; [2]Dept. of Urology, Odense University Hospital, Odense, Denmark

Introduction and Objectives: To establish an animal model of a vesicovaginal fistula (VVF), which later can be used in the development of new treatment modalities.
Materials and Methods: Six female pigs of Landrace/Yorkshire race were used. The pigs were fully anaesthetised and through open abdominal surgery a vesicotomy was performed. An incision between the bladder and the vagina was made and the mucosa of the two organs were sutured together with soluble sutures. A Durometer Ureteral stent was introduced in to the fistula, secured in the bladder wall, allowing for the formation of a persistent fistula tract. Two pigs were used to evaluate the plausibility of the surgical technique and euthanized directly after the surgery. Six weeks post operatively cystoscopy, examining the fistula *in vivo*, was performed. Furthermore methylene blue was administered in to the bladder and leakage to the vagina was documented by video recording. Thereafter the pigs were euthanized with IV pentobarbital.
Results: Two out of four (50%) pigs developed persistent fistulas.
Conclusion: This study indicates that the use of pigs in a model of VVF can be an effective and cheap way to create a fistula between the bladder and the vagina.

MP-15.07
Pelvic Radiation is Associated with Urinary Fistulae Repair Failure and Permanent Urinary Diversion
Raup V[1], Eswara J[2], Brandes S[1]
[1]Washington University, St. Louis, USA; [2]Brigham and Women's Hospital, Harvard Medical School, Boston, USA

Introduction and Objectives: Enterourinary fistulae (EUF) and urinary-cutaneous fistulae (UCF) can be treated either with surgical repair by either excision with primary closure of the bladder using an omental, sliding, or muscle flap, or urinary diversion to allow the wound to heal by secondary intent. Permanent urinary diversion is often required to achieve adequate urinary management. Here, we review our experience with non-muscle flap repairs of EUF and UCF.
Materials and Methods: We reviewed 86 patients who underwent treatment of EUF or UCF at Barnes-Jewish Hospital between the

years 1998-2013. Of these patients, 39 underwent surgical repair of the communication (22 primary closures, 8 omental flaps, and 9 sliding flaps), while 47 patients underwent either surgical or non-surgical urinary diversion (16 catheters, 7 bilateral percutaneous nephrostomy tubes, 5 SP tubes, 16 ileal conduits, 2 colocondiuts, and 1 neobladder). Patient outcomes were assessed including post-operative fistula closure, need for permanent urinary diversion, and urinary incontinence. Multiple variables were examined for association with poor outcomes, such as age, ASA score, diabetes, coronary artery disease, hypertension, obesity, smoking status, excision vs. repair of fistulae, intraoperative urinary/fecal diversion, and prior radiation.
Results: The mean age in our series was 59 years (21-87) at time of surgery with median follow-up of 20 months (1-137). Among patients who underwent surgical repair, radiation was associated higher rates of repair failure (p=0.001), post-surgical incontinence (p<0.0001), and need for permanent urinary diversion (p=0.024). Overall, 31 of the 44 radiated patients required permanent diversion (70%), compared to 3 of the 42 non-radiated patients (7%) (p<0.0001).
Conclusions: Patients who undergo pelvic radiation prior to EUF and UCF repairs are at higher risk for developing repair failure and post-surgical incontinence. Many of these patients eventually require permanent urinary diversion, often after a long and difficult series of surgical repairs. Therefore, EUF and UCF repairs in radiated patients should be undertaken with caution, and patients should be counseled about the possibility of performing permanent urinary diversion as the primary therapy.

MP-15.08
The Management of a Neobladder Vaginal Fistula following Radical Cystectomy and Orthotopic Ileal Neobladder Formation
Hillary C, Osman N, Inman R, Chapple C
Dept. of Reconstructive Urology, Royal Hallamshire Hospital, Sheffield, UK

Introduction and Objectives: Neobladder-vaginal fistulation (NBVF) is a relatively rare complication following radical cystectomy and orthotopic ileal neobladder (ONB) formation (3-5% of patients). There are few series describing the management and subsequent outcomes of this complex condition that is more likely to occur with vaginal breach at initial surgery. We present a series of three patients over a one-year period undergoing repair of NBVF and the patient outcomes at our institution.
Materials and Methods: All patients undergoing repair of NBVF were reviewed prospectively (N=3). All fistulae were located at the neobladder urethral anastomosis and repair was achieved via a transvaginal approach in all cases. After first circumscribing the fistula tract, a submucosal tissue plane was created to separate the vaginal mucosa from the neobladder prior to closure of the neobladder defect with polyglactin suture material. Unilateral Martius flap interpositioning was performed over the repair followed by vaginal wall closure. A 16Ch two-way urethral catheter was left *in situ* until a post-operative cysto-urethrogram demonstrated the absence of contrast leak.
Results: Three patients with a mean age of 62 (range 53 – 74), underwent a primary transvaginal repair of NBVF. Fistulae were diagnosed at initial post-operative cystogram and all patients had an initial trial of conservative management. Mean time from cystectomy to NBVF repair was 395 days (range 222 – 720). Two patients had a watertight repair on post-operative cystogram and the remaing patient demonstrated a small leak, which resolved following 2 weeks of further urethral catheterization. At the 3-month clinic review following NBVF repair, all patients described stress urinary incontinence (SUI) symptoms proven on video-urodynamic assessment without associated neobladder pressure rises. Two patients underwent an autologous fascia mid-urethral sling procedure with symptom resolution. Of these, one performs CISC. The remaining patient is currently awaiting a sling procedure.
Conclusions: NBVF repair challenges even the experienced surgeon. Transvaginal repair is preferred over open surgery at our institution if feasible and is worth attempting initially over urinary diversion. SUI is common following repair so patients are counseled that this could occur. Sling procedures can achieve continence in this situation with or without CISC.

MP-15.09
Objective Findings in Patients Presenting with Pelvic Mesh Complications
Zaytoun O, Syed A, Madala A**, Nikolavsky D**
Dept. of Urology, Upstate Medical University, Syracuse, USA

Introduction and Objectives: We evaluated the true incidence of mesh related complications among patients presenting with "mesh anxiety", described objective findings and treatment outcomes in these patients.
Materials and Methods: Between August 2012 and March 2014, we identified all patients presented with complaints related to perceived mesh complications. Past operative reports were obtained. Patients were offered work-up including a complete history, pelvic exam, cystoscopy, and urodynamic study, if indicated. If objective findings of mesh extrusion, erosion, exposure, obstruction or tenderness were found, the patients were offered appropriate corrective surgery.
Results: A total of 56 patients presented with mesh related complaints. Median age was 57 years (33-85). Median time elapsed between mesh placement and presentation was 55 months (11-264). Presenting complaints included urinary incontinence in 29/56 patients (51.8%), pelvic pain in 9/56 (16%), combined incontinence and pelvic pain in 8/56 (14.2%), and others (e.g.: recurrent UTI, dysuria, stranguria, hematuria) in 10/56 (18%). Initial procedures were performed due to pelvic organ prolapse (POP) in 12/56 (21.4%), incontinence in 29/56 (51.7%), and combination of POP and incontinence in 15/56 (26.9%). Past operative reports indicated that 55/56 patients had a mesh and one patient had no mesh. Out of 56 patients, 49 had completed full work up in our institution. Of those, objective findings demonstrated mesh-related complications in only 23/49 patients (47%). Complications included extrusion into vaginal epithelium in 8/23 (35%), erosion into urinary tract in 3/23 (13%), point tenderness over the arms of the mesh in 11/23 (48%), and obstruction in 1/23 (4%). A total of 20/49 (40.8%) patients were offered mesh excision: 13/20 (65%) patients underwent an operation, 5/20 (25%) patients are awaiting their procedures and 2/20 (10%) deferred the operation. All other patients were non-surgically managed. All patients treated with mesh excision reported resolution of presenting symptoms.
Conclusions: In this study, more than half of the patients presenting with perceived mesh-related complaints did not have objective findings of mesh complications, but rather may have mesh failure or new problem. In this sub-population of patients who have objective findings, mesh removal often alleviates their symptoms.

MP-15.10
Evaluation Study between Tension–Free Vaginal Tape (TVT) and Transobturator Tape (TOT) in Treatment Stress Incontinence in Female
Darabi-Mahboub M, Keshvari M, Sheikhi Z, Ghoreifi A
Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: To evaluate short and midterm results of tension-free vaginal tape (TVT) and transobturator tape (TOT) for treatment of female stress urinary incontinence (SUI) in Imam Reza Hospital.
Materials and Methods: In this prospective randomized clinical trial study at Imam Reza Hospital between March 2008 and October 2010, a total of 100 women with stress urinary incontinence treated with tension-free vaginal tape (TVT) (n=50) or transobturator tape (TOT) (n=50) were included. Preoperative workup including case history, clinical examination, marshal and boney test, urodynamic study with abdominal leak point pressure and post void residue measurement, pad test, TV scan,

ICIQ UI and ICIQ QOL questionnaires were performed. During hospitalization type of anesthesia, operative time, hospital stay and catheter indwelling time were recorded. Postoperatively, continence status and subjective patient satisfaction were evaluated using marshal and pad test, TV scan and ICIQ UI and ICIQ QOL questionnaires in 1, 3, 6, 12 and 18 months follow-up was performed for all the patients.
Results: Mean age was 52.02±7.37 yrs for TVT group and 52.27±7.34 yrs for TOT group. The rate of the complications was similar in two groups. Operative time was 23.50±9.04 min in TVT and 25.00±9.48 in TOT (P=0.86), hospital stay time was 1.56±0.51 day in TVT and 1.52±0.47 in TOT (p=0.76), catheter indwelling time (day) was 1.58±0.41 in TVT and 1.55±0.47 in TOT (P=0.651), respectively. 1, 3, 6, 12 and 18 months after intervention, ICIQ UI and ICIQ QOL was filled for all the patients and there was no significant difference between two groups, but the rate of ICIQ (specially ICIQ QOL) after surgery was better in TVT group than TOT group.
Conclusion: Our results showed a similar efficacy and safety of TVT and TOT for women with SUI. In 18 months follow-up, TVT was not significantly effective than TOT.

MP-15.11
A Clinical Evaluation of MiniArc Precise Performed for the Treatment of Stress Urinary Incontinence: Why Are They So Effective?
Kim K, Cho S, Jung H
Kangnam Sacred Heart Hospital, Hallym University, Seoul, South Korea

Introduction and Objectives: This study was designed to evaluate the efficacy of MiniArc Precise for treatment of the SUI and to review of the various self fixating mechanisms of the tapes.
Materials and Methods: A total of 32 women patients performed MiniArc Precise for treatment of SUI were enrolled in this study, who actually complained unacceptable SUI and inconvenience in daily life. All patients were 55.2±6.3 years of age. The pad test, urodynamic study, operation time, estimated blood loss (EBL), pain scale (NRS, numeric rating scale), the duration of urethral Foley catheter and hospital stay, BMI (body mass index), postoperative outcomes and life of quality by IIQ-7 questionnaire, etc. were investigated. MiniArc procedures performed under the general (29 cases), regional (2 cases), or local anesthesia (one case) by one surgeon. The follow-up durations were 13.8±4.9 months. The IIO-7 Questionnaires were obtained by the telephone or a personal interview at the clinic.
Results: The weight of 1-hour pad test was 50gm (median). Operation times were 20.71±5.06 minutes. EBL were 27.34±21.02ml. The postoperative pain scores (NRS) were 2.75±0.84. They kept urethral Foley catheters for 2 to 24 hours and were discharged on postoperative 1st to 4th day. The IIQ-7 scores decreased from 15.25±3.2 to 1.25±1.9 (p=0.000) at mean 14 months after operation. SUI cured in 28 patients of 32 patients (87.5%). Among these 4 failed cases 3 cases showed improved in IIQ-7 score and degree of incontinence, and two patients were combined with urgency incontinence. So, the cure and the significant improvement below the moderate degree of stress incontinence achieved in 31 patients (96.9%). There were no significant correlations between the BMI and other factors (p>0.05).
Conclusion: MiniArcPrecise as a single-incision, minimally invasive, mini- and mid-urethral sling was an efficient choice for treatment of SUI and improving the quality of life with less complications and inconveniences. And it is thought that the bleeding while operation might be resulted from making a wrong way getting to the internal obturator muscle, and the shape of the self fixating extremity of the tape may be the most important for successful surgery in terms of normal voiding without incontinence nor retention, and which is need to be discussed in details.

MP-15.12
Genitourinary Disorders in Women in Postmenopausal Period
Neimark A, Shelkovnikova N**, Aliev R**
Dept. of Urology, Altai State Medical University, Barnaul, Russia

Introduction and Objectives: Urogenital disorders (UGD) are found in 30% of women over 55 years old and in 75% of women over 70 years old. The development of UGD during climacterical period is caused by sex hormones deficiency, firs of all – oestrogens. One of the widespread methods of treatment for dysuric phenomena is local application of estriol. There are a number of contraindications to oestrogens application – oestrogen dependent unknown site neoplasms and thromboembolism. The necessity of an alternative treatment for urogenital disorders in women is evident. The objective of the present research is to estimate the efficiency of a complex therapy including Depantol (dexpanthenol 0.0525g and chlorhexidine bigluconate 0.0802) for women of climacteric age suffering from urogenital disorders.
Materials and Methods: A total of 50 women at the age of 50-65 were subjected to observation. The objects underwent vaginal secretion pH test, colposcopy, vaginal status index was estimated, urinary inoculation and vaginal smear for flora were analyzed, urination diary was filled in, CUDI, cystoscopy, and vaginal mucous membrane and bladder LDF, as well as pelvis minor organs ultrasound, were examined. Two groups of objects were sorted out. The first control group (C group) was formed by 20 patients who underwent etiotropic therapy for chronic cystitis (Furamag, diuretic herbs, intravesical instillations with Synthomycine emulsion, and B vitamins). In the second group the patients were prescribed additional Depantol – 2 vaginal suppositories per day for 20 days – for vaginal mucous membrane recovery.
Results: The control study was carried out 3 and 6 months later; when the results of both – etiotropic and complex therapy – were estimated, gradual relief of the main urogenital disorders symptoms was noted. In the 1st group the disease relapsed in 50% of the objects; clinical presentation of atrophic colpitis and cystourethritis continued or even worsened. Much better results were detected in the 2nd group. No relapse of urogenital disorders were found in 70% of the patients: no urination disorders, dyspareunia, vaginal xerosis or burning, or abundant unpleasant vaginal discharges. Normal acidity of vaginal medium was kept <5, mucous membrane atrophy decreased significantly.
Conclusion: Age-related oestrogen deficiency plays the leading part in pathogenesis of urogenital disorders, it leads to vaginal and urethral epithelium proliferation abnormality, vaginal secretion changes (lactobacilli extinction, pH increase), and reinfection. Good tolerance, easy usage, and hormone-free composition enable to recommend Depantol to a wide range of patients with mild and medium urogenital disorders during climacterical period.

Moderated Poster Session 16
Prostate Cancer: Advanced Disease
Tuesday, October 14
1435-1600

MP-16.01
Androgen Receptor Variant-7 Plays an Essential Role in Development and Progression of Castration-Resistant Prostate Cancer
Qu Y, Ye D, Dai B, Gu C, Chang K, Fang F
Dept. of Urology, Fudan University Shanghai Cancer Center, Shanghai, China

Introduction and Objectives: The constitutively active, regardless of androgen level, ligand independent androgen receptor variants (AR-Vs) were proposed to be partly responsible for the development and growth of castration-resistant prostate cancer (CRPC). Among the numerous AR-Vs identified so far, androgen receptor variant-7 (AR-V7) is one of the most abundant and the best characterized variants. In the present study, we investigated the role of AR-V7 expression in the development of CRPC and determined whether the expression of AR-V7 in CRPC tissues could predict cancer-specific survival.
Materials and Methods: We enrolled 104 newly diagnosed metastatic prostate cancer (PCa) patients, 46 CRPC patients, 20 clinically localized PCa patients and 10 benign prostatic hyperplasia (BPH) patients, who underwent prostate biopsy, transurethral resection of the prostate or radical prostatectomy at our institution. The expression of AR-V7 was assessed by immunohistochemistry in primary tumor for all patients. Cox proportional hazards models were used to evaluate the predictive role of all covariates in the development of CRPC. Time to CRPC and cancer-specific survival curves were estimated using the Kaplan-Meier method and compared by the log-rank test.
Results: The AR-V7 detection rate in CRPC was significantly elevated compared with newly diagnosed metastatic PCa ($P < 0.001$), with localized PCa ($P < 0.001$), and with BPH ($P = 0.001$). Multivariate analysis revealed that AR-V7 expression ($HR = 2.627$, $P = 0.001$) and prostate-specific antigen (PSA) nadir ($HR = 1.012$, $P = 0.019$) were independent predictive factors for the development of CRPC after adjusting for age, PSA, Gleason score, stage, time to PSA nadir and PSA half-life (PSAHL). Furthermore, the expression of AR-V7, which inversely correlates with serum PSA level, is associated with a shorter survival in CRPC patients.
Conclusion: The protein AR-V7 level in primary tumor can be used as a predictive marker for the development of CRPC and as a prognostic factor in CRPC patients. Moreover, therapy targeting AR-V7 may help prevent PCa progression and improve prognosis of CRPC patients.

MP-16.02
Up-Regulation of COL6A1 Results in Cell Migration and Invasion and Predicts the Metastasis of Prostate Cancer
Shen Y, Wan F, Wang H, Zhang G, Dai B, Ye D
Dept. of Urology, Fudan University Shanghai Cancer Center, Shanghai, China; and Dept. of Oncology, Shanghai Medical College, Fudan University, Shanghai, China

Introduction and Objectives: The effective prognostic biomarkers, specific to the advanced stage, are urgently needed for better prediction and management of prostate cancer (PCa). COL6A1 is one of the three major subunit of collagen VI which is an important Extracellular matrix (ECM) protein, and involves in multiple signaling pathways that regulate apoptosis, proliferation, angiogenesis, fibrosis, and inflammation. Recent studies demonstrated COL6A1 was overexpressed in cancers and associated with tumor progression. In this study, we investigated the biological function and prognostic value of COL6A1 in PCa, found by our group among a panel of differentially methylated genes by DNA methylomic analysis.
Materials and Methods: The DNA methylation status of COL6A1 gene was confirmed by bisulfite-sequencing PCR, and expression pattern was determined by qRT-PCR and western blot. Cell invasion and migration was analyzed using transwell and wound healing assay. The expression level of COL6A1 protein in 223 prostate adenocarcinoma and 40 non-cancer tissues were determined by immunohistochemistry.
Results: The expression level of COL6A1 gene was negatively correlated with the methylation status of its 2nd exon in PCa cell lines. COL6A1 was a positive regulator of both cell invasion and migration and correlated with the expression of MMP-9 and CXCR4. The expression level of COL6A1 protein was significantly higher in patients with advanced stage, as bone and/or lymph node metastasis, than that in patients with early stage of PCa.
Conclusion: The up-regulation of COL6A1 results in cell migration and invasion and may serve as a promising biomarker to predict the metastasis of PCa.

MP-16.03
Microstructural Analysis for Novel Bone Metastatic Model of Prostate Cancer by Micro CT
Hirata T[1], Park S[2], Muldong M[2], Strasner A[2], Kulidjian A[3], Nasu Y[1], Kumon H[1], Kane C[2], Masuda K[3], Jamieson C[2]
[1]Dept. of Urology, Okayama University Hospital, Okayama, Japan; [2]Dept. of Urology, Moores Cancer Center, University of California, San Diego, USA; [3]Dept. of Orthopaedic Surgery, School of Medicine, University of California, San Diego, USA

Introduction and Objectives: We have already established the novel metastatic prostate cancer model in mice. In that model, we used bone metastatic cancer cells directly deprived from the prostate cancer patients, and we can create the similar condition as clinical patients with bone metastasis by using this model. The object of this study is to evaluate microstructural changes in this humanized bone metastatic model of prostate cancer by micro CT analysis.
Materials and Methods: Tumor cells were directly isolated from the bone metastatic region of the prostate cancer patients. Isolated cells were named as PCSD. PCSD and Mitrigel were transplanted into the right femurs of Rag2(-/-);γc(-/-) mice by the needle injection via condyle of the femur. Thirteen mice with needle holes and tumor formation were picked up for PCSD group, and 8 mice with needle holes for Control group respectively. The microstructural analysis was carried out by micro-CT using the commercial equipment SkyScan.
Results: Significant changes were observed in PCSD group on both 2D and 3D images. The right femur length was shorter than the left femur in both groups, however, the diameter of the bone shaft of the right femur was broadened only in PCSD group ($p<0.01$). Bone volume and total volume ratio (BV/TV) and bone volume (BV) were significantly decreased in the proximal and distal area in PCSD group ($p<0.01$ respectively), however, BV was significantly increased in the cortex bone in the middle of bone shaft in PCSD group ($p<0.05$). Trabecular bone didn't show much difference between PCSD group and Control group, however, the changes in trabecular bone could be divided into either osteolytic or osteoblastic nature.
Conclusion: Osteolytic and osteoblastic or mixed changes were confirmed in all samples. Abnormal bone extention to the lateral side was observed in PCSD group. As a whole, Distal and proximal of the femur have an osteolytic nature, and cortical bone has an osteoblastic nature. The changes of trabecular bone could be devided into two ways of osteoblastic or oteolytic character.

MP-16.05
Radical Prostatectomy for High-Risk Prostate Cancer: Long-Term Oncological Outcomes
Veliev E[1,2], **Sokolov E**[1], Loran O[1], Petrov S[3], Bogdanov A[1,2]
[1]Russian Medical Academy of Postgraduate Education, Moscow, Russia; [2]S.P. Botkins

Hospital, Moscow, Russia; [3]A.M. Nikiforov All-Russian Center of Emergency and Radiation Medicine, Saint Petersburg, Russia

Introduction and Objectives: We analyzed the long-term biochemical recurrence-free survival (BCRFS) and prostate cancer-specific survival (PCSS) in patients with high-risk (HR) prostate cancer (PC) treated with open retropubic radical prostatectomy (RP) according to the number of HR-factors and results of pathological evaluation (specimen-confined (SC) vs. non-specimen-confined (NSC) PC).
Materials and Methods: Between 1997 and 2012, 776 patients with HR-PC (clinical stage ≥ T2c and/or biopsy Gleason score 8-10 and/or prostate-specific antigen > 20 ng/ml) underwent RP at our hospital. The study comprised 446 patients who were followed up for > 12 months, had all preoperative and postoperative information available and received no neoadjuvant androgen deprivation therapy. SC disease was defined as pT2-3R0N0 PC. The Kaplan-Meier method with long-rank test was used to evaluate BCRFS and PCSS rates.
Results: Median follow-up time was 50 months (IQR: 31-74); 320 patients (71.8%) had one HR-factor, 109 (24.4%) – two HR-factors and 17 (3.8%) – three HR-factors. SC PC was found in 308 (69%) patients. At 5 and 10 years BCRFS was 65% and 62%, the 10- and 15-year PCSS was 92.6% and 82.6%. In SC and NSC groups 5-year BCRFS was 79.6% and 32.7% ($p < 0.001$); 10-year PCSS was 100% and 78.6% respectively ($p < 0.001$). Presence of > 1 HR-factor was a significant predictor of biochemical recurrence (HR 2.916; $p < 0.001$). For patients with 1, 2 and 3 HR-factors 5-year BCRFS was 76.7%, 39% and 35.3%; 10-year PCSS – 97.8%, 85.4% and 64.2% respectively.
Conclusion: RP can result in high long-term BCRFS in selected patients with HR-PC. SC disease (radical operation) provides highest BCRFS and PCSS after RP. Presence of > 1 HR-factors results in less favorable oncological outcomes. Substratification of HR-patients and individual risk-assessment are essential.

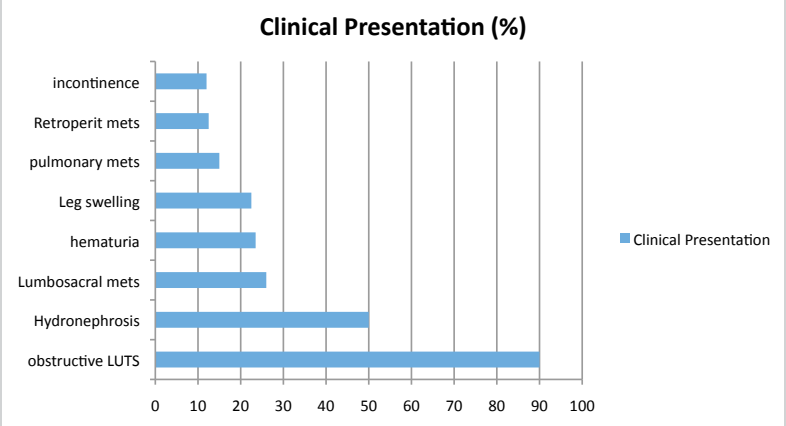
MP-16.06
Chronic Kidney Disease in Patients with Prostate Cancer: A New Epidemic?
El-Busaidy H[1], **Ngugi M[1]**, Kanyi S[2], Owillah F[1]
[1]Dept. of Surgery, University of Nairobi, Nairobi, Kenya; [2]Kenyatta National Hospital, Nairobi, Kenya

Introduction and Objectives: The incidence of prostate cancer in Kenya has increased by 75% from the last decade with over 2000 new diagnoses annually, making it only second to esophageal cancer. Chronic kidney disease (CKD) is an important sequela in advanced prostate cancer although data from Africans is scarce and absent from Kenya. We investigated the incidence of CKD associated with prostate cancer at Kenya's largest Referral Hospital.
Materials and Methods: Forty prostate cancer patients were reviewed from January 2013 to December 2013. Clinical presentation, creatinine, PSA, Gleason's score and comorbidities were analyzed.
Results: A total of 75% had metastatic disease at diagnosis. Most of the remaining patients had locally advanced disease. Mean age was 72.4 years (±10). Six patients were diabetic and 8 were hypertensive. The clinical presentation of these patients is summarized below (Figure 1). A total of 57.5% of the patients were in renal failure at presentation (serum creatinine ≥140 umol/l) and were subsequently dialyzed; 25% of the patients eventually developed CKD (eGFR ≤60 ml/min three months post-admission). Factors that were associated with CKD included metastatic disease at admission, hydronephrosis (O.R=10.5{95% CI 3.1-12.9}) and hemoglobin ≤10 g/dl (O.R=24.5{95% CI 5.2-27.4}).
Conclusion: A total of 75% of patients presented with advanced disease and highly aggressive tumors, probably one of the highest in African reports. Half of the patients had significant obstructive uropathy leading to CKD. Hydronephrosis and hemoglobin ≤10 g/dl carried the highest odds for developing CKD. Future studies should look at the outcome of these patients to mitigate on this silent killer.

MP-16.07
Satisfaction and Tolerability among Men with Advanced Hormone-Dependent Prostate Carcinoma Treated with One-Monthly Subcutaneous Administration of Degarelix in The Netherlands
Graafland N[1], Roshani H[2], Barten E[3], Jaspars J[4], **van Winkel P[5]**, Pelger R[1], Elzevier H[1]
[1]Leiden University Medical Center, Leiden, The Netherlands; [2]Haga Hospital, The Hague, The Netherlands; [3]Antonius Hospital, Sneek, The Netherlands; [4]Admiraal de Ruyter Hospital, Goes, The Netherlands; [5]Ferring Pharmaceuticals, The Netherlands

Introduction and Objectives: We assessed the satisfaction and tolerability of patients who received degarelix as primary treatment or after previous hormone treatment.
Materials and Methods: Since September 2010, 273 patients with advanced hormone-dependent prostate cancer who were treatment with degarelix, were included in this multi-center phase IV non-interventional trial in the Netherlands. Degarelix was administrated monthly subcutaneously for a maximum of three years after written informed consent was obtained. Previous hormone therapy was not a contraindication. Satisfaction was assessed six months after starting treatment and at the end of the study in the subgroup meeting the primary endpoint of PSA progression or dropping out prematurely for other reasons. For this analysis patients were divided into two groups: hormone-naïve versus previous hormone treatment.

MP-16.06, Figure 1.



LUTS: Lower Urinary Tract Symptoms Mets: Metastasis Retroperit: Retroperitoneum

MP-16.06, Table 1. Baseline Laboratory and Histological Parameters at Diagnosis

PARAMETER	AVERAGE	RANGE
Serum creatinine	**310.9 umol/L**	**72-976 umol/L**
PSA	410.8 ng/ml	27-4,079 ng/ml
Gleason's score	8.6	6-10
Hemoglobin concentration	10.2 g/dl	3.8-15.2 g/dl

Results: Mean age was 71.6 years (range, 47–92 years). There were 138 out of 273 (51%) patients who were asymptomatic. PSA level at start of treatment was <10 mg/ml in 33 (12%), 10-20 mg/ml in 37 (14%), 20-50 mg/ml in 63 (23%) and >50mg/ml in 139 (51%) patients, respectively. Two hundred (73%) patients were hormone-naïve. Treatment satisfaction could be evaluated in 196 men. Monthly administration was considered a satisfactory frequency by 162 (82%) men, while 34 (18%) patients perceived it as being too often. No differences were observed between those who were hormone-naïve or previously treated with other hormone therapy (82% vs. 84% satisfaction, respectively). The one monthly nurse visits was perceived to be too often by only 9 patients (5%), without differences between the two patients groups (hormone-naïve vs. hormone-pretreated). End of study satisfaction could be evaluated in 121 patients. Among these, degarelix was poorly tolerated by 13 (11%) patients. The remaining 109 men tolerated treatment very well in 7 (6%), well in 67 (55%) and fairly in 34 (28%) patients, respectively. No differences were observed when patients were stratified according to administration of injections by (specialized) nurse-service, general practitioner or urologist.
Conclusion: In this study, one monthly administration of degarelix was well accepted among men with advanced hormone-dependent prostate cancer. No differences in patients' satisfaction were observed between those being hormone-naïve or with a history of previous hormone treatment.

MP-16.08
Delayed Hormonal Therapy Could Be an Option in Selected Patients with Lymph Node Metastases after Surgical Treatment
Nyushko K, **Alekseev B**, Krasheninnikov A, Kalpinskiy A, Golovashenko M, Moskvina L, Kaprin A
Moscow Hertzen Oncology Institute, Moscow, Russia

Introduction and Objectives: Lymph node invasion (LNI) is a poor prognostic factor in prostate cancer (PC) patients (pts) undergone radical prostatectomy (RPE) and pelvic lymph node dissection (PLND) and often require immediate adjuvant hormonal therapy (ADT). The question if ADT could be delayed is controversial. The aim of the study was to assess biochemical progression-free survival (BPFS) in different prognostic subgroups of LN positive PC pts.
Materials and Methods: Retrospective analysis of 1430 PC pts undergone RPE and PLND since 1998 till 2014 was done. LN metastases were verified in 229 (16%). Mean PSA level was 23.8±23.3 ng/ml; mean percentage of positive biopsy cores (PPBC) was 76.4±27.7%. Clinical stage was T1b-T2c in 111 (48.5%), T3a-T3b – in 118 (51.5%). Biopsy Gleason score ≤6 was verified in 57 (24.9%) pts; 7 (3+4) – in 58 (25.3%); 7 (4+3) – in 68 (29.7%) and 8-10 – in 37 (16.2%); not assessed in 9 (3.9%) pts. Low risk PC was verified in 5 (2.2%) pts, intermediate risk – in 44 (19.2%) pts and high risk – in 180 (78.6%) pts. Biochemical recurrence (BR) was assessed as elevation of PSA>0.2 ng/ml on three consecutive measurements. Pts with immediate ADT after the operation were excluded.
Results: Mean number of LN removed was 23±9 (2-53). Mean follow-up time was 29.6±24.9 months (3-125 months). BR was observed in 91 (39.7%) pts. 3-year biochemical progression-free survival (BPFS) was 21.1±4.6%. 3-year BPFS in subgroup of pts undergone extended vs. standard PLND was 27.9±6.8% and 15.3±5.6%, respectively (p=0.02); in pts with ≤2 positive LN vs. >2 positive LN it was 33.1±6.9% and 6.8±4.3%, respectively (p=0.0002); in pts with positive LN density <15% vs. ≥15% was 30.3±6.4% and 7.3±4.7% (p=0.001) and in pts with presence of metastatic LN extra capsular extension (LN ECE) vs. absence of LN ECE it was 9.2±5.2% and 31.8±8.2%, respectively (p=0.003). In pts with LN metastases only in 1 anatomical region vs. in ≥2 regions 3-year BPFS was 33.2±7.1% and 9.4±4.8%, respectively (p=0.008).
Conclusions: In LN positive pts underwent RPE and extended PLND with ≤2 positive LN, LN density <15%, absence of LN ECE and only 1 anatomical region involved delayed ADT could be an option.

MP-16.09
The PREVAIL Study: Primary and Non-Visceral/Visceral Disease Subgroup Results for Enzalutamide-Treated Men with Metastatic Castration-Resistant Prostate Cancer
Saad F[1,2], Evans C[3], Higano C[4,5], Keane T[6], Andriole G[7], Iversen P[8], Miller K[9], Kim C[10], Kimura G[11], Armstrong A[12], Sternberg C[13], Loriot Y[14], De Bono J[15], Noonberg S[16], Mansbach H[16], Bhattacharya S[16], Perabo F[17], Beer T[18], Tombal B[19]
[1]University of Montreal Health Center, Montreal, Canada; [2]CRCHUM, Montreal, Canada; [3]UC Davis Cancer Center, Sacramento, USA; [4]University of Washington, Seattle, USA; [5]Seattle Cancer Care Alliance, Seattle, USA; [6]Medical University of South Carolina, Charleston, USA; [7]Washington University School of Medicine, St. Louis, USA; [8]Rigshospitalet, Copenhagen, Denmark; [9]Charité - Universitätsmedizin Berlin, Berlin, Germany; [10]Asan Medical Center, Seoul, South Korea; [11]Nippon Medical School Hospital, Tokyo, Japan; [12]Duke University Medical Center, Durham, USA; [13]Azienda Ospedaliera San Camillo Forlanini, Rome, Italy; [14]Institut Gustave-Roussy, Paris, France; [15]Royal Marsden Hospital, London, UK; [16]Medivation Inc., San Francisco, USA; [17]Astellas Pharma, Northbrook, USA; [18]OHSU Knight Cancer Center, Portland, USA; [19]Cliniques Universitaires Saint-Luc, Brussels, Belgium

Introduction and Objectives: Enzalutamide (ENZA), an oral androgen receptor inhibitor, improved overall survival (OS) in metastatic castration-resistant prostate cancer (mCRPC) patients (pts) who had received prior docetaxel.

MP-16.09, Table 1.

	With visceral disease		Without visceral disease		All patients	
	ENZA (n=98)	Placebo (n=106)	ENZA (n=774)	Placebo (n=739)	ENZA (n=872)	Placebo (n=845)
Median* OS (months)	27.8	22.8	NYR	30.2	32.4	30.2
	HR (95% CI)=0.82 (0.55, 1.23)		HR (95% CI)=0.69 (0.57, 0.83)		HR (95% CI)=0.71 (0.60, 0.84); P<0.0001	
Median* rPFS (months)	NYR	3.6	14.1	4.0	NYR	3.9
	HR (95% CI)=0.28 (0.16, 0.49)		HR (95% CI)=0.17 (0.14, 0.22)		HR (95% CI)=0.19 (0.15, 0.23); P<0.0001	
Median* Time to cytotoxic chemotherapy (months)	22.6	6.6	28.4	11.6	28.0	10.8
	HR (95% CI)=0.30 (0.20, 0.45)		HR (95% CI)=0.36 (0.31, 0.42)		HR (95% CI)=0.35 (0.30, 0.40); P<0.0001	

*Based on Kaplan Meier estimate; NYR: not yet reached

The PREVAIL study examined the impact of ENZA on OS and radiographic progression-free survival (rPFS) in asymptomatic or mildly symptomatic chemotherapy-naïve men with mCRPC that had progressed on androgen deprivation therapy. Based on statistically significant benefits for ENZA in OS and rPFS, the Data Monitoring Committee recommended stopping PREVAIL at the interim OS analysis. Here we report primary endpoints and subgroup analyses for pts with and without visceral disease (liver and/or lung) at screening.
Materials and Methods: This double-blind, multinational study randomized pts 1:1 to ENZA 160 mg/day or placebo. OS and rPFS were coprimary endpoints. Planned sample size was 1680 with 765 deaths to achieve 80% power to detect a target OS hazard ratio (HR) of 0.815 with a 2-sided type I error rate of 0.049 and a single interim analysis at 516 (67%) deaths. Prespecified subgroup analyses evaluated OS and rPFS in pts with and without visceral disease using the same statistical methodologies.
Results: A total of 1717 men were randomized (1715 treated), including 204 pts (11.9%) with visceral disease at screening (63.7% lung and 36.3% liver and/or lung). Pts without visceral disease (n=1513) had lower baseline median PSA than pts with visceral disease (46.8 and 72.5 ng/mL, respectively), better performance status (68.9% and 61.8% ECOG PS=0), less lymph node disease (49.8% and 57.8%), but similar rates of bone disease (83.7% and 80.4%). Endpoint results by subgroup are shown in Table 1.
Conclusions: Treatment with enzalutamide significantly improved OS and rPFS in men with chemotherapy-naïve mCRPC. Although pts with visceral disease progressed more rapidly regardless of treatment allocation, the benefit of enzalutamide was consistent among pts with or without visceral disease.

MP-16.10
Enzalutamide Monotherapy: 1-Year Extended Follow-Up of a Phase 2 Study in Hormone-Naive Prostate Cancer Patients
Tombal B[1], Borre M[2], Rathenborg P[3], Werbrouck P[4], Van Poppel H[5], Heidenreich A[6], Iversen P[7], Braeckman J[8], Heracek J[9], Baskin-Bey E[10], Ouatas T[10], Perabo F[11], Phung D[10], Hirmand M[12], Smith M[13]
[1]Institut de Recherche Clinique, Université Catholique de Louvain, Brussels, Belgium; [2]Aarhus University Hospital, Aarhus, Denmark; [3]Herlev University Hospital, Herlev, Denmark; [4]AZ Groeninge Kortrijk, Kortrijk, Belgium; [5]UZ Leuven, Leuven, Belgium; [6]Klinik und Poliklinik für Urologie, RWTH University Aachen, Aachen, Germany; [7]Rigshospitalet, University of Copenhagen, Copenhagen, Denmark; [8]UZ Brussel, Brussels, Belgium; [9]Univerzita Karlova v Praze, Prague, Czech Republic; [10]Astellas Pharma Global Development, Leiden, The Netherlands; [11]Astellas Pharma Global Development, Northbrook, USA; [12]Medivation Inc., San Francisco, USA; [13]Massachusetts General Hospital Cancer Center, Boston, USA

Introduction and Objectives: The efficacy and safety of enzalutamide monotherapy was assessed in men with any-stage hormone-naive prostate cancer eligible for androgen-deprivation therapy (ADT). The primary endpoint of PSA response rate (≥80% PSA decline between baseline and week 25) was 92.5% (Tombal B et al, EAU 2013). The median (range) maximum PSA decline from baseline to week 25 was –99.6% (–100, –86.5). 1-year extended follow-up data are presented.
Materials and Methods: In an open-label, single-arm Phase 2 study (NCT01302041), men ≥18 years with histologically confirmed prostate cancer requiring ADT, non-castrate testosterone (≥8 nmol/L), PSA ≥2 ng/mL at screening, and a life expectancy of ≥12 months, received 160 mg enzalutamide once daily until disease progression or unacceptable toxicity. Other endpoints included changes in hormone levels, metabolic parameters, bone mineral density (BMD), safety, and quality of life (QoL).
Results: Sixty seven men were enrolled. Median (range) age was 73 years (48–86); 38.8% had metastases; 35.8% and 23.9% had undergone prior prostatectomy and radiotherapy, respectively. Fifty four men (80.6%) completed 1 year of treatment with a PSA response rate of 100% and 53 (98.1%) had ≥90% PSA decline from baseline. The median (range) maximum decline in PSA was –100% (–100, –86.5) from baseline to 1 year. Luteinising hormone and testosterone were increased from baseline by 215.2% and 101.7%, respectively. Mean changes from baseline for fasting metabolic variables were: +5.0% total cholesterol, +8.9% triglycerides, –3.5% HbA1c, and +19.7% insulin resistance (HOMA-IR). Total body BMD was maintained (–0.3% from baseline). The most frequently reported treatment-emergent AEs were gynaecomastia (47.8%) and fatigue (38.8%). Seven non-drug-related serious AEs were reported. Qol scores at 1 year demonstrate maintenance of global health status and a decrease in sexual activity and sexual functioning.
Conclusion: Extended follow-up of hormone-naive patients demonstrated sustained PSA reductions up to 1 year of enzalutamide monotherapy. Endocrine and metabolic changes, and AEs were consistent with potent AR inhibition and similar to results reported at 25 weeks.

MP-16.11
Chemotherapy-Driven Transcriptome Profiles from Pre- and Post-Treatment Prostatic Biopsies of Patients with Advanced Hormone-Naive Prostate Cancer
Rajan P[1], Stockley J[1], Sudbery I[2], Fleming J[1], Hedley A[1], Kalna G[1], Sims D[2], Ponting C[2], Heger A[2], Robson C[3], McMenemin R[4], Pedley I[4], **Leung H**[1]
[1]CR-UK Beatson Institute, Glasgow, UK; [2]CGAT, Oxford, UK; [3]Newcastle University, Newcastle-upon-Tyne, UK; [4]Newcastle-upon-Tyne Hospitals NHS Foundation Trust, Newcastle-upon-Tyne, UK

Introduction and Objectives: Although chemotherapy for prostate cancer (PCa) can improve patient survival, some tumours are chemo-resistant. As tumour molecular profiles may be predictive of treatment response, we studied the feasibility of transcriptome profiling of pre- and post-treatment biopsies from patients with advanced hormone-naive prostate cancer treated with docetaxel chemotherapy and androgen deprivation therapy (ADT).
Materials and Methods: RNA sequencing (RNA-seq) was performed on prostatic biopsies from four patients with locally-advanced/metastatic PCa before and ~22 weeks after docetaxel and ADT initiation. Differentially-regulated genes in treatment pairs were identified, and pathway enrichment analyses undertaken. Flow cytometry was performed on PCa cells to determine the functional effect of docetaxel.
Results: RNA-Seq identified 298 and 277 genes up- and down-regulated genes at least 2-fold, respectively (False Discovery Rate [FDR] <0.05), in response to docetaxel plus ADT. Pathway analyses revealed enrichment for cell cycle (but not apoptosis/cell death) expression changes. We demonstrate docetaxel-induced G2/M arrest and sub-G0/G1 accumulation of androgen-responsive LNCaP cells, which is enhanced and diminished by androgen deprivation, respectively. Finally, we demonstrate an inverse correlation between docetaxel-induced G2/M arrest and apoptosis.
Conclusions: Identification of chemotherapy-driven PCa transcriptome profiles is feasible and informative. ADT may diminish the cytotoxic effects of docetaxel chemotherapy in the context of hormone-naïve PCa.

MP-16.12
Cohort Compassionate Use Program with Cabazitaxel Plus Prednisolone in Patients with Metastatic Castration-Resistant Prostate Cancer (mCRPC) Previously Treated with Docetaxel: Data in Thai Patients
Pripatnanont C[1], Srimuninnimit V[2], Reungpoca P[3], Sriurapong V[4], Akarasakul D[5], Chansriwong P[6], Arpornwirat W[7]
[1]Prince of Songkla University, Songkla, Thailand; [2]Siriraj Hospital, Mahidol University, Bangkok, Thailand; [3]Phramongkutklao Hospital, Bangkok, Thailand; [4]King Chulalongkorn Memorial Hospital, Bangkok, Thailand; [5]Rajavithi Hospital, Bangkok, Thailand; [6]Ramathibodi Hospital, Mahidol University, Bangkok, Thailand; [7]National Cancer Institute, Bangkok, Thailand

Introduction and Objectives: Cabazitaxel is a next generation taxane specifically developed to overcome resistance to older taxanes. Compassionate use program (CUP) was established to provide access to cabazitaxel before the approval and to evaluate safety and tolerability of this agent in a real-world population. The objectives are to allow access to cabazitaxel before it is commercially available in patients with m CRPC whose disease has progressed during or after docetaxel treatment, and who have similar disease and baseline characteristics to those evaluated in TROPIC trial and to document the overall safety of cabazitaxel in these patients.
Materials and Methods: Between July 2012 and May 2013, a total of 40 mCRPC patients received cabazitaxel 25 mg/m^2 intravenously every 3 weeks in combination with predisone/prednisolone 10 mg oral, daily until disease progression, death, unacceptable toxicity, physician's decision or patient's refusal. Granulocyte colony-stimulating factor (G-CSF) was administered as primary and secondary prophylaxis as per physician's discretion.
Results: Mean/Median age of the patients was 70.3/72 years (range 50-83) 14 patients (35%) were ≥75 years old; 95% were ECOG PS 0-1. Mean/Median cumulative dose of prior D was 422.7/450.0 (range 180.0-825.0) mg/m^2. The mean/median time from last dose of D to inclusion was 6.59/3.22 (range 0.7-45.0) months; 61.5% of patients experienced disease progression <3 months after D. Sixty five percent of patients had ≥2 metastatic sites; the most common were bone (92.5%). Mean/Median cycle of 7/7 (range 1-13) cycles of Cabazitaxel+Prednisolone was administered and 12 patients (30%) received ≥10 cycles. Mean/Median relative dose intensity was 100.0%/99.8% (range 96.6-106.5). G-CSF was administered to 77.5% of patients in cycle 1 (2.5% therapeutic, 25% prophylactic). Of all the patients, 97.5% experienced adverse events (all grades). The most common Grade 3-4 AEs included neutropenia 45%, anemia 15%, febrile neutropenia 12.5%, diarrhea 10%, fatigue 7.5%, vomiting 5%, and sepsis 2.5%. Five cases (12.5%) of treatment-related deaths were reported.
Conclusion: The CUP provides tolerability and safety data in Thai patients with mCRPC. Treatment with Cabazitaxel+Prednisolone was tolerable, with a manageable toxicity profile consistent with the reported data in TROPIC and CUP data in other part of the world, although the age of the Thai patients were slightly older.

MP-16.13
Effect of Neoadjuvant Docetaxel Chemotherapy Combined with Adjuvant Chemotherapy Compared with Radical Prostatectomy Alone in Patients with High Risk Prostate Cancer
Kim W[1], Kim J[2], Song C[3], Ahn H[3]
[1]Inje University, Busan, South Korea; [2]Korea Cancer Center Hospital, Seoul, South Korea; [3]Asan Medical Center, Seoul, South Korea

Introduction and Objectives: Preoperative chemotherapy with androgen deprivation therapy is under investigation, some with promising results. However, the definitive value of preoperative chemotherapy-only therapy remains unevaluated for high risk prostate cancer. We investigated the efficacy of docetaxel treatment before and after radical prostatectomy (RP) in patients with high risk prostate cancer.
Materials and Methods: Patients with high risk prostate cancer according to D'Amico criteria were prospectively randomized to one of two treatment groups: neoadjuvant chemotherapy (three cycles) followed by RP (arm A, n=27); or RP alone (arm B, n=21). Patients in arm A were treated with 75 mg/m^2 IV docetaxel every three weeks following premedication with 8 mg of dexamethasone; they then underwent RP two weeks later. After RP, 17 patients in Group A were treated with docetaxel with same schedule. The median observation time was 50.74 months in both arms.
Results: There were no differences in the age (66.6 and 64.2 years, p=0.080), pretreatment PSA levels (23.9 and 16.2 ng/mL, p=0.052), clinical stage and Gleason score between the patients in arm A and B, respectively. Grade 1-2 non-hematologic toxicities occurred in 13 patients (81.3%), none with grade 3-4 toxicities. The pathological stages were: T2 in 4 (23.5%), T3a in 8 (47.1%), and T3b in 5 (29.4%) in arm A; T2 in 5 (23.8%), T3a in 8 (38.1%), and T3b in 8 (38.1%) in arm B (p=0.914). Positive margin rate was similar between the arms in pT2 patients while in pT3 patients it was lower in arm A (37.5% vs. 90.9%, p=0.008). PSA response (> 25% reduction) after chemotherapy was observed in 8 patients (50.0%), but pathological downstaging was noted in 2 (12.5%). After RP, 6 and 7 from each group failed to reach undetectable PSA. PSA failure rate was 27.3%, 50.0% in arm A and B respectively (p=0.414).
Conclusions: Docetaxel neoadjuvant chemotherapy lowers positive resection margin in patients with high risk prostate cancer. However, pathological downstaging or immediate oncological result was observed only in a limited number of patients who demonstrated substantial PSA response. But there was no difference in biochemical recurrence free survival.

MP-16.14
Sustained Remission after Docetaxel Chemotherapy for Metastatic Castration-Resistant Prostate Cancer
Nishimura K, Ishizuya Y, Yamaguchi Y, Nakai Y, Nakayama M, Kakimoto K
Osaka Medical Center for Cancer and Cardiovascular Disease, Osaka, Japan

Introduction and Objectives: Docetaxel (DTX) chemotherapy is a standard chemotherapy for patients with metastatic castration-resistant prostate cancer (CRPC). Although substantial responses to DTX are frequently reported, sustained remission may not be expected. Here, we present patients who showed sustained remission during DTX discontinuation and analyzed their clinical parameters.
Materials and Methods: The criteria of sustained remission include PSA normalization (< 4 ng/ml), no PSA progression (> 2ng/ml PSA increase from nadir), no symptomatic or radiographic progression, DTX discontinuation, and the remission lasting 6months or longer. Patients who received DTX for metastatic CRPC in our institution were reviewed retrospectively and those patients who achieved the sustained remission were retrieved.
Results: From April 2005 to September 2013, 57 patients with metastatic CRPC were treated with triweekly DTX (75mg/m^2 every 3 weeks) or weekly low-dose DTX (25mg/m^2 days 2 and 9) with estramustine (560 mg on days 1-3 and 8-10). All patients received oral prednisolone or dexamethasone daily. Among them, 7 patients (12%) achieved the sustained remission lasting from 6 to 50 months after the last DTX (median number of cycles, 10 cycles; range 8 to 11). Median age was 76 years old (range: 59 to 82 years). Median PSA was 19 ng/ml (range: 4.7 to 139 ng/ml). Two patients could discontinue oral glucocorticoids. Six patients had bone metastasis only and a patient had lymph node metastasis only. Extent of bone disease (EOD) was graded as 0 in a patient, 1 in three patients, 2 in a patient, and 3 in two patients. Lower EOD grade was significantly associated with longer duration of the remission (p<0.05). All (7) patients were alive at the time of analysis with the survival time after DTX chemotherapy ranging from 16 to 57 months.
Conclusion: Sustained remission is achievable by DTX chemotherapy in a minority of patients with metastatic CRPC. Patients with low EOD grade may have a significant benefit from chemotherapy holiday after completion of a full course of DTX.

MP-16.15
Clinical Effect of Abiraterone Acetate in Korean Patients with Metastatic Castration-Resistant Prostate Cancer (mCRPC) according to ECOG Performance Status
Jo J, Choi J, Lee H, Kim K, Oh J, Lee S, Jeong S, Hong S, Byun S, Lee S
Seoul National University Bundang Hospital, Seongnam-si, South Korea

Introduction and Objectives: The therapeutic novel agents for metastatic castration-resistant prostate cancer (mCRPC) have rapidly expanded in recent years. Abiraterone acetate is a representative novel agent, but there was not enough data for mainly ECOG PS (Eastern

MP-16.15, Table 1. Baseline characteristics at initiation of abiraterone therapy

Chrararacteristics	ECOG 1-0 (n=3)	ECOG ≥ 2 (n=17)	p-value
Age:			
Mean (SD)	80.33 (5.51)	75.18 (7.36)	0.203
BMI:			
Mean (SD)	22.69 (1.56)	24.41 (3.32)	0.56
PSA (ng/ml) :			
Mean (SD)	151.95 (84.16)	160.04 (257.52)	0.266
Metastasis site number*			
1	3 (100)	13 (76.5)	0.643
2	0	3 (17.6)	
3	0	1 (5.9)	
Previous RT*	1 (33.3)	7 (41.2)	0.798
Previous RP*	0	4 (23.5)	0.348
Gleason score*			
7	0	2 (11.8)	0.312
8	2 (66.7)	5 (29.4)	
9	0	8 (47.1)	
10	1 (33.3)	2 (11.8)	
Prior therapy:			
Duration of ADT	29 (18.03)	35.47 (24.65)	0.921
Prior chemotherapy			
Docetaxel	3 (100)	10 (58.82)	
Docetaxel+Carbazitaxel	0	4 (23.53)	
Mitoxantrone	0	1 (5.88)	
Duration of chemotherapy, cycle	8.33 (9.24)	11.82 (8.78)	0.479
Mann-Whitney U- test; * Fisher's exact-test			
RT=radiation therapy; RP=Radical prostatectomy; BMI= body mass index; PSA= prostate-specific antigen			
PSAD= PSA density; ADT=androgen deprivation therapy			

MP-16.15, Table 2. Outcomes with abiraterone stratified belong to ECOG PS

Characteristics	ECOG 0-1 (n=3)	ECOG ≥ 2 (n=17)	p-value
Nadir PSA (ng/ml)	94.19 (53)	57.45 (78.82)	0.452
PSA decline ≥ 50%	1 (33.3)	6 (35.3)	0.948
Duration of PSA decline ≥ 50% (month)	0.68 (1.15)	0.74 (1.15)	0.925
Side effect*	0	8 (47.1)	0.125
PSA response*	2 (66.7)	8 (47.1)	0.531
Duration of treatment (month)	10.67 (6.03)	6.53 (4.32)	0.163
PSA doubling time (month)	6	2.31 (1.32)	0.019
PSA progression*	3 (100)	14 (82.4)	0.43
Radiologic progression*	0	6 (35.3)	0.219
Clinical progression*	0	4 (23.5)	0.348
* Fisher's exact- test ECOG= Eastern Cooperative Oncology Group; PSA= prostate-specific antigen; OS= overall survival PSA progression, Radiologic progression, Clinical progression were assessed by PCWG 2 criteria			

Cooperative Oncology Group Performance Status) ≥ 2.

Materials and Methods: We analysed prostate-specific antigen (PSA) nadir level, time to PSA nadir, PSA doubling time, PSA response and modes of progression on abiraterone (PSA, radiologic, clinical) in data of each patients. PSA and radiologic progression were classified as Prostate Cancer Working Group 2 criteria.

Results: We reviewed data from 20 mCRPC patients who received abiraterone acetate after docetaxel chemotherapy failure from May 2012 to March 2014 at our institution. There is no significant difference of baseline characteristics who received abiraterone acetate between patients with ECOG PS 1-0 and ≥ 2. It's shown no statistically significant difference of outcomes with abiraterone acetate stratified between patients with ECOG PS 1-0 and ≥ 2 during this period. However, Kaplan-Meier analysis demonstrated that radiologic progression free survival rate and clinical progression free survival rate might be associated with ECOG PS.

Conclusion: Although it is the retrospective small size study, favorable response of abiraterone acetate may be observed in patients with ECOG PS 0 or 1 in terms of radiologic progression free survival rate and clinical progression free survival rate.

MP-16.16

Safety Results of the Enzalutamide Expanded Access Program (EAP) in the U.S. and Canada for Patients with Metastatic Castration-Resistant Prostate Cancer (mCRPC) Previously Treated with Docetaxel

Shore N[1], Rathkopf D[2], **Saad F[3]**, Chi K[4], Olsson C[5], Emmenegger U[6], Scholz M[7], Berry W[8], Mukherjee S[9], Winquist E[10], Haas N[11], Hasabou N[12], Dmuchowski C[12], Perabo F[12], Hirmand M[13], Foley M[12], Joshua A[14], for The Enzalutamide Expanded Access Study Investigators

[1]Carolina Urologic Research Center, Myrtle Beach, USA; [2]Memorial Sloan Kettering Cancer Center, New York, USA; [3]CHUM-Hôpital Notre-Dame, Montreal, Canada; [4]British Columbia Cancer Agency-Vancouver Cancer Centre, Vancouver, Canada; [5]Columbia University Medical Center and Integrated Medical Professionals, New York, USA; [6]Sunnybrook Health Sciences Centre, Toronto, Canada; [7]Prostate Oncology Specialists Inc., Marina del Rey, USA; [8]US Oncology Inc, Cancer Centers of North Carolina, Raleigh, USA; [9]Juravinski Cancer Centre, Hamilton, Canada; [10]Western University - London Health Sciences Centre, London, Canada; [11]Abramson Cancer Center, Philadelphia, USA; [12]Astellas Pharma Global Development, Northbrook, USA; [13]Medivation Inc., San Francisco, USA; [14]University Health Network/Princess Margaret Hospital, Toronto, Canada

Introduction and Objectives: In the Phase 3 AFFIRM trial, the androgen receptor inhibitor enzalutamide improved overall survival versus placebo in patients with mCRPC who had received prior docetaxel. This open-label single-arm study monitored safety and provided access to enzalutamide for mCRPC patients pending marketing approval in the U.S. and Canada.
Materials and Methods: A total of 507 patients with mCRPC were treated at 54 sites. Patients received enzalutamide 160 mg/d until disease progression, intolerable adverse event (AE), or commercial availability. AEs and other safety measures were assessed on day 1, week 4 and 12, and every 12 weeks thereafter. No efficacy data were collected.
Results: Median age was 71 years (range 43-97). Baseline ECOG PS was 0, 1 and 2 in 27.8%, 56.1%, and 15.9% of patients, respectively. Prior prostate cancer treatments included abiraterone (76.0%), and cabazitaxel (28.6%); 24.8% of patients received both prior abiraterone and cabazitaxel. Median enzalutamide treatment duration was 2.6 months (range 0.03-9.07); data following transition to commercial drug was not collected. Reasons for discontinuation (≥5%) were transition to commercial enzalutamide (44.7%), progressive disease (33.7%), AEs (8.1%), and withdrawal by patient (5.9%). Common AEs (≥10%) included fatigue (39.1%), nausea (22.7%), anorexia (14.8%), anemia (11.8%), peripheral edema (11.4%), back pain (10.3%), vomiting (10.3%), and arthralgia (10.1%). Serious AEs in ≥1% of patients were disease progression (7.9%), pneumonia (2.0%), asthenia (1.8%), anemia (1.6%), and back pain (1.4%). Drug-related AEs leading to discontinuation occurred in 3.7% of patients. Grade ≥3 drug-related AEs were reported in 14.2% of patients, and drug-related AEs leading to death occurred in 4 patients: 1 cerebrovascular accident, 2 myocardial infarctions and 1 death not otherwise specified. Seizure was reported in 4 (0.8%) patients, of whom 3 had brain metastases.
Conclusion: In this EAP population with progressive mCRPC previously treated with docetaxel, enzalutamide was well tolerated. The safety profile was consistent with AFFIRM. Median treatment duration was shorter than in AFFIRM (2.6 vs. 8.3 months); duration on subsequent commercial drug was not collected.

MP-16.17, Table 1. Patients with PCa remaining after Radiation therapy.

Patient	Age	BCR after RT	PCa location	GS	PSA following RC
1	72	Yes	Right Seminal vesicle	3+3	0
2	75	No	Prostate	3+3	0
3	66	No	Prostate	3+4	0
4	84	Yes	Prostate	4+4	2.1
5	83	No	Prostate	5+5	0

BCR; biochemical recurrence. RT; radiation therapy. PCa; prostate cancer. GS; Gleason sum. PSA; prostate specific antigen. RC; radical cystectomy

MP-16.17
Radical Cystectomy following Radiation Therapy for Prostate Cancer: The Likelihood of Residual Prostate Cancer
Swain S, Ali A, Katkoori D, Parekh D, Umar S, Manoharan M
Miller School of Medicine, Miami, USA

Introduction and Objectives: To evaluate the likelihood of residual prostate cancer following radiation therapy in prostate cancer (PCa) patients who later underwent radical cysto-prostatectomy for muscle invasive bladder cancer.
Materials and Methods: We retrospectively reviewed data from patients who received radiation therapy for prostate cancer prior to undergoing radical cystectomy for muscle invasive bladder cancer. Biochemical recurrence following radiation therapy was defined as prostate specific antigen (PSA) of 2.0 ng/ml above nadir.
Results: Fifty one patients were included in the study. The prostate was not identified in the pathology specimen of one patient. Five (10%) had remaining prostate cancer in the final pathology (Table 1). Three out of the five patients were considered biochemical recurrence free based on the PSA 2.0 ng/ml above nadir definition. Following radical cystectomy, 4 patients had a PSA of zero. In the remaining 45 patients, prostate cancer was not identified in the prostate. However, two had prostate cancer in the lymph nodes.
Conclusion: PSA of 2.0 ng/ml definition of biochemical recurrence might not detect some patients with Prostate Cancer remaining (recurrence or residual) following radiation therapy.

Moderated Poster Session 17
Bladder Cancer: Various Topics
Tuesday, October 14
1435-1600

MP-17.01

Overexpression of the Long Noncoding RNA LOC572558 Impairs *in vitro* Bladder Cancer Cell Proliferation by Regulating p53

Zhu Y, Ye D, Dai B, Zhang H, Shi G
Fudan University Shanghai Cancer Center, Shanghai, China

Introduction and Objectives: In previous study, we identified a collection of aberrantly expressed long noncoding RNAs (lncRNAs) in bladder cancer by microarray. In the present study, we aimed to explore the expression level and the functional role of LOC572558, one of the most deregulated lncRNAs, in bladder cancer.
Materials and Methods: We determined the expression of LOC572558 in 50 pairs of bladder cancer tissue samples and control, as well as in bladder cancer cell line T24 and 5637 by real-time polymerase chain reaction assay. We then defined the biological functions of LOC572558 by CCK-8 assay, flow cytometry, wound healing assay and transwell assay. Using a high-throughput phospho-proteome array, we identified proteins that were phosphorylated and dephosphorylated in bladder cancer cells where LOC572558 expression was upmodulated by shRNA. We confirmed the findings from the array by Western blotting.
Results: We demonstrated that LOC572558 expression was markedly decreased in bladder cancer tissues and bladder cancer cell lines. Moreover, ectopic expression of LOC572558 inhibited cell proliferation, induced a S phase arrest in cell cycle and promoted cell apoptosis in T24 and 5637 bladder cancer cell lines. We further verified that over-expression of LOC572558 was associated with dephosphorylation of MDM2 and phosphorylation of p53 protein.
Conclusion: These data suggest an important role of LOC572558 in the molecular etiology of bladder cancer and implicate the potential application of LOC572558 in bladder cancer therapy.

MP-17.02

High-Throughput Screening of Chemical Compounds in Two Bladder Cancer Cell Lines at Opposite Ends of the Epithelial to Mesenchymal Spectrum

Brancato S[1], **Agarwal P**[1], Hsu I[1], Railkar R[1], Li Q[1], Griner L[2], Zhang X[2], Guha R[2], Thomas C[2], Ferrer M[2]
[1]Urologic Oncology Branch, National Cancer Institute, National Institutes of Health, Bethesda, USA; [2]Division of Preclinical Innovation, National Center for Advancing Translational Sciences, National Institutes of Health, Bethesda, USA

Introduction and Objectives: Epithelial to mesenchymal transition (EMT) may explain bladder cancer progression. We applied high-throughput screening (HTS) of oncology compounds to bladder cancer cell lines at opposite ends of the EMT spectrum to identify novel therapies for these disparate phenotypes.
Materials and Methods: We screened RT4 (epithelial) and UMUC-3 (mesenchymal) bladder cancer cell lines against 1,912 oncology-focused drugs using a 48 hr cell proliferation assay with an ATP-based readout (CellTiterGlo), and determined the activity and potency of the compounds in a dose response manner.
Results: A total of 250 compounds inhibited cell proliferation by >70% for both cell lines (Figure 1A) and included many proteasome and topoisomerase inhibitors. There were approximately 90 compounds that produced full dose responses and were more potent for each RT4 or UMUC3 by at least 3-fold change in IC_{50}s. Compounds that were potent and more cytotoxic for RT4 included many tubulin modulators and HDAC and HSP90 inhibitors (Figure 1B). Compounds that were potent and more cytotoxic for UMUC3 included many PI3K and MTOR inhibitors (Figure 1C).
Conclusion: HTS of a library of oncology compounds is an efficient way to produce a list of novel targets and therapies for cancer. We have identified compounds selective to epithelial or mesenchymal phenotypes in bladder cancer with this approach.

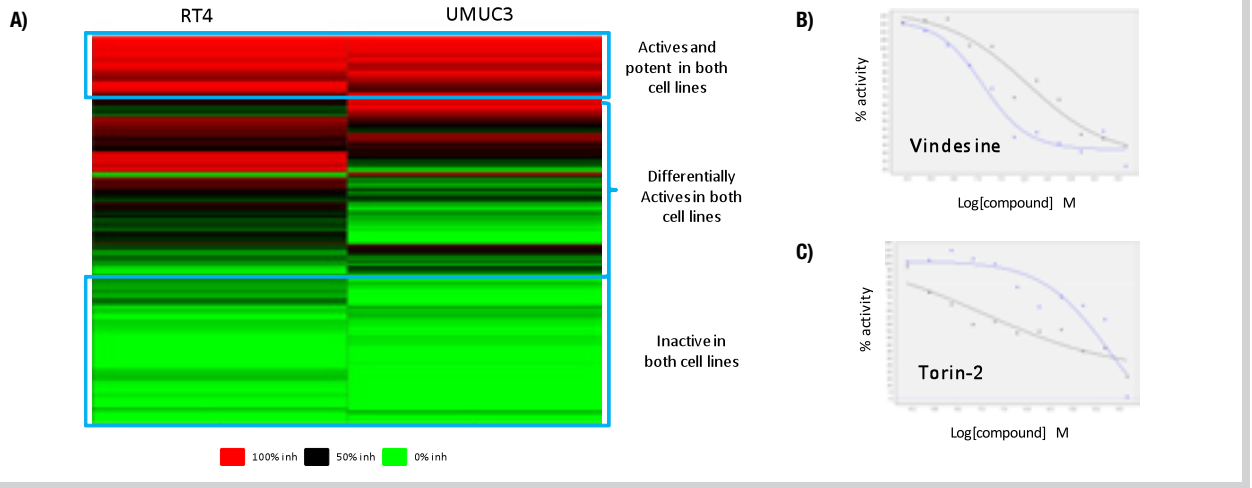
MP-17.03

The Expressions of CK20, p53, c-erb B2, and Ki-67 Were Correlated with the Prognostic Factors of Bladder Urothelial Carcinoma

Bae K, Jung H, Park J, Ko W**, Kim D**
Catholic University of Daegu, Daegu, South Korea

Introduction and Objectives: Among various tumor markers, CK20, p53, c-erb B2, and Ki-67 are most commonly expressed markers and have known as related with tumor prognosis. In this study, we try to evaluate the association between tumor prognositic factors and expression of CK20, p53, c-erb B2, and Ki-67 in bladder urothelial carcinoma (Bca).
Materials and Methods: We analyzed 497 patients who was diagnosed as Bca after transurethral resection of bladder tumor for 5 years. The expression of tumor markers of BCa was

MP-17.02, Figure 1. A) Hierarchical clustering of % inhibition at the maximum concentration tested (40 uM) for each bladder cancer cell screened. B) Example of dose responses for a compound differentially cytotoxic for epithelial RT4 cell. C) Example of dose responses for a compound differentially cytotoxic for mesenchymal UMUC3 cell.



detected by immunohistochemical staining. The association between expression of tumor markers and gender, age, number of tumor, tumor grade, tumor staging, histologic type, distant metastasis and recurrence was analyzed by Chi-square method. And the Spearman correlation was calculated between the expression of CK20, p53, c-erb B2, and Ki-67 in BCa tissues.

Results: Men were 389 and women were 108, and median age was 67.2. Recurrent patients were 211. Pathologic findings demonstrated that the expression of c-erb B2 and Ki-67 was associated significantly with tumor invasiveness (p=0.003, p<0.001) and the expression of p-53 was associated significantly with tumor grade (p=0.016). The expression of CK20 and c-erb B2 was associated significantly with pathologic staging (p<0.001, p=0.001), and the expression of CK20 was associated significantly with distant metastasis (p=0.007). The Spearman analysis indicated that the expression of CK20 has a significant positive correlation with that of c-erb B2 (p<0.001) and the expression of c-erb B2 has a significant positive correlation with that of Ki-67 (p=0.010).

Conclusions: The results suggest that the expression of CK20, p53, c-erb B2 and Ki-67 may have benefits the prediction of BCa prognosis.

MP-17.04

Deterministic Study of the Origin of Bladder Tumors Using Whole Genome Sequencing

Acar O[1], Lack N[2], Alkan C[3], Demir G[4], Ozkurt E[4], Somel M[4], Esen T[1,2]

[1]Dept. of Urology, VKF American Hospital, Istanbul, Turkey; [2]School of Medicine, Koc University, Istanbul, Turkey; [3]Bilkent University, Ankara, Turkey; [4]Middle East Technical University, Ankara, Turkey

Introduction and Objectives: Two competing theories have been proposed to explain the emergence of bladder tumors. The clonal hypothesis suggests that multifocality arises from a single founder tumor that undergoes intraluminal spread. Contrasting this, the "field effect" hypothesis suggests that these tumors arise from exposure to carcinogens that cause multiple cells to be partially transformed. To better understand this clinically important question we aimed to characterize the molecular evolution of bladder tumors.

Materials and Methods: Several samples from a single patient with multifocal bladder tumor were taken during the initial transurethral resection. We sampled the base and apex of one tumor focus, the base of a second tumour focus and the normal mucosa. Samples were sequenced by Illumina next-generation sequencing following exomic enrichment (pairwise, 100x coverage). The resulting data (2.14x108 total bp) was aligned to a reference genome to identify any potential mutations. Approximately 90% of the reads mapped to the reference sequence with PCR duplication rate of ~2%. With strict filtering a total 2,094 single nucleotide variants (SNV) were identified.

Results: Approximately half of the SNV's (n=934) were shared among all 4 samples, including the normal sample, strongly suggesting that these represent the individual's unique genotype. Of the remaining mutations the vast majority (n=926) were shared among all 3 tumor samples, but not the normal mucosa. Only ~60 SNVs were found to be private mutations in the tumor samples. Bootstrap analysis indicated that the tumor samples are significantly closer to each other than either are to the normal sample (p<0.001) strongly supporting a single origin for the separate tumors. In addition, our data demonstrated a strong bias towards TpC* mutations (where a C, preceded by a T, is mutated). Such a mutational pattern is believed to occur due to over activity of APOBEC RNA/DNA editing enzymes.

Conclusions: From these results we hypothesize that a period of early APOBEC overactivity may have lead to an increase in TpC mutations within the ancestral tumor cell. Once tumor formation commenced, mutation rates rose overall, thereby allowing secondary functional mutations to accumulate.

MP-17.05

A Prospective Study to Assess the Patterns of Recurrences in Radical Cystectomy Patients to Guide Radiological Surveillance

Nandwani G, Addla S, Singh R, Chahal R

Bradford Teaching Hospital NHS Trust, Bradford, UK

Introduction and Objectives: Follow-up radiological imaging following radical cystectomy assesses local, systemic and upper tract recurrence and functional outcomes. We prospectively assessed the patterns of recurrences to direct better use of radiological imaging in post cystectomy surveillance.

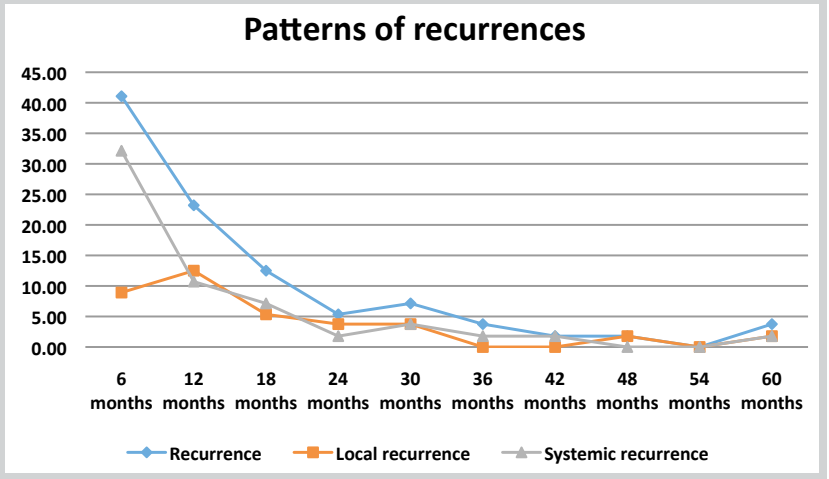
Materials and Methods: The data was prospectively collected from January 2006 to December 2013 on 184 patients from our database. Median follow-up was 48 months (1-96). CT chest abdomen and pelvis was done at 6 monthly intervals till 5 years.

Results: Recurrences developed in 56 (30.43%) patients on follow-up; of these, local pelvic and nodal recurrence occurred in 21 (11.4%) and 35 (19.02%) had systemic recurrences. Median time to local recurrence was 12 months (1 – 58) and 7 months (1 – 56) for systemic recurrence. The cancer specific survival was 78.8% at 8 years. Majority of recurrences (82.14%) occurred within 2 years and were associated with T3/T4/N+ disease. Upper tract recurrence (0.54%) was rare; obstructive uropathy developed in 16 patients (8.70%) at a median time

MP-17.05, Table 1. Pathological Stage and Recurrence Patterns

Pathological stage and recurrence patterns						
Stage	**No. of patients (%)**	**Recurrence (%)**	**Local recurrence (%)**	**Median time to local recurrence (months)**	**Systemic recurrence (%) (months)**	**Median time to systemic recurrence (months)**
pT0	35 (19.02%)	2 (5.71%)	1 (2.85%)	8	1 (2.85%)	56
pT1	25 (13.58%)	3 (12%)	1 (4%)	24	2 (8%)	24 (17 – 36)
pTis	21 (11.41%)	2 (9.52%)	1 (4.76%)	27	1 (4.76%)	25
pT2	19 (10.32%)	5 (26.31%)	3 (15.78%)	18 (18 – 22)	2 (10.52%)	22.5 (6 – 39)
pT3	29 (15.76%)	12 (41.37%)	6 (20.68%)	8 (5 – 12)	6 (20.68%)	8 (1 – 34)
pT4	12 (6.52%)	6 (50%)	2 (16.66%)	5.5 (1 – 10)	4 (33.33%)	4 (3 – 5)
pN+	43 (23.36%)	25 (58.13%)	6 (13.95%)	11 (4 – 48)	19 (44.18%)	5.5 (1 – 30)
pN1	16 (8.69%)	9 (56.25%)	4 (25%)	20.5 (8 – 48)	5 (31.25%)	12 (5 – 22)
pN2	25 (13.58%)	16 (64%)	2 (8%)	4 (4 – 4)	14 (56%)	4 (1 – 30)
Mar+	12 (6.52%)	8 (66.66%)	1 (8.33%)	1	7 (58.33%)	3 (1 – 9)

MP-17.05, Figure 1.



of 18 months (6-60) mainly on the left side of which 11 (5.97%) required intervention.
Conclusions: Two risk categories were apparent from our data which can be used to tailor radiological follow-up. Patients with low risk (pT1, pTis and pT2) should have a CT scan at 18, 24 and 36 months. Patients at high risk (pT3, pT4 and N+) should have 6 monthly CT during the first 2 years and subsequently annually till 5 years.

MP-17.07
Risk-Adapted Screening for Bladder Cancer: Results of Daily Routine Preventive Care of the Urological Health-Service Research Association IQUO, Germany
Lüdecke G[1], Geiges G[2], König F[2]
[1]Dept. of Urology, University Clinic, Giessen, Germany; [2]Initiative for Quality Management in Uro-oncology (IQUO), Berlin, Germany

Introduction and Objectives: The open-access risk assessment tool RiskCheck Bladder Cancer© was used in daily work to check asymptomatic people for the possible presence of bladder cancer over a time interval from 2010 to 2013. This was performed as a preventive care initiative to clarify the risk situation of a urological population in respect to risk exposure and the rate of detectable bladder cancer cases.
Materials and Methods: For the scientific evaluation the tool RiskCheck Bladder Cancer© was implemented in a secure web-portal of the initiative for quality management in uro-oncology (IQUO) in Germany. Over a time interval of 3 years, 598 people were interviewed, 361 with screening intention and the rest as a historical bladder cancer cohort. The preventive power for risk-adapted screening was proven in the screening cohort. Descriptive analysis and classification tree analysis were performed, significance $p<0.05$.
Results: For the screening population (361 cases) the assessment tool has an accuracy of 87.3% with a specificity of 95.2%, a sensitivity of 40.8%, a negative predictive value of 91.1%, a positive predictive value of 57.1%, a false positive rate of 4.8% and a false negative rate of 59.2%. In a classification tree analysis we found as main risk factors age, gender, type of smoker and more or less than 30 pack years of consumed smoking goods. Out of the screened population we have a detection rate of 5.5% and out of the risk population 57.1% for BC whereas 42.9% live under risk without tumor manifestation.
Conclusions: We can clearly demonstrate that preventive care in bladder cancer is effective and aim achieving using the Internet tool RiskCheck Bladder Cancer© in daily urological work. We have a strong association of detectable risk and presence of bladder cancer in an asymptomatic screening population with such a risk-adapted screening focus. In respect to the developed risk-adapted screening for lung cancer bladder cancer behave equally in relation to smoking. In consequence the tool has been adapted in screening for bladder cancer and lung cancer. It is available for everyone via Internet in 10 languages as an open-access tool and newly on iPad.

MP-17.08
Low Grade Diagnosis in T1 Non-Muscle Invasive Bladder Cancer (NMIBCa) Patients Reduces Number of Early Repeat Resections (reTUR)
Skrzypczyk M, Dobruch J, Szostek P, Nyk Ł, Szempliński S, Borówka A
Clinical Dept. of Urology, Centre of Postgraduate Medical Education, Warsaw, Poland

Introduction and Objectives: Invasion of subepithelial connective tissue, that is, the lamina propria (T1 stage) is well recognized recurrence and progression risk factor. According to International Society of Uro-Pathologist diagnosis of submucosa invasion (T1 stage) characterize aggressive cancer and should be followed by high grade diagnosis. Thus, the number of T1G1 cases should not exceed 5% of all NMIBC. In our series T1G1 is recognized in about 22% of patients. The aim of the study is to assess the recurrence rate and the influence of reTUR on recurrence rate in T1G1 NMIBC patients.
Materials and Methods: Data of 501 patients (pts) submitted to TURBT in 2005-2012 in our department due to primary bladder cancer were retrospectively analized. One hundred twenty five (25%) pts diagnosed with muscle invasive BC and 178 (35.5%) pts with follow-up period shorter than one year were excluded from further analysis. Median follow-up time was 24.5 (12-87) months.
Results: In T1G1 group 25 of 43 (56.8%) pts. had cancer recurrence. Mean (range) time to recurrence was 17.5 (3-68) months. Recurrence rate in reTUR T1G1 vs. T1G1 without reTUR were 42.8% vs. 61% respectively. In comparison the number of recurrence in TaG1 and T1G2 NMIBC were: 12 (33.3%) and 34 (44.7%). Mean (range) time to recurrence in TaG1 and T1G2 groups were: 17.8 (3-53) and 12.9 (3-62) months. Irrespective grade, recurrence rate was higher in T1 stage patients. Low grade diagnosis in T1 patients was one of the factors that influent lower number of reTUR procedures (15.9% in T1G1 vs. 44.7% in T1G2) performed in that group of patients. This may explain higher recurrence number in T1G1 group of patients.
Conclusion: Submucosa invasion is an important risk factor of recurrences. ReTUR should be considered in all T1 cases irrespective of pathological grade.

MP-17.09
Endoscopic Gold Fiducial Marker Placement into the Bladder Wall to Optimize Radiotherapy Targeting for Bladder-Preserving Management of Muscle-Invasive Bladder Cancer: Clinical Outcomes in Our Series of 27 Patients
Garcia M[1], Gottschalk A[1], Brajtbord J[1], Meng M[1], Konety B[2], Roach M[1], Carroll P[1]
[1]University of California, San Francisco, USA; [2]University of Minnesota, Minneapolis, USA

Introduction and Objectives: Bladder-preserving chemo-radiotherapy is a management option for carefully selected patients with muscle-invasive bladder cancer. However, the inability to visualize the tumor site during treatment and normal bladder movement limits targeting accuracy and increases collateral radiation. We describe our early experience with a bladder fiducial marker device and protocol we developed.
Materials and Methods: Twenty-seven consecutive patients with muscle-invasive bladder cancer (T1-T4) elected bladder-preserving treatment

with maximal TUR, radiation and concurrent chemotherapy. All underwent endoscopic placement of 24-K gold fiducial markers modified with micro-tines (126 [2.9x0.9mm.]; 19 [2.1x0.7mm.) into healthy submucosa 5-10mm. from the resection margin, using custom-made coaxial needles. Marker migration was assessed for with intra-op bladder-filling cystogram and measurement of distance between markers using a smartphone App (MedMeasure!) we developed. Set-up error and marker retention through completion of radiotherapy was confirmed by on-table portal imaging.

Results: Between 1/2007 and 8/2013, a total of 145 markers (3-5 per tumor-site) were placed into 27 patients of mean age 74-years. Two patients elected cystectomy before starting treatment; 19/25 completed chemo-radiotherapy. All (100%) markers were visible with all on-table (portal, cone-beam CT), fluoroscopy, plain-film, and CT-scan imaging. In each of two patients, 1-of-4 markers placed at the tumor site fell-out (voided) during the second half of radiotherapy. All other markers (100/102, 98%) were present through the end of radiation therapy. No intra or post-op complications occurred. Use of micro-tined fiducial tumor-site markers afforded a 2 to 6-fold reduction in bladder *area* targeted with high-dose radiation. Clinical outcomes: (See Table 1.).

Conclusions: Placement of the micro-tined fiducial markers into the bladder is feasible and associated with excellent marker retention and no evidence of marker migration or complications. Our markers improve targeting accuracy and help reduce collateral radiation. Fiducial markers may also afford tumor-site boost dose-escalation, to possibly further increase treatment efficacy.

MP-17.10

Is Embedding the Entire Prostate in Radical Cystectomy Specimens Essential?

Bhuvanai-Sitaraaman H, Bhattarai S
St. James University Hospital, Leeds, UK

Introduction and Objectives: Radical cystectomy is the standard of care in the management of muscle invasive bladder cancer. There is a lack of standardisation of practise in the way the prostate is processed. We assessed the significant pathological findings in the whole mounts of prostate in radical cystectomy specimens at our institution.

Materials and Methods: The data was collected from Jan 2008 to December 2013 on 216 patients from our database. All cystectomies were processed with standard whole mount preparation of the prostate.

Results: Of the 216 cystectomies performed, there were 52 females and 2 males who underwent prostate-sparing procedures. Of the remaining 162 cystectomies, prostate cancer was reported in 83 (51.2%) patients; of these, 66 (79.5%) had organ confined disease and 17 (20.4%) had extraprostatic or margin positive disease. Twenty five (30.1%) patients had Gleason 3+4 or higher grade disease. CIS was noted in 80 (49.3%) of the 162 patients. Of these, 19 (23.5%) had prostatic urethral CIS. Of these, additional stromal invasion of prostate was noted in 8 (10%) cases. The margin was reported as positive in 5 and as denuded in 5 further cases, implying margin positivity as these had associated urethral CIS. In 6 cases the prostate was directly infiltrated by TCC from the bladder (pT4 disease). Overall 108 significant pathologies were noted in the whole mount prostates including prostate cancer and prostatic urothelial neoplasia. Significant pathology needing further management included 17 patients with non-organ confined prostate cancer disease (PSA monitoring) and an additional 16 patients who needed to be considered for urethrectomy.

Conclusions: A total of 51.2% of patients had incidental prostate cancer on whole mount studies of the prostate, overall 10.55% of patients had non-organ confined cancer. Prostatic CIS is associated with bladder CIS in 23.5% of cases with margin positivity in 12%. As the entire prostatic urethra and the peripheral zone of the prostate need thorough histological examination, whole mount processing of prostate is a quicker and simpler method than random examination of small blocks. Whole mounts provide superior staging and prognostic information that is relevant for further management and follow-up of patients undergoing radical cystectomy.

MP-17.09, Table 1.

Sex:	Age (yrs):	Stage:	# markers placed:	Started Chemo/Rad:	Completed Tx. & one or more f/u cystoscopies
Men: 19 Women: 6 Total: 27	74.05 74	T1 (3) T2 (20) T3 (2) T4 (2)	145	25 / 27 (2 opted for cystectomy *before* starting Tx)	19 / 25 Mean f/u = 21.33 mo. 2 Delayed due to: , hip fx (1); pre-tx. mets (1) 4 currently receiving tx.

No local recurrence:	Local recurrence, managed conservatively:	Local recurrence, Salvage Cystectomy:	Distant recurrence only	Deaths
15 /19 (79%) Mean f/u = 20.17 mo.	3 / 19 (15.7%) Mean f/u = 32.9 mo.	1 / 19 (5%) Diagnosis/cystectomy @ at 4 mo.	4 / 19 (21%) Mean time to Met. Dz: 7.25 mo.	(2) **NED; Age 96:** 1/19 (5%) F/u = 17 mo.
NED / Bladder Intact after All Tx: 17 / 19 (89.5%) Mean f/u = 22.89 mo. (range: 7.3 - 57 mo.)			Currently in chemo (1) Cystectomy (1) Lost to follow-up (1) Deceased (1)	**Metastatic Dz:** 1/19 (5%) Time to recurrence: 5 mo. Local disease: none

MP-17.11
Immunohistochemistry (IHC) to Enhance the Prognostic Allocation of Locally-Advanced and Metastatic Urothelial Cancer (UC) Undergoing First-Line Chemotherapy (CT)

Necchi A[1], Giannatempo P[1], Paolini B[1], Lo Vullo S[1], Marongiu M[1], Farè E[1], Raggi D[1], Nicolai N[1], Piva L[1], Catanzaro M[1], Biasoni D[1], Torelli T[1], Stagni S[1], Maffezzini M[1], Gianni A[1], Sonpavde G[2], Salvioni R[1], Mariani L[1], Colecchia M[1]
[1]Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy; [2]UAB Comprehensive Cancer Center, Birmingham, USA

Introduction and Objectives: Knowledge of the expression of molecular drivers may enhance prognostic classification of metastatic UC. We aimed at assessing the expression of multiple molecular biomarkers (BMK) by IHC and their potential to enhance prognostic allocation of patients (pts) with UC.
Materials and Methods: We analyzed FFPE tumors from pts undergoing 1st-line CT with MVAC for locally-advanced unresectable (LA, T3-4±N+) and metastatic (M) disease between the years 2000 and 2013. The expression of the following panel of BMKs by IHC was evaluated using conventional protocols: ERCC1, EGFR, HER2/neu, VEGFR, PDGFR, p53, p63. Expression levels were dichotomized as positive (2+, 3+) or negative (≤1+). Fisher exact test was used to evaluate the association with response and setting (LA vs. M). Cox regression multivariate (MVA) models evaluated the association with PFS and OS.
Results: Since 06/2009, tissues of 88 pts (27 LA, 61 M) underwent IHC. Samples were from primary tumor (N=67) or metastases (N=21). Rates of positive IHC/number evaluable were as follows: ERCC1: 30/66 (45%); HER2: 24/52 (46%); EGFR: 31/54 (57%); VEGFR: 50/66 (76%); PDGFR: 10/63 (16%); p53: 25/56 (45%); p63: 46/53 (87%). HER2 trended for a significant association with higher stage (p=0.079). Median follow-up was 41 months (IQR, 15-64). On MVA, significant results were obtained for VEGFR and PDGFR, in addition to Bajorin score (Table 1). The c-index was 0.68 for both PFS and OS.
Conclusion: VEGFR and PDGFR expression appears to confer a divergent prognostic impact in pts receiving 1st-line cisplatin-based CT. These data underline the difficulties in defining angiogenesis as a molecular driver and therapeutic target.

MP-17.11, Table 1.

	PFS			OS		
Variable	**HR**	**95% CI**	**p**	**HR**	**95% CI**	**p**
VEFGR Pos vs. Neg	0.45	0.21-1.01	0.054	0.36	0.15-0.85	0.019
PDGFR Pos vs. Neg	3.32	1.28-8.58	0.013	2.66	0.96-7.42	0.060
Bajorin score 1-2 vs. 0	4.24	1.94-9.26	<0.001	4.49	1.91-10.56	<0.001

MP-17.12
MicroRNA-140-5p Inhibits Cell Migration and Invasion in Bladder Cancer Cells by Targeting SOX4

Shen Y, Bian X, Xie H, Zhu Y, Dai B, Ye D
Dept. of Urology, Fudan University Shanghai Cancer Center, Shanghai, China; and Dept. of Oncology, Shanghai Medical College, Fudan University, Shanghai, China

Introduction and Objectives: In recent years, the pathological relevance and significance of microRNAs (miRNAs) in bladder cancer have attracted more and more attention. Increasing evidence has suggested that dysregulation of certain miRNAs may contribute to carcinogenesis and metastasis in bladder cancer. In our previous study, we used miRNA microarray and found miR-140-5p was down-regulated in bladder cancer. Thus, this study was conducted to investigate the biological functions and its molecular mechanisms of miR-140-5p in human bladder cancer cell lines, discussing whether it has a potential to be a promising biomarker and therapeutic target of bladder cancer.
Materials and Methods: Four human bladder cancer cell lines and samples from sixty-five patients with bladder cancer were analyzed for the expression of miR-140-5p by quantitative RT-PCR. Exogenetic overexpression of miR-140-5p was established by transfecting mimics into T24, EJ, 5637 and J82 cells, after that cell proliferation and cell cycle were assessed by CCK-8 assay, flow cytometry and Colony-forming assay. Cell motility and invasion ability were evaluated by wound healing assay and transwell assay. Tissue immunohistochemistry with antibodies against SOX4 was performed. The target gene of miR-140-5p was determined by luciferase assays, quantitative RT-PCR and western blot. The regulation of epithelial-to-mesenchymal transition by miR-140-5p was analyzed by western blot.
Results: miR-140-5p was down-regulated in bladder cancer both in four bladder cancer cell lines and clinical samples compared to normal bladder urothelium. The expression level of miR-140-5p was correlated with tumor stage, tumor grade and lymph node metastasis in bladder cancer. Overexpression of miR-140-5p induced G2/M-phase arrest and suppressed cell growth in CCK-8 and colony-forming assay. miR-140-5p significantly repressed the capability of migration and invasion of bladder cancer cells. In addition, SOX4 was identified as a new target of miR-140-5p and up-regulated in bladder cancer tissues. Furthermore, we demonstrated overexpression of miR-140-5p could inhibit bladder cancer cell epithelial-mesenchymal transition (EMT) phenotype *in vitro*.
Conclusion: miR-140-5p can repress the migration and invasion of bladder cancer cells via regulating SOX4. Our data indicate that miR-140-5p could be a tumor suppressor and may have a potential to be a promising biomarker in bladder cancer.

MP-17.13
'FROG Bladder' – A New Type of Neobladder: The Functional and Metabolic Characteristics

Shimpi R
Division of Urology, Uro-Andrology Clinic, Pune, India

Introduction and Objectives: There have been various modifications of surgical techniques of Neobladder. I report a new type of bladder, 'The FROG Bladder', which satisfies the principles of continent Urinary Diversion, such as reservoir of satisfactory capacity, low pressure, minimal PVR and minimal surface exposure to avoid metabolic disorders with sufficient length of the ileum for tension free anastomosis. The aim of this study was to develop a Neobladder, with minimal intra-operative and post-operative complications after Radical Cystectomy.
Materials and Methods: Thirty three patients (30 males and 3 females) in the age group 45-62 years (Mean 57.5 years.) who had undergone Radical Cystectomy between 1999 and 2010 are included in the present study and were offered 'FROG Bladder'- a type of Neobladder. The salient features of these bladders are- two segments of the ileum of 30 cm each are used and 5 cm of distal most l part of the ileum is not detubularized and both the segments are anastomized in such a way that these two non-tubularized segments can be used for tension-free uretro-ileal anastomosis which is stented with 8 Fr RT. The patients were followed-up at 3, 6, 9, 12 months intervals in the form of USG abdomen, Urine Cytology, Serum B12, Uroflometry and UDS.
Results: The average age of the patients was 62 years intra-operatively, there was no problem in placing the Neobladder in the pelvis as well

as there was no fear of tension on suture line of Uretro-Intestinal anastomosis.Bladder capacity; at six month it was 245 ± 150 ml while at 1 year it was 290 ± 220 ml, PVR at six month was 10 ± 30 (17) at 1 year, 10 ± 90 (36), 24 hr Voiding frequency at 6 month was 11 (8-14) while at 1 year it was 7 (5-10). Day time continence was 76% while at 1 year it was 92%. Night time continence at 6 months was 56% while that at 1 year it was 82%. Max flow rate was 16 ml/sec at six months while at 1 year it was 21 ml/sec.

Conclusion: The FROG bladder at 1-year follow-up achieved an excellent result with good capacity, minimal PVR and minimal back pressure changes in the upper tracts.

MP-17.14

Belgrade Pouch-Orthotopic Neobladder Created from Shorter Ileal Segment

Aleksic P**, Bancevic V**, Stamenkovic D, Jovanovic M, Tosevski P, Campara Z, Nikolic I, Milosevic R, Jovanovic D, Milovic N
Medical Faculty, University of Defense, Military Medical Academy, Urology Clinic, Belgrade, Serbia

Introduction and Objectives: Neobladder constructed of 40 to 60 cm of ileum provide excellent capacity and low pressure with satisfactory continence and frequency. During the time, increasing neobladder capacity and post voided residual volume lead to metabolic disorders, voiding problems, excessive mucus production, urinary infection, calculosis and other complications. In order to reduce these complications and to preserve satisfactory pouch capacity and continence we created Belgrade pouch- neobladder constructed of shorter ileal segment (average 29 cm).

Materials and Methods: In prospective clinical study we included ninety eight patients scheduled for radical cystectomy, and followed up for four years. Inclusion criteria for orthotopic derivatin were according to EAU guidelines for muscle invasive bladder carcinoma. Exclusion criteria were chemotherapy, disease progression, obstructive pulmonal disease and diabetes mellitus. "U" shaped pouch (BP) was constructed using 24- 35 cm of detubularised terminal ileum. Direct ureteroileal anastomosis was performed. Urethro-pouch anastomosis was created with 6 (5-7) sutures. Pouch was flushed twice per day until hospital discharge. Patients were instructed to void every two to three hours during the daytime, and in the nighttime, to void twice for the first two or three months following the surgery. We recorded delayed complications following the surgery.

Results: Fifteen female and eighty three male patients 64 (42-77) years old underwent surgery. Neobladder was constructed using 29 (24-35) cm of terminal ileum. Delayed complications and pouch characteristics during the time are presented in Table 1.

Conclusion: Few months after surgery BP can obtain adequate pouch capacity and frequency, small post voided residual urine, satisfactory daytime and nighttime continence, lower incidence of acidosis, calculosis and vitamin B12 deficiency, and small percentage of bicarbonate substitution during four-year period of follow-up.

MP-17.14, Table 1. Outcome Data Presented as Median (Range) and Number (Percentage)

	6 months	1 year	2 years	3 years	4 years
Day continence (%)	72	89	92	89	89
Night continence (%)	68	88	89	88	89
Neobladder capacity (ml)	315 (220-378)	429 (289-515)	449 (300-585)	472 (323-659)	491 (335-680)
24 hours voiding frequency	9	7	6	6	5
Post-void residual volume (ml)	15 (0-20)	22 (0-41)	28 (0-40)	50 (0-95)	55 (0-190)
Acidosis (%)	0	2	5	7	7
Bicarbonate supstitution (%)	0	0	2	3	3
Vitamin B12 deficiency (%)	0	0	0	3	4
Pouch calculosis (%)	0	0	3	6	6
Hydronephrosis (%) Bilateral Onesided	 8 /GrI/ 0	 3 0	 3 3 /GrIII/	 3 6 /Gr IV/	 4 7 /Gr IV/

Moderated Poster Session 18
Stones: Surgical Management and New Technologies
Tuesday, October 14
1435-1600

MP-18.01

Ureteroscopy with Holmium: YAG Laser Lithotripsy for Impacted Upper Ureteral Stones: A Comparative Study between Impacted Stones and Non-Impacted Stones

Omori Y, Shinbori M, Oiwa Y, Umeda K, Yokoyama H, Iwabuchi T, Kawano Y, Hariu K, Yamamoto R, Shiga Y
Tokyo Nephro Urological Center Yamato Hospital, Tokyo, Japan

Introduction and Objectives: Ureteroscopy (URS) for impacted upper ureteral stones is difficult to perform retrogradely because of the severe tortuosity of ureter or ureteral edema and fibrosis. In some cases, it may be difficult to obtain stone clearance intraoperatively. The aim of this study is to evaluate safety and efficacy of URS for impacted upper ureteral stones (single procedure) compared to improving impaction with double-J stent insertion followed by URS.
Materials and Methods: Between June 2011 and February 2013, a total of 47 patients with upper ureteral stones (with all patients showing symptoms of ureteral obstruction at least temporarily) were divided into 2 groups. Group 1 included 28 patients who underwent URS for impacted upper ureteral stones (U1) and Group 2 included 19 patients who showed symptoms of pyelonephritis underwent double-J stent insertion for impacted upper ureteral stones followed by URS. Impacted stone is defined as the stone that has remained in the same position for at least two months with hydronephrosis. Postoperative KUB and ultrasonography were used to assess the stone clearance rate, which had residual fragments <2mm.
Results: Regarding patient age and stone size there was no significant difference between the two groups. The mean operative time was 64.1±17.3 and 56.5±17.5 min in Group 1 and 2, respectively (P=0.138). Two patients underwent a second session of URS (one in each group). The stone clearance rate at post-operative day one and at post-operative two months were 46.4% vs. 73.7% and 92.8% vs. 94.7% in Group 1 and 2, respectively (P=0.064, P=0.796). There were no significant intraoperative complications between two groups. Transient postoperative fever was encountered in two (7.1%) and three (15.8%) patients in Group 1 and 2, respectively (P=0.345). Three patients (10.7%) of Group 1 experienced steinstrasse.
Conclusion: Although it may be difficult to extract all stone fragments intraoperatively, ureteroscopy for impacted upper ureteral stones is an optimal treatment which is recommended not only for fragmentation using Holmium:YAG laser but also in regard to its fewer complications. In our present study, we conclude that ureteroscopy for impacted upper ureteral stones is a safe and effective procedure.

MP-18.02

Retrograde Intrarenal Surgery Is Superior to SWL in the Treatment of Renal Stones Up to 20mm

Bosio A, Destefanis P, Alessandria E, Preto M, Santià S, Buffardi A, Palazzetti A, Dalmasso E, Bisconti A, Gontero P, Fontana D, Frea B
Dept. of Urology, Città della Salute e della Scienza, Molinette Hospital, Turin, Italy

Introduction and Objectives: Retrograde intrarenal surgery (RIRS) has become a common procedure in the treatment of renal stones but SWL still remains the treatment of choice in most cases. The objective of our study was to compare success rates of RIRS and SWL on renal stones.
Materials and Methods: We organized a retrospective trial on all RIRS performed in our Stone Center from May 2009 to August 2013 and all SWL performed from January 2011 to August 2013. Single procedure outcomes were determined on ultrasound at 2 weeks. Procedures were considered successful in case of stone free or clinically insignificant residual fragments (CIRF) – defined up to 5 mm – and unsuccessful in case of larger residual fragments or unmodified stone. Stones size and site and need for further procedures (RIRS or ESWL) were also considered. Student t and Chi-square tests were used for statistical analysis.
Results: Results are summarized in Table 1.
Conclusion: In our retrospective trial RIRS seemed to be superior to SWL in the treatment of renal stones. Success and stone free rates after RIRS were significantly higher compared to SWL and the need for further treatments significantly lower. Stones located in lower calices and in renal pelvis specially seemed to benefit from RIRS.

MP-18.03

Effect of Obesity on the Success of Retrograde Intrarenal Surgery

Oguz U[1], Bozkurt O[2], Ozyuvali E[2], Senocak C[2], **Demirelli E**[1], Ogreden E[1], Yalcin O[1]
[1]Dept. of Urology, University of Giresun, School of Medicine, Giresun, Turkey; [2]Dept. of Urology, Kecioren Training and Research Hospital, Ankara, Turkey

Introduction and Objectives: While retrograde intrarenal surgery (RIRS) has been improving and getting a common procedure in urology practice, many articles evaluate the factors that can affect the success rates of RIRS. But there are few articles evaluating the association of obesity and RIRS. We hypothesized that there could be restriction of mobility in patients with high body mass index (BMI) so it could

MP-18.02, Table 1.

	RIRS	SWL	
Analysed medical records	184	372	
Available post-treatment ultrasound	147	293	
Mean stone size	11.9 ± 4.0 mm	10.1 ± 3.2 mm	p < 0.001
Single procedure:			
Success rate	65%	37%	p < 0.001
Stone size:			
≤ 10 mm	71%	44%	p < 0.001
11 - 15 mm	60%	18%	p < 0.001
16 - 20 mm	45%	7%	p = 0.02
Stone site:			
Upper calices	64%	37%	p = 0.09
Middle calices	56%	43%	p = 0.44
Lower calices	67%	48%	p = 0.03
Renal pelvis	52%	23%	p = 0.02
After a previous SWL	62%	39%	p < 0.001
Stone free rate	34%	14%	p = 0.03
CIRF rate	42%	23%	p < 0.001
Unmodified stone rate	4%	35%	p < 0.001
Further procedure (RIRS or SWL) needed	23%	59%	p < 0.001

be associated with the spontaneous passage of stone fragments. The aim of this study was to evaluate whether obesity has an effect on the final success of RIRS due to association of the restriction on mobilisation.

Materials and Methods: We retrospectively reviewed the medical records of patients who underwent RIRS due to kidney stones. Two hundred and twenty-two patients whose BMI values were obtained, were included to this study. According to BMI values, patients were divided into three groups. Group I (n:67): patients whose BMI was <25; Group II (n:91): patients whose BMI was between 25 and 29; Group III (n:64): patients whose BMI was >29. We determined the success rates, age, gender, stone size and location, operation time and postoperative renal colic. All patients were evaluated for final success 1 month after the operation. Success was defined as stone-free or fragment smaller than 3 mm.

Results: Mean ages were 34.6, 43.1 and 48.5 years, respectively. (p<0.05). Male/female ratio was 0.7, 0.4, 1.4, respectively. (p=0.004). Mean stone size was 175.8, 180.3 and 195.9 mm^2 respectively (p>0.05). Stone location, operation and scopy times, postoperative hospitalisation times and the renal colic rates were similar in all groups (p>0.05). The final success rates were 70.1%, 79.1% and 73.7% in Group I, II and III respectively, the difference was not statistically significant (p>0.05).

Conclusions: With this study we determined that patients in Group III were older than others. Although increased age has accompanied in Group III, BMI did not affect the spontaneous passage of stone fragments and the success of the operation.

MP-18.04

Body Mass Index (BMI) Predicts Outcome of Ureteroscopy-Assisted Retrograde Nephrostomy (UARN) for Percutaneous Nephrolithotomy

Atalla C, Wynberg J
Detroit Medical Center, Detroit, USA

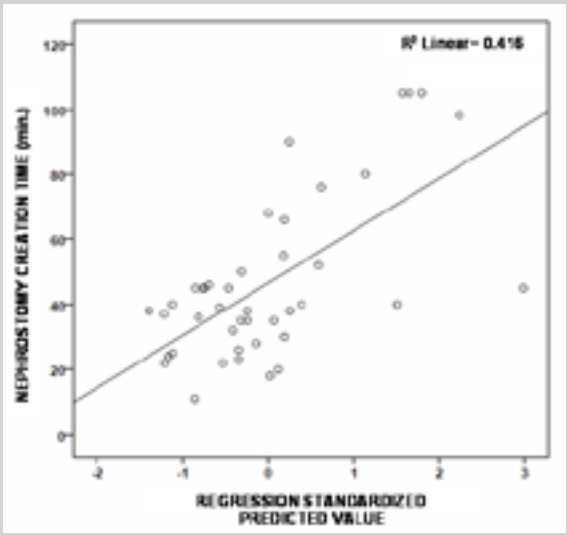
Introduction and Objectives: Several clinical series of retrograde nephrostomy for PCNL have been published over the past 30 years demonstrating good outcomes and safety. We previously reported our adaptation of the Lawson technique, wherein we deploy the puncture wire through a flexible ureteroscope. We herein aim to clarify the performance characteristics of this nephrostomy creation technique.

Materials and Methods: IRB approval and informed consent were obtained. UARN procedure was performed as described previously. Data was collected prospectively. Multiple patient and operative factors were evaluated for association with UARN success and nephrostomy creation time: BMI, skin-to-stone distance (SSD), Guy's score, CROES nephrolithometric score, hydronephrosis, stone burden, location of nephrostomy, exit from a stone-bearing calyx, and use of holmium laser to access calyx.

Results: Nephrostomy was successful in 49/52 UARN procedures (94%). Only single access was placed: upper - 18, mid - 27, and lower - 7. Median BMI was 29 kg/m^2 and median time for nephrostomy creation was 39 minutes. Fluoroscopy time for entire PCNL was 84 and 16 seconds for cases # 1-25 and 26-52, respectively. By stepwise linear regression, variables correlating with nephrostomy creation time were BMI (r^2 = 0.219), stone burden (r^2 = 0.094), and use of holmium laser to access calyx (r^2 = 0.104), total r^2 linear = 0.416.

Conclusions: UARN is an intuitive, safe procedure that offers dramatic reductions in fluoroscopy times. UARN is best suited to cases requiring only one nephrostomy tract. Upper pole access is commonly performed with a subcostal technique to navigate the puncture wire below the ribs. Increasing BMI best predicts longer nephrostomy creation times; procedure failure was associated with BMI exceeding 40 kg/m^2. UARN is a robust technique for nephrostomy creation in appropriately selected patients.

MP-18.04, Figure 1. Linear regression shows correlation between BMI (r2 = 0.219), stone burden (r2 =0.094) and use of holmium laser to access calyx (r2 = 0.104; total r2 linear = 0.416) and nephrostomy creation time using the UARN technique.



MP-18.05

Assessment of Ureteric Injury Produced by Access Sheath Use in Flexible Ureteroscopy

Housami F, Marri R, McIlhenny C
Forth Valley Royal Hospital, Larbert, UK

Introduction and Objectives: The use of access sheath in flexible ureteroscopy improves flow, endoscopic views and allows easier extraction of fragments. However it carries risks of ureteric injury and stricture. The aim of this study is to identify the prevalence and predictive factors of ureteric injury with access sheath use.

Materials and Methods: Flexible ureteroscopy data was collected prospectively between August 2012 and December 2013. The ureter was inspected at the end of procedure and ureteric injury was graded 0-3 depending on the depth of injury as described by Traxer et al. All patients had ultrasound scan at 3 months for assessment of evidence of hydronephrosis.

Results: During the study period 69 patients had flexible ureteroscopy with use of access sheath. Stone locations were in the upper/mid pole in 9 (13%); lower pole in 26 (38%); renal pelvis in 21 (30%); and upper ureter in 13 (19%) patients. The ureter was pre-stented in 30 (44%) cases. Tight ureter was noted in 7 (10%) patients on insertion of access sheath. Mean operative time was 46±22 minutes and mean access sheath time 30±19 minutes. Stones were fragmented in 64 (93%) and extracted in 5 (7%) cases. On inspection of the ureter at the end of procedure the ureter was intact in 29 (42%), grade 1 injury was noted in 36 (52%), grade 2 in 4 (6%) cases and no grade 3 injury was observed. Access sheath time was 35±25 minutes in cases with intact ureter and 27±15 minutes in those with any degree of ureteric injury (p=0.151). No significant hydronephrosis was noted on follow-up ultrasound scans.

Conclusion: A minor degree of ureteric injury is noted with access sheath use in more than half the patients. This does not appear to be related to length of access sheath time. The risk of significant stricture causing hydronephrosis was very low in this study.

MP-18.06

A 20-30mm Single Renal Stone: Percutaneous Nephrolithotomy or Extracorporeal Shockwaves Lithotripsy?

Hassan M, El-Nahas A, El-Tabey N, El-Assmy A**, Nageib M**, El-Kenawy M, Nabeeh A, Sheir K

Urology and Nephrology Center, Mansoura University, Mansoura, Egypt

Introduction and Objectives: Optimal management of a 20-30mm single renal stone is controversial. We compared SWL and PNL efficacy and safety in treatment of such patients.
Materials and Methods: Between January 2006 and December 2012, Files of patients treated with SWL or PNL for a 20-30mm single renal stone were reviewed. Exclusion criteria were; history of intervention for this stone within the last 6 months, solitary kidney, anatomical renal abnormality, sever Hydronephrosis or branched stones. We compared patients' criteria (age, sex and BMI), stone criteria (side, location, opacity, largest diameter, and attenuation value), need for retreatment, auxillary, complications and costs. Success was defined as no residual stones or insignificant residual (4mm or less) 3 months after last SWL session or PNL. Statistical analysis was conducted using t-test for continuous variables and chi-square test for categorical variables.
Results: Study included 420 patients, 215 were treated by SWL and 205 were treated by PNL. Table 1 summarizes patients and stones characters. Success rates, need for re-treatment or auxiliary procedures, complication rates and costs are demonstrated in Table 2. PNL showed significantly higher success rate and lower retreatment rate and auxiliary procedures than SWL. The incidence of complications was comparable, however costs were significantly lower in SWL. The efficiency quotient for SWL was 0.39.
Conclusion: PNL was more effective than SWL in treatment of 20-30mm single renal stone. However, SWL was less costly but associated with higher re-treatment rate.

MP-18.07

Comparative Study of Balloon Dilator versus Telescopic Metal Dilators for Tract Dilatation in PCNL for Staghorn Stones and Calyceal Stones

Elshazly M[1], Salem S[1], Allam A[2], Hathout B[2]

[1]Dept. of Urology, Faculty of Medicine, Menoufiya University, Menoufiya, Egypt; [2]Dept. of Urology, Farwaniya Hospital, Kuwait City, Kuwait

Introduction and Objectives: To compare the results of balloon versus telescopic metal dilators in cases with calyceal stones or staghorn stones without hydronephrosis.
Materials and Methods: This study was prospectively designed over 3 years from 2011 to 2014. All cases were performed in Farwaniya Hospital, Kuwait. Patients with anticipated difficulty in dilation (Complex staghorn stones, non dilated targeted calyx, stone fully casting the targeted calyx and anterior targeted calyx suggested from CT and identified by failure of guide wire to reach to renal pelvis after puncture) were included in the study and randomized between 2 groups. Intervention: First group (A) used balloon as a primary dilation technique and metal telescopic dilators as a salvage. In the second group (B) we used telescopic metal dilators as a primary dilatation technique.
Results: We identified 97 patients out of 235 cases of PCNL: Group (A), 55 patients underwent balloon dilation as a primary dilatation technique, and Group (B), 42 patients

MP-18.06, Table 1. Patients and Stone Characters in Both Groups

Patients and stone characters in both groups				
	N. (%)	**SWL** 215 (51.2%)	**PNL** 205 (48.8%)	P value
Patients characters				
	Age (years) Mean ± SD	48 ± 11.9	50.7 ± 12.2	0.02
	Sex			
	Male Female	142 (66%) 73 (34%)	106 (51.7%) 99 (48.3%)	0.003
	BMI ± SD	31.3 ± 5	32 ± 7	0.367
Stone character				
	Side			0.449
	Right Left	98 (45.6%) 117 (54.4%)	101 (49.3%) 104 (50.7%)	
	Location			0.216
	Renal pelvis Calyceal	168 (78.1%) 47 (21.9%)	170 (82.9%) 35 (17.1%)	
	Largest diameter (mm ± SD)	23.4 ± 2.7	24.9 ± 3	< 0.001
	Opacity			0.4
	Radiopaque Radiolucent	176 (81.9%) 39 (18.1%)	174 (84.9%) 31 (15.1%)	
	Attenuation value (HU ± SD)	816.3 ± 350.2	748.4 ± 352.9	0.165
Hydronephrosis				
	Yes No	136 (63.3%) 79 (36.7%)	145 (70.7%) 60 (29.3%)	0.104

MP-18.06, Table 2. Efficacy, Safety and Costs in Both Groups

Efficacy, safety and costs in both groups					
	N. (%)		**SWL** 215 (51.2%)	**PNL** 205 (48.8%)	P value
Efficacy					
	Success rate		74%	95.6%	< 0.001
	Re-treatment rate		163 (75.8%)	11 (5.4%)	< 0.001
	Auxiliary procedure		30 (14%)	11 (5.4%)	< 0.001
Safety					
	Complications	 G 0 G I G II G IIIa	 188 (87.4%) 12 (5.6%) 6 (2.8%) 9 (4.2%)	 174 (85%) 13 (6.2%) 9 (4.4%) 9 (4.4%)	0.815
Cost					
	$U.S ± SD		835 ± 513	1187 ± 137	< 0.001

underwent telescopic metal dilatation. In Group A (55 cases) dilation was successful in 28 cases, overzealous dilation with parenchymal injury in 6 patients, failure and need for metal dilators in 21 cases and failure of procedure was in 1 case after failed telescopic dilatation and extravsation. In Group B (42 cases) dilatation was successful in 33 cases, overzealous dilation was in 5 cases, under dilation with re-dilatation was in 4 cases and no cases had failed dilatation. Differences in mean duration of dilatation, estimated mean of blood loss and blood transfusion rate were statistically insignificant.
Conclusion: Balloon dilatation has a higher failure rate than metal telescopic dilatation during PCNL for calyceal casting stones or staghorn stones with little space around the stones.

MP-18.08
Supracostal Calyceal Access by Caudal Renal Displacement during Percutaneous Nephrolithotomy (PCNL): A Novel Ureteric Balloon Catheter (UBC) Technique
Khan R, Ramsay A, Vint R, Nalagatla S
Monklands District General Hospital, Airdrie, Scotland, UK

Introduction and Objectives: Percutaneous access through the supracostal collecting system during percutaneous nephrolithotomy (PCNL) is often avoided due to the risk of pleural injury. We have developed a novel technique using a ureteric balloon catheter (UBC) which allows us to bring a supracostal collecting system to an infracostal position for percutaneous access. We describe this technique which, to our knowledge, is the only such description using ureteric balloon catheter (UBC) in literature. We also present the up-to-date results for our growing cohort of patients treated using this technique in our centre.
Materials and Methods: The technique involves placing patient in a prone or supine position to perform PCNL. Ureteric balloon catheter (UBC) is then placed into the renal pelvis or desired calyx, and a retrograde pyelogram is performed prior to balloon inflation. Gentle traction is then applied to the UBC to displace the kidney caudally. This allows a desired calyx to be accessed in the infracostal position under fluoroscopy guidance. We prospectively collected data for all the patients treated using this technique in our centre. The data was reviewed to assess the success of the technique.
Results: To date, UBC technique has been used in a total of 10 cases in our centre. We successfully achieved access in 9 cases (2 supine PCNL and 7 prone PCNL). Supracostal calyces (4 upper pole, 2 interpolar and 3 lower pole) were accessed using UBC technique. This technique was unsuccessful in 1 case. No significant complications were encountered and complete clearance achieved in all cases where access was achieved. Additionally, this technique stabilises the kidney and reduces movement due to respiration which is advantageous during PCNL.
Conclusion: UBC technique is a novel and simple technique to displace supracostal calyces below the 12th rib to gain access safely and avoid intra-thoracic complications.

MP-18.09
Pulsed Fluoroscopy: Bringing Safety into PCNL Efficacy
Durutovic O, Nikic P, Milenkovic-Petronic D, Santric V, Milojevic B, Ladjevic N, Mimic A, Vuksanovic A, Acimovic M, Dzamic Z
Clinic of Urology, Belgrade, Serbia

Introduction and Objectives: Percutaneous nephrolithotripsy (PCNL) presents a gold standard in treatment of large kidney stones. The technique of access to the renal collecting system and appropriate calyx differs between centers. In the beginning access was mainly performed by radiologist. Today access is mostly performed by urologist, by fluoroscopic or/and ultrasound guidance. One of the goals of modern urology in stone disease is how to decrease the level of radiation exposure of patiens (because of repeated exposures), but also personnel involved in fluoroscopic procedures. In aim to decrease radiation exposure, techniques of access are improved toward the increased precision and efficacy with decreased radiation exposure.
Materials and Methods: In this study we have compared our data in two stages/groups, but also with data from the literature. We have compared the results when access and procedure control was performed with ultrasound and continuous fluoroscopy (Group 1) to the second stage, when ultrasound and pulsed fluoroscopy was used (Group 2). We have compared fluoroscopic time (FT), number of attempts necessary to approach desired calyx and stone free rate between two groups.
Results: We found significant difference when compared FT in Group 1 to Group 2 (2.6 min. vs. 1.7 min.). Compared to the available data from the literature, investigating FT achieved at the level of excellence, FT in our study was significantly lower (2.6/1.7 min vs. 8.9 min). The number of attempts necessary to achieved desired calyx did not differ between Group 1 and Group 2. Also, in terms of efficacy, the stone free rate did not differ significantly between Group 1 and Group 2.
Conclusion: Fluoroscopic time can be safely reduced with use of ultrasound for precise access to the appropriate calyx. Further improvement can be achieved by pulsed fluoroscopy, as it will not decrease the control and efficacy of the procedure, but will significantly decrease fluoroscopic time. In this manner PCNL will remain its efficacy with increased safety for not only patient but also operating room personnel.

MP-18.10
Implementation of Ultra-Mini Percutaneous Nephrolithotomy for Treatment of 2 - 3cm Kidney Stone: A Preliminary Report
Shah A, Xu K, Huang J, Bi L, Liu H, **Huang H**, Shrestha R
Dept. of Urology, Sun Yat-sen Memorial Hospital, Sun Yat-sen University, Guangzhou, China

Introduction and Objectives: Percutaneous nephrolithotomy is still a preferred technique for treatment of large (>2cm) renal stone. Recently, retrograde intrarenal surgery (RIRS) and miniature percutaneous nephrolithotomy techniques are increasingly used in the treatment of renal stones. However, they are indicated for the treatment of renal stones (<2cm). We present our preliminary report of treating 2-3 cm renal stone using ultra-mini nephrolithotomy associated with intermittent suction through the modified nephroscopy sheath and retrograde ureteral access sheath.
Materials and Methods: We implemented 3.5-F ultra-thin telescope with 6F inner sheath through a modified 10-F closed nephroscopy sheath with adjustable drainage outlet. The stone was disintegrated with a 200-μ holmium laser fibre. Intermittent suction was applied through the nephroscopy sheath outlet for active removal of stone fragments. Peristaltic pump was used for saline infusion. A retrograde 9.5 or 12-F ureteral access sheath was positioned for maintaining low intraoperative renal pelvic pressure and debris drainage. During April 2013 to August 2013, the technique was applied in treatment of 15 renal stones cases (2-3cm). All cases were completed under epidural anesthesia with patient in 45° semi-supine combined with lithotomy position. Ultrasonographic guidance was used for establishment of access tract and confirmation of residual stone at the completion of the procedure. If required, RIRS was associated for removal of any stone fragments (>4mm) inaccessible through the primary nephroscopy tract. A 6-F Double-J stent and an 8-F nephrostomy tube was placed at the end of the procedure.
Results: All 15 cases were successfully completed. The mean [SD] stone size was 3.06 (0.31) cm, operative time 123.5 (42.4) mins, intraoperative estimated blood 30.3 (48.0) ml. Nephrostomy tube was removed within 48 hours postoperatively while double-J stent was removed after 4 weeks. The mean [SD] hospital stay was 3.6 (0.5) days. Complete stone clearance was 73.3% with UMP alone while it was 93.3% when associated with RIRS. No major intra- or postoperative complications occurred.
Conclusion: Implementation of Ultra-mini percutaneous nephrolithotomy for the treatment of renal stones 2 - 3cm is feasible and safe. The procedure is less invasive and has faster recovery period. Intraoperative retrograde ureteral sheath facilitates simultaneous RIRS,

decrease intrapelvic pressure and facilitates removal of stone fragments.

MP-18.11
Safety, Efficacy and Outcomes of Supine Mini PCNL
Balakrishnan A, Gowda R
Apollo Hospitals, Chennai, India

Introduction and Objectives: The treatment of urolithiasis has undergone a paradigm shift in the past decade. Although a low-risk procedure, ESWL often leads to persistent residual stones. Non ideal pelvicalyceal anatomy and poor durability of the flexible ureteroscope may impact success of RIRS.PCNL though safe and effective, can be associated with serious complications. Decreasing the tract size for PCNL could decrease bleeding and morbidity. Supine mini-percutaneous nephrolithotomy (SmPCNL) can also offer a potential advantage of performing simultaneous ureteroscopy and better airway access. This study was done to evaluate the safety and efficacy of SmPCNL in our patients.
Materials and Methods: Between August 2013 and March 2014, 60 consecutive patients underwent SmPCNL by a single surgeon at Apollo hospital, Chennai. Data were collected prospectively including stone size and location, operative time, use of stent, ureteric catheter and nephrostomy tube, hospital stay, stone clearance and complications. All cases were performed using Karl Storz mini PCNL set, in a modified lithotomy position using fluoroscopy. Success was defined as patient free of stones or with residual stone fragments <4mm.
Results: There were 32 single, 22 multiple and 6 partial staghorn stones. The mean stone size was 21.1mm. 42 cases were done under general anaesthesia and 18 were done under spinal anaesthesia. Simultaneous URS and lithotripsy was done in 10 cases successfully prior to PCNL. All cases were punctured successfully with easy access to the pelvicalyceal system in the supine position. Stones were successfully cleared in 95% patients including ureteric stones. Mean operative time was 48 minutes. Three patients required additional ESWL for clearing residual stone. DJ stent was placed in 10% patients and ureteric catheter was left *in situ* for 24 to 48 hrs in rest. Nephrostomy was deployed in 1 case. Median hospital stay was 2 days. Overall complication rate was 5%. Two patients had transient fever (grade 1 claviens) and 1 patient had peri nephrostomy urine leakage (grade 2 claviens), managed conservatively.
Conclusions: SmPCNL is safe and effective in suitable patients and offers good stone clearance with minimal morbidity.

MP-18.12
Comparison the Results and Complications between Standard and Tubeless PCNL
Darabi-Mahboub M, Taghavi R, Sadidi J
Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: Urolithiasis is the most common urological disease. Percutaneous nephrolithotomy (PCNL) is the treatment of choice with lowest side effects for large and complex stones. We evaluated and compared the results and complication of "conventional PCNL" with placement of temporary nephrostomy tube at the end of procedure and "tubeless PCNL".
Materials and Methods: A total of 160 patients candidate for PCNL were randomized in two groups. Ultrasonography and intravenous peylography were performed for all patients before PCNL. In all patients after placement of 5 Fr ureteral catheter, PCNL has been performed in prone position with fluoroscopic guidance. In Group I (80 patients) nephrostomy tube placed post operatively and in Group II (80 patients) the site of incision sutured without any tube insertion. In Group II, 6 patients had residual stone and 2 patients had abnormal hemorrhage and nephrostomy inserted. Therefore 72 patients evaluated as tubeless and 88 patients with nephrostomy.
Results: Mean stay in hospital in Group I was 3.5 days and in Group II 2.1 days (P <0.001). Mean analgesia requirement in Group I was 190 mg (50 – 350 mg) pethedin and in Group II 105 mg (25 – 275 mg) (P <0.001). Perirenal liquid collection was seen in 3 patients in Group I and in 8 patients in Group II (P = 0.005). Febrile infection has been occurred in 4 patients in Group I and in 7 patients in Group II (P = 0.005). Urinary leakage found in 2 patients with nephrostomy that need intervention.
Conclusion: Tubeless PCNL is an effective and safe method and reduced hospital stay and post-operative pain without serious complications. Nephrostomy tube is indicated only in residual stones, multiple tracts, abnormal hemorrhage and injury of pyelocalicial system.

Moderated Poster Session 19
Infections & Inflammatory Diseases
Tuesday, October 14
1435-1600

MP-19.01

A Single Center Study of Acute Prostatitis after Prostate Biopsy and Quinolone Resistance

Ryu J[1], Ahn S[2], Choi J[2], Kim J[2], Moon Y[1], Kim T[1]

[1]Chung-Ang University Hospital, Seoul, South Korea; [2]Kepco Medical Center, Seoul, South Korea

Introduction and Objectives: Complications after prostate biopsy have increased and various causes have been reported. Growing body of evidence on increasing quinolone resistance is of particular concern. We evaluate retrospectively the incidence of infective complication after prostate biopsy and identify the risk factor.
Materials and Methods: The study population included 1189 patients who underwent a prostate biopsy between January 2007 and December 2012 at our center. Cases in which occurred acute prostatitis within 7days were investigated. Clinical information included age, prostate specific antigen, prostate volume, hypertension, diabetes, and body mass index. Patients receive 250mg of IV quinolone before the procedure, and 250mg quinolone was orally administered two times daily for 7days. We use univariate and multivariate analysis to investigate predictive factor for acute prostatitis
Results: Acute prostatitis developed in 23 (1.93%) cases. Core number was increasing from 2007 (8 core) to 2012 (12 core) and quinolone resistant bacteria began to appear since 2010 (quinolone resistance era). In univariate analysis, core number≥12 (p=0.018), BMI>25 (p=0.032), quinolone resistance era (p=0.01) were significant factors. However, multivariate analysis adjusted for core number results to be not significant, only BMI>25 (p=0.014) and quinolone resistance era (p=0.02) is significantly associated. Ten patients' bacteria were cultured in blood or urine, of which 70% has quinolone resistance. Quinolone resistance was the most important predictive factor.
Conclusions: Quinolone resistance is the main cause of post-biopsy infections in our center. We suggest that further evaluation to validate similar trends and novel strategies to find alternative prophylactic agent are necessary.

MP-19.02

Targeted Antimicrobial Prophylaxis for Trans-Rectal Prostate Biopsy: Does It Reduce Septic Complications?

Tukmatchy H[1], Nemade H[1], Vohra A[1], Thompson P[2]

[1]Basildon and Thurrock University Hospital, Basildon, UK; [2]King's College Hospital, London, UK

Introduction and Objectives: The rise in infective risk of Transrectal Ultrasound guided Prostate Biopsy (TRPB) is being well recognised in recent years. There remains an unacceptable complication rate of septicaemia with no universally accepted antibiotic policy. Targeted antibiotic prophylaxis policy based on rectal flora has been suggested in the recent past. We report the first prospective UK study to our knowledge to assess the resistance of rectal flora to fluoroquinolones and complication rate after TRPB.
Materials and Methods: A total of 98 patients underwent TRPB at a secondary referral centre in the UK over a 3 month period, were assessed for pre biopsy MSU, risk factors (international travel and antibiotic use 6 months prior to TRPB) and prospectively followed for complications till 4 weeks. Of these, 60 patients had rectal swab at time of biopsy for culture and antibiotic sensitivities. Oral Ciprofloxacin 500mg bd / 3 days+ Metronidazole 1gm were administered as prophylaxis.
Results: Analysis of the rectal swab showed the bacteria to which the patients were exposed. On culture of rectal swab, 56/60 patients (93%) had mixed flora, 3/60 (5%) Gram-negative bacteria (*Escherichia coli)* and 1/60 patient (1.67%) Gram-positive bacteria *(Beta-haemolytic Streptococcus group C).* No Fluoroquinolone-resistant microbial strains were isolated. Mean age 66, Mean PSA 71, Adenocarcinoma Prostate 36%. International travel 23% and previous antibiotic use 0%.
Infective complications: 3/98(3%) with urinary tract infection (*E Coli* – sensitive to Fluoroquinolone). One out of 98 (1.67%) was hospitalized for acute urinary retention and another 1/98 (1.67%) admitted for sepsis (Blood culture: *E Coli* – sensitive to fluoroquinolone). None of the patients with infective complications had prior antibiotic / international travel 6 months previously.
Non-infective complications: 16/98 (16.3%) reported persistent haematuria for > 48 hours post-biopsy without hospitalization, while 8/16 (8.1%) reported persistent haematospermia at 4 weeks.
Conclusion: The alarming rate of fluoroquinolone-resistance in both Gram-negative and Gram-positive organisms identified in recently published studies is inconsistent with our study. Our data also raises questions about the routine use of targeted prophylaxis based on rectal flora. In high risk patients (multiple UTI, indwelling catheters), targeted prophylaxis or transperineal prostate biopsies could be considered as a safer alternative.

MP-19.03

Flare Up the Symptoms in Patients with Chronic Prostatitis/Chronic Pelvic Pain Syndrome: A 27-Month Follow-Up Study

Lee G[1], Cho I[2]

[1]Dankook University College of Medicine, Cheonan, South Korea; [2]IlsanPaik Hospital, Inje University, Ilsan, South Korea

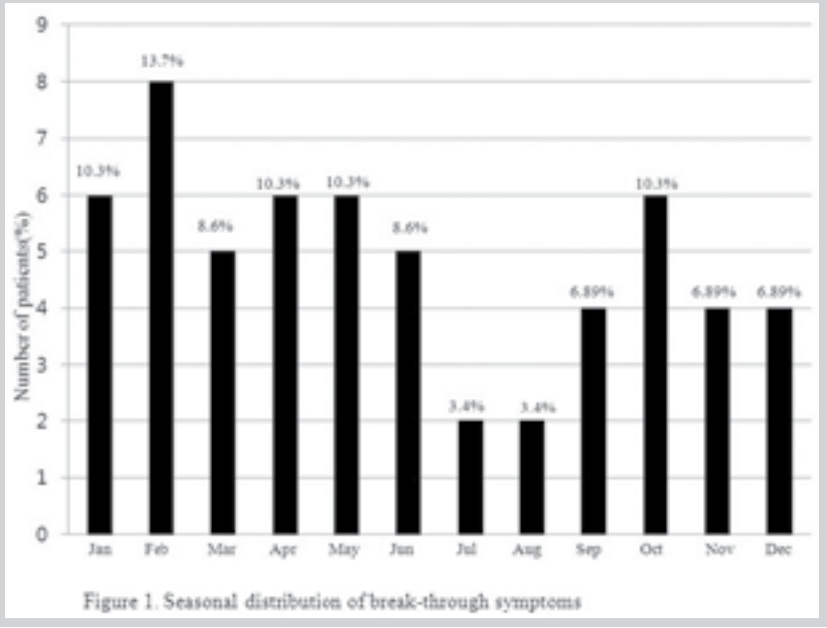
Introduction and Objectives: As far as we know, no studies have reported on seasonal changes of symptoms among patients with chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) for an extended period of time. We evaluated whether seasonal changes flare up the symptoms of CP/CPPS by serial administration of the National Institutes of Health chronic prostatitis symptom index (NIH-CPSI) questionnaires for a 27-month follow-up.
Materials and Methods: A total of 77 men who had evaluated the CP/CPPS symptoms were enrolled. The subjects were requested to complete a NIH-CPSI questionnaire every 2 or 3 months during the regular follow-up. We calculated the mean value from the available scores over that season for each individual patient. If a patient experienced a break-through symptom between the regular follow-up visits, he was encouraged to visit the clinic for the evaluation. The break-through symptoms were defined as a walk-in clinic visit due to flare up of symptoms, or NIH-CPSI total scores higher than 3 times when compared to the previous regular visit and patients wanted new medications for

MP-19.03, Table 1. Clinical characteristics of study subjects

No. of patients	77
Age (yr)	55.12 ±11.88
EPS*	9.18 ± 11.19
Initial NIH-CPSI** score	
Pain item 1-3 (sum)	3.08 ± 2.04
Pain item 4	3.51 ± 2.44
Voiding domain	5.52 ± 2.54
Quality of life domain	5.41 ± 2.37
Follow up (mo)	27.11 ± 10.00
No. of visiting	14.68 ± 5.33

The data were expressed as mean ± SD.
*Expressed prostatic massage.
**NIH-CPSI; Korean version of National Institutes of Health chronic prostatitis symptoms index.

MP-19.03, Figure 1.

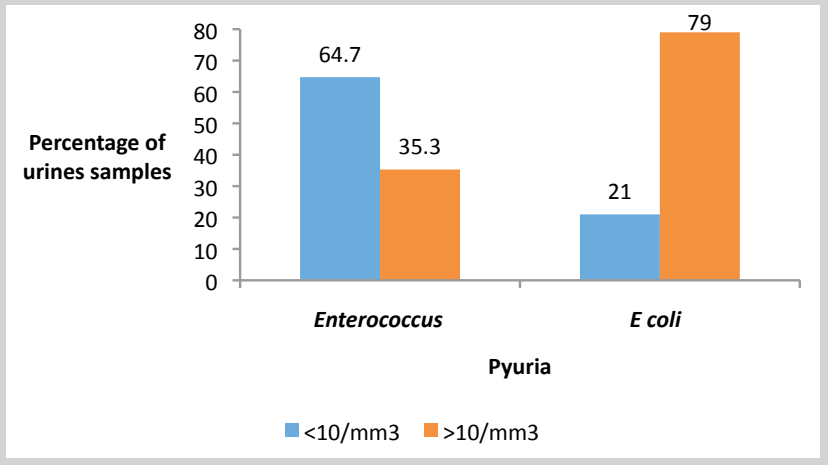


ameliorating the flare up symptoms.
Results: The clinical characteristics of subjects are shown in Table 1. Fifty-eight patients complained of break-through symptoms during the follow-up. The incidences of break-through symptoms of CP/CPPS in our study were lowest in July and August and highest in February (Figure 1).
Conclusion: We observed the symptom changes among CP/CPPS patients for an extended duration. We found that severe pain attack was in winter and lesser during the summer season.

MP-19.04
Isolation of Enterococcus without Associated Pyuria in Midstream Urine Specimens is Common: Caution against Overtreatment
Dingle L[1], Aali A[2], Gopal Rao G[1], **Batura D**[2]
[1]North West London Hospitals NHS Trust, London, UK; [2]Ealing Hospital NHS Trust, London, UK

Introduction and Objectives: Recent research comparing urine collected from in-out catheters with midstream urine (MSU) from patients with suspected uncomplicated UTI has shown that enterococci present in MSU are commonly absent in urine collected by in-out catheters. This suggests that enterococci are frequent contaminants in MSU and patients may be needlessly treated with antibiotics. As absence of significant pyuria (>10 WCC/mm^3) may indicate contamination, we investigated the frequency of association of significant enterococcal bacteriuria (>10^5 cfu/ml) with significant pyuria.
Materials and Methods: This is a retrospective cross-sectional review of microscopy and culture results of urines processed in a laboratory of a large district general hospital in a single year. We compared significant pyuria in MSUs with significant growth of *Enterococcus* to those where *E coli* was isolated, using standard laboratory methods with microscopy and semi-quantitative culture on CLED and chromogenic agar media.
Results: Of the 1933 MSU where *Enterococcus* was grown, 64.7% of urine specimens did not have evidence of significant pyuria. By contrast, in 7836 MSUs where *E coli* was isolated, only 21% of patients did not exhibit significant pyuria. This difference is statistically significant (p<0.01, Z test for two population proportions) (Figure 1).
Conclusion: Our study shows that significant pyuria is often absent in MSU where enterococci are isolated, unlike *E coli* bacteriuria. This suggests that enterococci may be contaminants and not causative of infection. Clinicians should be cautious about initiating antibiotic treatment based solely on the presence of enterococcal bacteriuria if significant pyuria is not present.

MP-19.04, Figure 1. Percentage of MSU with Significant Pyuria where Enterococcus or E coli were Isolated



MP-19.05
Risk Factor for Chlamydia Infection among Men Attending a Urology Outpatient Clinic
Lee G[1], Cho I[2]
[1]Dankook University College of Medicine, Cheonan, South Korea; [2]IlsanPaik Hospital, Inje University, Ilsan, South Korea

Introduction and Objectives: We examined the risk factors of chlamydia infection among men attending a urology outpatient clinic.
Materials and Methods: Men, aged 18 to 55 years, were recruited over 4 years. The participants were evaluated by the suggestive symptoms or signs of chlamydia infection such as urethral discharge, genitourinary pain or discomfort, micturition symptoms, and WBC (white blood cell) counts in EPS (expressed prostatic secretion). We evaluated the genitourinary pain or discomfort by using a NIH-CPSI (Chronic Prostatitis Symptom Index) questionnaire. The urination symptoms were evaluated with the NIH-CPSI and IPSS (International Prostate Symptom Score) questionnaires. In house NAAT (Nucleic-Acid Amplification Test) for *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* detection, and WBC counts were performed from the patient's first-void urine. Variable that were statistically significantly different (P<0.05) in bivariate analyses were then put into a multivariate logistic regression model.
Results: A total of 804 consecutive participants were recruited. The overall CT prevalence was

MP-19.05, Table 1. Multivariate analysis of risk factors for *Chlamydia trachomatis* infection

Risk factors	OR[1] (95% CI[2])	*P*-values
Age	0.979 (0.951-1.008)	0.154
WBC[3] count in EPS[4] (No/HPF[5])		
0-4	1	
5-15	1.677 (0.751-3.744)	0.207
>15	1.982 (1.006-3.903)	0.048
WBC[3] count in urine (No)		
0-1	1	
>1-4	4.290 (2.124-8.664)	0.000
>4	1.228 (0.400-3.776)	0.720
Urethral discharge		
No	1	
Yes	4.048 (1.565-10.475)	0.004
NIH-CPSI[6] pain or discomfort score		
2a[7]		
No	1	
Yes	1.561 (0.830-2.939)	0.167
2b[8]		
No	1	
Yes	1.956 (1.035-3.696)	0.039

[1]OR; adjusted odds ratio, [2]CI; confidence interval, [3] WBC; white blood cell, [4] EPS; expressed prostate secretion, [5] HPF; high power field, [6] NIH-CPSI; Korean version of NIH-chronic prostatitis symptom index, [7] 2a; pain or burning during urination, [8] 2b; pain or discomfort during or after sexual climax (ejaculation).

7.9% (64/804). The WBC numbers in EPS, the WBC counts in the first-voided urine, the presence of urethral discharge, pain or burning during urination, and pain or discomfort during or after sexual climax (ejaculation) were statistically associated with the chlamydial infection in bivariate analysis. However, the urination symptoms from NIH-CPSI or IPSS questionnaires were not definitively correlated with the chlamydial infection. Furthermore, pain or discomfort on perineum, testicle, tip of the penis, and below waist, were not related to the infection. Multivariate analysis found that >15 WBCs in EPS, 1-4 WBCs in, urethral discharge, and pain or discomfort during or after sexual climax (ejaculation) were statistically significant risk factors for chlamydia infection (Table 1).

Conclusion: The results may be useful in selective screening processes for chlamydia infection in men with these risk factors who attend urology outpatient clinics.

MP-19.06

The Use of Intravesical Gentamicin to Treat Recurrent Urinary Tract Infections

Warren K[1], Huf S[1], Hashim[1], Parsons B[2], Tomson C[1], MacGowan A[1], Edwards C[1], Coles S[2], **Abrams P**[1]

[1]Southmead Hospital, Bristol, UK; [2]Royal Devon and Exeter Hospital, Devon, UK

Introduction and Objectives: Recurrent urinary tract infections (UTIs) are a common problem, which negatively impact on quality of life. In a small number of individuals including complex urological patients, UTIs become refractory to standard treatment so hospital admission and intravenous antibiotics are often required. The aim of this study was to assess the use and tolerability of intravesical gentamicin for treating patients with refractory UTIs.

Materials and Methods: A two-centre retrospective cohort study of patients treated with intravesical gentamicin was performed over a two-year period. A treatment protocol was developed, reviewed and accepted by the clinical effectiveness committee of both hospitals. Patients were taught to instill the gentamicin (80mg in 50ml of sterile water) into the bladder on a nightly basis by a urology specialist nurse. Inclusion criteria included failure to respond to standard therapy, having 6 or more cultured confirmed UTIs over a 12 month period or at least 1 hospital admission with sepsis. Serum gentamicin levels were taken after 7 days and the treatment was discontinued if the level was >1mg/L. Patients were counseled about the limited evidence base for this treatment.

Results: Fourteen patients have been treated with intravesical gentamicin for an average of 16 months. Ten were performing ISC and 2 had suprapubic catheters at the time of instituting treatment. All fourteen patients started on daily 80mg gentamicin, but once control had been achieved one changed to 160mg every other day and another to every 5 days. The serum gentamicin level was <0.3ng/ml on day 7 for all patients and none reported side effects. Of the 12 patients who continued with the instillations, 7 patients have had no further proven UTIs. One patient had a single enterococcus infection, which was resistant to gentamicin. Three patients have had more than 1 coliform or enterococcus infection amenable to single courses of oral antibiotics.

Conclusion: This case series has shown that in the small number of adult patients who have multiple symptomatic UTIs that are refractory to conventional treatment, intravesical gentamicin is effective in reducing the frequency of infections. The treatment is well tolerated with no evidence of systemic absorption.

MP-19.07

Factors Influencing Length of Stay and Suitability for Early Community Discharge in the Management of Acute Pyelonephritis (APN)

Hsu R, Shergill P, Gnanapragasam V

Cambridge University Hospital NHS Foundation Trust, Cambridge, UK

Introduction and Objectives: APN is a common urological condition necessitating thousands of admissions a year and often with prolonged hospitalisation. Here we assessed factors that influenced the length of stay and suitability for safe early discharge of APN patients to community care.

Materials and Methods: Patients diagnosed with APN (ICD N10) in 2011-2012 to a tertiary hospital were included in a retrospective study. Data collected included patient demographics, Charlson Co-morbidity Index (CCI), admitting speciality, imaging, hospital stay and any intervention.

Results: A total of 266 patients were analysed with a median age of 35 years (range 15-91 years). 83.1% were managed by urologists and the rest by different specialities. Mean stay was 5.0 days (range 1-73 days). The mean time to imaging was 0.49 days and 1.43 days for urology and other specialties respectively (p<0.001). 18.8% (50/266) of patients had urinary tract abnormalities on imaging but only 1.9% (5/266) required intervention. 9.4% (25/266) had subsequent imaging following an initial scan but none resulted in an intervention. Patients in non-urological specialties were older (p=0.001) and had higher CCI (p<0.001). A high CCI was also a significant predictor of longer stays regardless of admitting specialty (p<0.001). Admission to non-urological specialties however remained a significant predictor of both delayed imaging (p=0.001) and longer stays (p<0.001) even after correction for CCI.

Conclusion: Admitting specialty, co-morbidity and time to imaging are key factors that influence APN management. Rapid urological review and imaging could identify patients suitable for safe early discharge to community management. Urinary tract anomalies or significant co-morbidity however will continue to need specialty specific hospital care.

MP-19.08

Antibiotic Resistance Patterns in an Emergency Room of a Tertiary Care Center in Mexico

Olvera-Posada D, **Gómez O**, Niembro M, Del Moral S, Calao M, Ponce de León L, Rodriguez-Covarrubias F

INNSZ, Mexico City, Mexico

Introduction and Objectives: Urinary tract infection (UTI) is one of the most common reasons for emergency room (ER) visits. Antibiotic resistance patterns have changed in recent

years narrowing treatment options, particularly in patients with relevant medical history. We made a retrospective analysis of UTIs diagnosed in the ER of a tertiary care center in Mexico to look for patterns of resistance and predictive factors for extended-spectrum beta-lactamase (ESBL) producing microorganisms.
Materials and Methods: We analyzed data from patients with urinary tract symptoms and positive urine culture after ER evaluation from January 2013 to June 2013. Clinical, demographic and microbiological characteristics were analyzed. Patterns of resistance were studied according to the intrinsic spectrum of each antimicrobial agent. Mann-Whitney test was used to compare differences between ESBL isolations. Statistical analysis was performed with SPSS v.20.
Results: There were 177 patients included with a total of 198 isolated microorganisms. Mean age was 57.1 years and 74% were women. Eighty three percent were classified as complicated UTI and most were managed as outpatients (80.2%). The most common microorganisms were *E. coli* (71.7%, n=142), *Enterococcus sp* (n=15), *Klebsiella pneumoniae* (n=13) and *Proteus mirabilis* (n=10). Other different bacteria were found in 18 cases. ESBL microorganisms were found in 39.3% of all urine cultures and were more common among those with urological comorbidities (p<0.0001), recent hospitalization (p=0.008), prior urological procedures (p=0.001), recent antibiotic use (p=0.036) and those with recurrent UTI (p=0.049). Patients requiring hospitalization tended to be more commonly affected by ESBL organisms (56.8% vs. 28%, p=0.002). Specific isolated microorganisms showed a 55% resistance to trimethoprim/sulfamethoxazole, 51.5% to quinolones, 31.3% to gentamicin, 18.8% to nitrofurantoin and 9.1% to fosfomycin. Microorganisms resistant to fosfomycin were more frequently isolated in patients with recurrent UTI (16.4% vs. 5.3, p=0.017).
Conclusions: We found a high prevalence of ESBL producing bacteria in UTI diagnosed in ED. Patients with recent hospitalization, antibiotic use, urological manipulation and recurrent UTI were more frequently infected by this type of microorganisms. Lowest rates of resistance were for nitrofurantoin and fosfomycin. Therefore we suggest these agents should be used for uncomplicated UTI as outlined by recent practice guidelines.

MP-19.09
The Battle against Catheter-Associated Biofilms
Wilks S, Prieto J, Fader M, Keevil W
University of Southampton, Southampton, UK

Introduction and Objectives: The long-term use of indwelling catheters can result in persistent infections and blockages with up to 50% of patients experiencing encrustations and an almost permanent bacterial colonisation of urine. Previous work has shown the presence of biofilms to be an important factor in both infection risk and in the formation of encrustations which lead to catheter blockage. Here we report on an advanced microscopy technique which can be used to examine biofilms directly on catheters, revealing new information on their development and persistence.
Materials and Methods: Using a 6-well plate assay and defined artificial urine medium, the attachment of uropathogenic *Escherichia coli*, *Pseudomonas aeruginosa* and *Proteus mirabilis*, and subsequent biofilm formation on silicone and hydrogel latex catheter sections were followed. Resuspended bacterial cells were quantified using culture techniques and epifluorescence microscopy following labelling with the LIVE/DEAD BacLight™ bacterial staining system. Episcopic differential interference contrast (EDIC) microscopy was then used to examine biofilm structures directly on catheter sections, to give pseudo-3D images of biofilms and the surface topography of the catheter material.
Results: All analysis methods showed rapid attachment of all bacteria on all catheter materials, with culture analysis indicating 10^6 cm^{-2} after 2 h exposure. EDIC microscopy could be successfully used to show the surface topography of the catheter material and interactions with the developing biofilm. Initially individual bacterial cells could be seen to attach before the entire surface was covered within 6 h. With the exception of *P. mirabilis*, after 24 h exposure detachment events could be observed where areas of biofilm had sloughed away, leaving exposed catheter surfaces ready for re-colonisation. On exposure to *P. mirabilis*, an extensive crystalline biofilm was observed with copious amounts of diffuse material and well-defined struvite crystals. Using EDIC microscopy, we were able to track the various stages of biofilm development.
Conclusions: Using a range of techniques it was clear that bacteria attach to all catheter material types, resulting in rapid biofilm formation. Increasing our understanding of biofilm development and persistence will aid in the preparation of protocols for control and prevention, including the development of new catheter materials.

MP-19.10
Endoscopy, Bacteriology or Histology: How to Diagnose Bladder Tuberculosis?
Kulchavenya E, Kholtobin D
Novosibirsk Research TB Institute, Medical University, Novosibirsk, Russia

Introduction and Objectives: Bladder tuberculosis (BTB) complicates kidney TB in 45.8 – 84.8% and is one of the most severe complications, and leads to the shrinking of bladder and development of terminal renal failure. According to the classification, BTB is divided in 4 grades, as well as iatrogenic bladder TB as a complication of the BCG therapy for bladder cancer.
Materials and Methods: In order to estimate the value of endoscopy, bacteriology and histology for diagnosis BTB, we analyzed 190 patients suspicious of BTB. All underwent X-ray examination, including intravenous urography and multispiral computer tomography, cystoscopy (excluding patients with cystostoma due to extremely low bladder volume), bladder biopsy. Patients with BTB 4 grade underwent cystectomy with iliocystoplastic, bladder tissue was also investigated. Bacteriology included luminescent microscopy of the sediment of urine, microscopy of smear colored by Zhiel-Nelsen technique, culture on 3 mediums, PCR-diagnostic, Bactec and GenExpert.
Results: Among all 190 patients, bladder tuberculosis (BTB) was confirmed in 18 cases, and non-specific cystitis (NSC) in 172 cases. Decreased volume was revealed in all BTB patients and in 15.7% of NSC patients (p<0.001). Trabecules (66.7%), ulcers (11.1%), contact haemorrhages (83.8%), bullous edema (44.4%), deformity of mouth of ureter (94.4%) were found significantly more often in BTB patients. Hyperemia was met in BTB as often as in NSC (accordingly 38.9% and 33.1%). Histology revealed specific TB inflammation in 11.8% only, in other BTB patients lymphoid and eosinophilic infiltration as well as fibrosis prevailed. M.tuberculosis was found by culture in 11.1%, by PCR – in 16.7%, none – by microscopy.
Conclusion: There are no endoscopic findings to confirm BTB, but there are some signs to suspect this disease. Histological and bacteriological confirmation is possible in 11.8% only- mostly due to late examination, after long antibacterial therapy.

MP-19.11
Optimized Therapy for Prostate Tuberculosis
Kulchavenya E, Brizhatyuk E, Khomyakov V
Novosibirsk Research TB Institute, Medical University, Novosibirsk, Russia

Introduction and Objectives: The therapy of prostate tuberculosis (PTB) is very difficult as a few antibacterial agents are able to distribute to the prostatic tissue and achieve sufficient concentrations at the site of infection.
Materials and Methods: Efficiency of optimized scheme for the therapy of prostate tuberculosis (PTB) was estimated in 53 patients in the age of 24 - 69 (on average 32.1±7.2). Infiltrative PTB was diagnosed in 24, cavernous - in 29. M. tuberculosis (Mtb) was found in 21 patients (39.6%): in 6 by culture and in 15 – by PCR; histological verification was in 8 (15.1%), in 29 patients (54.7%) diagnosis was established by X-ray. The first group (25

patients) was treated with a standard scheme of chemotherapy: in intensive phase 4 anti-TB drugs daily (isoniazid + pyrazinamid + rifampicin per os and streptomycin i.m.). In phase continuation the therapy includes only isoniazid and rifampicin – in intermittent regime (3 times a week). The second group (28 patients) alongside with standard chemotherapy received ofloxacin during intensive phase, and isoniazid was given as intravenous infusion. The phase continuation was identical in both groups. The efficiency was estimated in 2 and 8 months. The criteria of the efficiency were: resolution of pain, dysuria, pyospermia, negative results of bacteriology.

Results: Patients in the 1st group had faster positive dynamic concerning pain, dysuria, pyospermia and negative growths on Mtb as well as PCR in ejaculate; in 8 months best results of optimized therapy were as well. In the 1st group 77.8% of patients had good results; 6 patients (22.2%) had moderate results, while in the control group, who received standard therapy, only 11 patients (44.0%) showed good results, moderate results – 13 patients (52.0%), one patient (4.0%) had poor result after completion full course of standard therapy.

Conclusion: Thus, optimization of the standard therapy by additional administration of ofloxacin improved results of the treatment on 33.8%.

MP-19.12
Urogenital Tuberculosis as Multivariant Disease
Kulchavenya E
Novosibirsk Research TB Institute, Medical University, Novosibirsk, Russia

Introduction and Objectives: Urogenital tuberculosis (UGTB) is one of the most common forms of tuberculosis (TB) after pulmonary TB.

Materials and Methods: With the purpose to estimate clinical features of UGTB, we analyzed historical cases of 131 patients.

Results: Among 131 patients with UGTB, 88 (67.2%) had isolated kidney TB (KTB): 10 patients (10.2%) – TB of parenchyma, 35 patients (39.8%) – papillitis, 22 patients (22.4%) - cavernous KTB, 21 patients (21.4%) - polycavernous KTB); in 10 patients alongside with polycavernous KTB male genital TB (MGTB) was diagnosed. In 33 patients (25.2) MGTB only was revealed: in 14 – orchiepidydidimitis, and in 19 – prostate TB. Main clinical features were pain (flank or perineal), dysuria, hematuria, hemospermia, toxicity, but their frequency varied from 0 to 60.0% in different groups. Among all cohort of UGTB asymptomatic course was in 12.2%, among kidney TB - in 15.9%. Every third patient complained of flank pain and dysuria (accordingly 35.2% and 39.8%), 17% presented toxicity symptoms, 9.1% - renal colic, 7.9% - gross-hematuria. MBT was found in 31.8% in isolated kidney TB as whole. Sterile pyuria was in 25%. The onset of TB orchiepidydydmitis was in 35.7%, hemospermia - in 7.1%, dysuria - in 35.7%. Most common complaints for prostate TB were perineal pain (31.6%), dysuria (also 31.6%), hemospermia (26.3%). MBT in prostate secretion / ejaculate was revealed in this group in 10.5%.

Conclusion: UGTB is a heterogeneous disease. Term UGTB is incorrect and incomplete for characteristic of clinical features, as it combines some different forms of the disease with their own clinical features and outcomes. UGTB is a collective term, and its usage may lead to discrepancy, misunderstanding and misdiagnosing.

MP-19.13
Prostate Inflammation in Patients with Pulmonary Tuberculosis
Kulchavenya E
Novosibirsk Research TB Institute, Medical University, Novosibirsk, Russia

Introduction and Objectives: Tuberculosis (TB) is a global medical and social problem. The majority of pulmonary TB (PTB) patients are young men, and prostate diseases are common for them.

Materials and Methods: Seventy two male PTB patients were enrolled in the study: 26 with fibrocavernous PTB (FCPTB), and 46 with infiltrative PTB (IPTB), as well as 37 healthy voluntaries for control. Expressed prostatic secretion (EPS) and ejaculate were investigated by microscopy and culture. All PTB patients who were diagnosed as prostatitis received alongside with anti-TB chemotherapy prostatotropic treatment with afala (realized active anti-bodies to prostatic specific antigen) and prostanorm (complex herbal drug).

Results: In IPTB patients, prostate inflammation was revealed in 32.6%, in FCPTB - in 57.7%. Only 54% of healthy voluntaries had leukocytosis in EPS. Leukocytosis in ejaculate was found in 71.7% of IPTB patients, in 84.6% of FCPTB patients, and in 10.8% in control group. Growth of microflora in EPS/ejaculate was found in 17.4% of IPTB patients and in 38.5% - in FCPTB patients. M. tuberculosis was found in 4.4% - 6.9% accordingly. Complex afala + prostanorm in PTB patients with prostatitis (both TB and non-specific) decreased inflammation on 30.0% in patients with IPTB and on 26.9% - in patients with FCPTB and improved reproductive function on 15.3% - 35.7 accordingly.

Conclusion: Prostate inflammation is a common condition in PTB patients, prostate TB was revealed in 6.9%. Complex afala + prostanorm significantly decrease prostate inflammation as well as improve reproductive function in PTB patients.

MP-19.15
Differential Diagnosis of Bladder Tuberculosis
Kulchavenya E, Kholtobin D, Brizhatyuk E
Novosibirsk Research TB Institute, Medical University, Novosibirsk, Russia

Introduction and Objectives: Bladder tuberculosis (BT) is difficult to be diagnosed in time; for a long time it has been misdiagnosed as recurrent cystitis.

Materials and Methods: In order to estimate the diagnostic value of spectrum of low urinary tract symptoms (LUTS), the comparison of dysuria was conducted between BT and recurrent cystitis (RC) in 70 female patients: 35 with BT and 35 with RC.

Results: Among BT patients acute debut was in 2 (5.7%), 33 patients (94.3%) had chronic suprapubic pain, which increased when bladder filled. Nineteen BT patients (54.3%) had transient hematuria, 11 (31.4%) – gross-hematuria. Antibacterial therapy with nitrofurantoin and fosfomycin was performed on 7 (20.0%) BT patients but was not effective at all, which allowed to suspect urogenital tuberculosis soon. Another 28 BT patients (80.0%) were treated with fluoroquinolone that resulted in rather fast resolution of symptoms, but recurrence in the following few months. Correct diagnosis BT was established in this group in 6.4 years on average. In BT patients, LUTS progressed over time, the bladder volume increased. Nobody had any symptoms due to sexual intercourse. Among 35 women with RC the onset of the disease was acute without any precursor. Eleven patients (31.4%) had correlation between relapse and sexual intercourse. All 35 RC patients had frequency, urgency and burning pain when urinating, 18 patients (51.4%) had terminal hematuria. The efficacy of standard antibacterial therapy or phytotherapy was fast and complete. The significance difference (p=0.001) was found in the debut of the disease, correlation with sexual intercourse, character of pain and hematuria.

Conclusion: There are significant differences in the spectrum of LUTS in recurrent cystitis and bladder tuberculosis which allow to suspect bladder tuberculosis in time in patients with dysuria.

MP-19.16
Detection of Pathogens of Sexually Transmitted Diseases in the Removed Prostatic Tissue from Patients with Benign Prostatic Hyperplasia and Prostate Cancer
Pasiechnikov S[1], Grygorenko V[2], **Grytsai V**[1], Glyebov A[1], Kravchenko O[2]
[1]Bogomolets National Medical University, Kyiv, Ukraine; [2]SI Institute of Urology of NAMS of Ukraine, Kyiv, Ukraine

Introduction and Objectives: There are also known the high distribution of the sexually transmitted diseases (STD), and the possibility of their latent course. We studied the infectivity of

prostatic tissue (PT) by STD pathogens in patients who had undergone transvesical and radical prostatectomy for benign prostatic hyperplasia (BPH) and prostate cancer (PC), respectively.
Materials and Methods: There were examined the 195 BPH patients who had undergone transvesical prostatectomy and the 52 PC patients who had had radical prostatectomy. The age of patients varied between 50 and 86 years. As a result of a routine clinical examination, not a single patient demonstrated changes in general analysis of blood or urine, biochemical analysis of blood and also the STD in anamnesis. The infectivity by pathogens of urogenital chlamydiosis, mycoplasmosis, ureaplasmosis and trichomoniasis was studied using the polymerase chain reaction in the PT removed during the surgical operation.
Results: In the PT DNA pathogens of urogenital infections were identified in 46 (23.6±3.0%) patients with BPH and in 11 (21.2±5.7%) patients with PC (p>0.05). The Table 1 represents the spectrum of the STD pathogens identified in the PT of the men being operated on for BPH and PC. As a whole, the frequency of DNA detection of STD pathogens in patients with BPH and PC in the removed PT significantly did not differ and was 30.8±3.3% and 23.1±5.8%, respectively. With this, the frequency of DNA detection of molicutes (Mycoplasma hominis, Ureaplasma urealyticum) as well as the associations of microorganisms statistically prevail 2.8 times and 3.8 times, respectively, in the BPH patients than in the PC patients.
Conclusions: In 23.6% of patients with BPH and in 21.2% with PC (p>0.05) DNA of the STD pathogens are found in the intraoperatively removed PT. In the spectrum of the detected pathogens in the patients with BPH and PC dominates Trichomonas vaginalis. The molicutes and associations of pathogens are significantly more often are found in the patients with BPH than in those with PC. The STD pathogens, present in the PT, which may cause the complications after surgical treatment for BPH and PC demand their identification.

MP-19.16, Table 1. Specific Spectrum of STD Pathogens in the Investigation of PT of Men Operated on for BPH and PC

Pathogen types	PT				p-value
	PC patients (n=52)		BPH patients (n=195)		
	abs.n	%±SE	abs.n	%±SE	
Trichomonas vaginalis	8	15.4±5.0	27	13.8±2.5	p>0.05
Mycoplasma hominis, Ureaplasma urealyticum	2	3.8±2.7	21	10.8±2.2	p<0.05
Chlamydia trachomatis	2	3.8±2.7	12	6.2±1.7	p>0.05
Total	12	23.1±5.8	60	30.8±3.3	p>0.05
Association of STD pathogens	1	1.9±1.9	14	7.2±1.9	p<0.05

MP-19.17
Detection of Microsporidiosis in Patients with Chronic Renal Failure
Omar Fadl H[1], **Khairy H**[2], Salem Ahmed Hanafy N[1], Ali EL Dib N[1]
[1]Dept. of Parasitology, Faculty of Medicine, Cairo University, Cairo, Egypt; [2]Dept. of Urology, Faculty of Medicine, Cairo University, Cairo, Egypt

Introduction and Objectives: Microsporidiosis is an emerging and opportunistic infection causing diarrhea affecting mainly immunocompromised patients. The aim of the work was to detect microsporidial infection in stool and urine samples from chronic renal failure patients using conventional microscopy with Modified Trichrome stain (MTS) and molecular methods using PCR.
Materials and Methods: A cross sectional study was performed on 80 subjects including study group (n=50, chronic renal failure patients) and control group (n=30, apparently healthy volunteers). Fresh stool and urine samples from both groups were subjected to parasitological examination and molecular diagnosis. Each stool sample was examined by microscopy as direct smear for other parasites and Permanent stained smears using (MTS) (Weber Green) for detection of microsporidia spores. The second part will be stored at – 20° in eppendorf tubes for molecular diagnosis by PCR. All urine samples was centrifuged at 5000 rpm for 10 minutes and the sediment was divided into two parts; the first part was examined by microscopy as Permanent stained smears using (MTS) (Weber Green) for detection of microsporidia spores. The second part will be stored at – 20° in eppendorf tubes for molecular diagnosis by PCR. PCR was used as a confirmatory test after MTS for the detection of DNA of microsporidia in stool and urine specimens.
Results: In the study group (n=50), microsporidiosis was revealed in 2 stool samples (4%) using both PCR and Modified Trichrome stain. One stool sample was positive only by MTS staining. No microsporidia spores were detected in the urine samples or the control group. Associated Risk factors in the study group included; anemia in 70%, diabetes in 20%, cortisone treatment in 20%, and malignancy in 4%. Other parasites were detected by MTS in the study group; Cryptosporidium oocyst (4%), Blastocystis (38%), and cyclospora (2%). Microsporidiosis was positive in 2 stool samples of the study group.
Conclusion: Microsporidiosis is an important cause of diarrhea affecting mainly immunocompromised patients including those with CRF. Modified Trichrome Stain is a valuable and low cost method for detection of microsporidial spores.

Moderated Poster Session 20
Prostate Cancer: Basic Science
Wednesday, October 15
1300-1430

MP-20.01

Can ERG Protein Expression at Diagnosis Predict Prostate Cancer Progression for Patients Managed on Active Surveillance?

Drimer Berg K[1], Vainer B[2], Birkebæk Thomsen F[1], **Røder M**[1], Gerds T[3], Grønkær Toft B[2], Brasso K[1], Iversen P[1]

[1]Dept. of Urology, Copenhagen Prostate Cancer Center, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark; [2]Dept. of Pathology, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark; [3]Dept. of Biostatistics, University of Copenhagen, Copenhagen, Denmark

Introduction and Objectives: New biomarkers identifying prostate cancer (PCa) patients with high risk of disease progression during active surveillance (AS) are needed. We aimed to analyse the association between ERG protein expression at diagnosis and risk of progression during AS.

Materials and Methods: In total, 265 PCa patients were followed prospectively on AS with prostate-specific antigen (PSA) measurements, clinical examinations including digital rectal examination, and 10-12 core re-biopsies. Immunohistochemical analysis for ERG protein expression was performed on diagnostic sections using a monoclonal antibody (anti-ERG, EPR3864; Roche/Ventana). Patients were labelled as 'ERG-positive' if minimum one tumour focus demonstrated ERG-expression and otherwise as 'ERG-negative'.

The primary endpoint was '*Overall AS progression*' during AS defined as minimum one of:

- *Clinical-progression:* increased clinical tumour category ≥cT2b
- *Histopathological-progression:* Increase in Gleason score; >3 positive cores and/or bilateral positive cores on re-biopsies
- *PSA-progression:* PSA doubling time <3 years.

We used multiple cause-specific Cox regression and stratified cumulative incidences for analyzing the risk of progression; competing events were curatively intended treatment, watchful waiting and death without progression. Finally, re-classification diagrams and calibration plots were applied for assessing changes in the predicted risk of progression when adding ERG-status to the multiple regression models.

Results: A total of 217 patients had complete diagnostic information; 121 were ERG-negative and 96 were ERG-positive. ERG-positive patients had significantly higher incidences of overall AS progression (p<0.0001), PSA-progression (p<0.0001) and histopathological-progression (p<0.0001) when using competing risk models. The 2-yr cumulative incidence of overall AS progression was 58.6% (95%CI: 48.7%-68.5%) for ERG-positive patients and 21.7% (95%CI: 14.3%-29.1%) for ERG-negative patients. ERG-positivity was a predictor of overall AS progression (HR: 2.45, [95%CI: 1.62-3.72], p<0.0001) and histopathological progression (HR: 3.06, [95%CI: 1.78-5.26], p<0.0001) in multiple cause-specific Cox regression models. ERG-status significantly altered the predicted risk of progression during AS beyond the other diagnostic parameters.

Conclusion: ERG-positive PCa runs a more aggressive course if left untreated. ERG-status assessed at diagnosis can be used as a prognostic marker for progression and may be used to individualise future AS-programmes.

MP-20.02

IGF-1 Related Pathways and High-Fat Diet Promotion of TRAMP Mouse Prostate Cancer Progression

Xu H, Jiang H, Ding Q

Huashan Hospital, Fudan University, Shanghai, China

Introduction and Objectives: We aimed to examine the effect of high-fat diet on PCa development and progression by comparing tumor incidence and mortality among TRAMP mice fed with high-fat diet or not. Then we investigate the role of IGF-1 related pathway in high-fat diet promotion of TRAMP mouse PCa progression.

Materials and Methods: TRAMP (Transgenic Adenocarcinoma of the Mouse Prostate) mice were randomly divided into two groups: the experimental group - high-fat diet group (n=42), and the control group - ordinary diet group (n=42). High-fat diet group TRAMP mice were fed with high-fat forage to induce obesity and insulin resistance. TRAMP mice of both groups were sacrificed and sampled on the 20th, 24th and 28th week respectively. TRAMP mice were required to fast overnight before sacrifice. Fasting blood glucose was measured when blood was taken. Serum levels of insulin, IGF-1 and IGF-2 were tested by ELISA. Prostate tissue of TRAMP mice was used for both HE staining and immunohistochemical staining of IGF-1 related pathway proteins, including IGF-1Rα, IGF -1Rβ, IGFBP1, IGFBP2, IGFBP3, IGFBP5, IGFBP6 and Akt.

Results: A total of 13 cases of death were observed in the study, including 3 TRAMP mice (7.14%) from the normal diet group, and 10 TRAMP mice (23.81%) from the high-fat diet group. The mortality of TRAMP mice from high-fat diet group was significantly higher than normal diet group (P=0.035). When TRAMP mice were sacrificed at 20th week, there were 11 TRAMP mice (78.57%) from high-fat diet group had typical PCa, while there were only 5 TRAMP mice (35.71%) from ordinary diet group had typical PCa. The tumor incidence at 20th week of TRAMP mice from high-fat diet group was significantly higher than normal diet group (P=0.022). Blood glucose, serum insulin and IGF-2 levels were not significantly different among normal diet group and high-fat diet group at 20th, 24th and 28th week. But serum IGF-1 level of high-fat diet TRAMP mice was significantly higher than that of normal diet TRAMP mice. The difference was even significant at 28th week with P value of 0.011. In addition, serum IGF-1 level tended to increase with high-fat diet TRAMP mice's age. Immunohistochemical staining of TRAMP mice prostate showed that high-fat diet TRAMP mice had higher positive staining rate of IGF-1Rα, IGF-1Rβ, IGFBP3 and Akt than normal diet TRAMP mice. Though other IGF binding proteins (IGFBP1, IGFBP2, IGFBP5 and IGFBP6) were also expressed in TRAMP mice prostate, there was no significant difference of positive staining rate between the two groups.

Conclusion: Tumor incidence and mortality of high-fat diet TRAMP mice were significantly higher than those of normal diet TRAMP mice, indicating that high-fat diet can promote PCa development and progression. IGF-1 related pathway proteins, including IGF-1, IGF-1Rα, IGF-1Rβ, IGFBP3 and Akt, were found to have higher expression in high-fat diet TRAMP mice by ELISA and immunohistochemical staining study, suggesting that IGF-1 related pathway played an important role in high-fat diet promotion of TRAMP mouse PCa development and progression.

MP-20.03

Cytokines and High-Fat Diet Promotion of TRAMP Mouse Prostate Cancer Progression

Xu H, Jiang H, Ding Q

Huashan Hospital, Fudan University, Shanghai, China

Introduction and Objectives: We aimed to examine the effect of high-fat diet on PCa development and progression by comparing tumor incidence and mortality among TRAMP mice fed with high-fat diet or not. Then we investigate the role of cytokines in high-fat diet promotion of TRAMP mouse PCa progression.

Materials and Methods: TRAMP (Transgenic Adenocarcinoma of the Mouse Prostate) mice were randomly divided into two groups: the experimental group - high-fat diet group (n=42), and the control group - ordinary diet group (n=42). High-fat diet group TRAMP mice were fed with high-fat forage to induce obesity and insulin resistance. TRAMP mice of both groups were sacrificed and sampled on the 20th, 24th and 28th week respectively. TRAMP mice were required to fast overnight before sacrifice. Prostate tissue of TRAMP mice was used for HE staining. Serum levels of different cytokines

including IL-1α, IL-1β, IL-2, IL-4, IL-5, IL-6, IL-10, IL-13, IL-17, IL-21, IL-22, INF-γ, and MCP-3 were examined by FlowCytomix.
Results: A total of 13 cases of death were observed in the study, including 3 TRAMP mice (7.14%) from the normal diet group, and 10 TRAMP mice (23.81%) from the high-fat diet group. The mortality of TRAMP mice from high-fat diet group was significantly higher than normal diet group (P=0.035). When TRAMP mice were sacrificed at 20th week, there were 11 TRAMP mice (78.57%) from high-fat diet group had typical PCa, while there were only 5 TRAMP mice (35.71%) from ordinary diet group had typical PCa. The tumor incidence at 20th week of TRAMP mice from high-fat diet group was significantly higher than normal diet group (P=0.022). Blood glucose, serum insulin and IGF-2 levels were not significantly different among normal diet group and high-fat diet group at 20th, 24th and 28th week. But serum IGF-1 level of high-fat diet TRAMP mice was significantly higher than that of normal diet TRAMP mice. The difference was even significant at 28th week with P value of 0.011. Several cytokines were significantly higher in high-fat diet TRAMP, including IL-5 (20th week 16.05 pg/mL vs. 3.61 pg/mL, P=0.028; 28th week 35.07 pg/mL vs. 10.08 pg/mL, P=0.016), IL-10 (20th week 9.08 pg/mL vs. 0.21 pg/mL, P<0.001; 28th week 21.94 pg/mL vs. 2.63 pg/mL, P=0.019), IL-17 (20th week 8.70 pg/mL vs. 5.27 pg/mL, P=0.040), IL-21 (20th week 6.63 pg/mL vs. 0.98 pg/mL, P=0.002; 28th week 13.39 pg/mL vs. 3.07 pg/mL, P=0.014), IFN-γ (20th week 5.92 pg/mL vs. 0.33 pg/mL, P<0.001). MCP-3 was significantly lower in high-fat diet TRAMP (24th week 70.99 pg/mL vs. 295.69 pg/mL, P<0.001; 28th week 65.16 pg/mL vs. 135.85 pg/mL, P=0.019).
Conclusion: Tumor incidence and mortality of high-fat diet TRAMP mice were significantly higher than those of normal diet TRAMP mice, indicating that high-fat diet can promote PCa development and progression. Several cytokines were significantly higher in high-fat diet TRAMP, including IL-5, IL-10, IL-17, IL-21, and IFN-γ, while MCP-3 was significantly lower in high-fat diet TRAMP, suggesting that cytokines played an important role in high-fat diet promotion of TRAMP mouse PCa development and progression.

MP-20.04
microRNA Dysregulation Supports Proliferative Inflammatory Atrophy as an Independent Precursor Lesion in Prostate Carcinogenesis
Walsh A[1,2], O'Rourke C[2], Tuzova A[2], Hayes B[3], Hanson J[4], Emmert-Buck M[4], Finn S[3], Lynch T[1,2], Perry A[2]
[1]Dept. of Urology, St. James's Hospital, Dublin, Ireland; [2]Prostate Molecular Oncology Group, Trinity College, Dublin, Ireland; [3]Dept. of Histopathology, St. James's Hospital, Dublin, Ireland; [4]Laboratory of Pathology, National Cancer Institute, National Institutes of Health, Bethesda, USA

Introduction and Objectives: High-grade prostatic intra-epithelial neoplasia (HGPIN) is currently the only accepted precursor lesion of prostate cancer (PCa). Proliferative Inflammatory Atrophy (PIA) describes focal atrophic lesions (containing proliferative epithelial cells that fail to differentiate into columnar epithelial cells), associated with chronic inflammation and has been suggested as a further PCa precursor lesion. Evidence supporting this hypothesis comes from both morphological and molecular data (*P53* mutations, chromosome 8 abnormalities and hypermethylation of *GSTP1*). Dysregulation of microRNAs is a common feature of PCa. However, microRNA data in PIA are lacking. The aim of this study was to examine expression of microRNAs in PIA and HGPIN in comparison to benign prostate tissue and invasive tumour.
Materials and Methods: Laser capture microdissection was performed on FFPE prostate tissue from 10 benign, 8 HGPIN, 4 PIA and 23 PCa samples (6 indolent, 8 aggressive and 9 metastatic tumours). Expression profiling of 752 human microRNAs annotated in miRBAse v18.0 was performed using the Exiqon miRCURY LNA™ qPCR panels I and II with ExiLENT SYBR® Green. Validation of results was performed by qRT-PCR.
Results: Twenty one microRNAs showed significant differential expression in PIA vs. benign prostate tissue (P<0.05 and fold change >1.5). Of these 21 microRNAs, 3 showed similar differential expression patterns in PCa relative to benign tissue, indicating that these molecular events occur in early tumour initiation. Comparing PIA with tumour, 45 microRNAs were differentially expressed, 4 of which were also differentially expressed in PCa vs. benign, suggesting that these aberrations occur in the transition from PIA to invasive tumour. A similar stepwise progression was observed for HGPIN lesions. Notably, there was no other overlap in the expression profile of PIA and HGPIN, indicating divergent pre-invasive lesions. At both stages of the transition from benign prostate tissue to PIA to PCa, miR-205-5p was found to be down-regulated, supporting its role as driver in prostate carcinogenesis.
Conclusion: This is the first report of microRNA dysregulation in PIA, and lends support to the hypothesis that PIA is a precursor lesion to PCa. PIA shows a distinct miRNA expression profile, separate from that of HGPIN and benign prostate tissue.

MP-20.05
Predictive Values of Microvessel Densities Evaluated by CD31, CD34 and CD105 for Biochemical Recurrence after Prostatectomy with Neo-Adjuvant Therapy in Prostate Cancer Patients
Mitsunari K, Miyata Y, Asai A, Matsuo T, Ohba K, Sakai H
Nagasaki University, Nagasaki, Japan

Introduction and Objectives: Neo-adjuvant hormonal therapy (NHT) is often performed to improve the outcomes in prostate cancer patients. However, change of angiogenic condition by NHT is not fully understood. In patients with NHT, we evaluated angiogenesis semiquantitatively by assessing microvessel density (MVD) using endothelial specific markers, CD31, CD34, or CD105 .The aim was to clarify relationships between MVDs in NHT specimens and pathological change or biochemical recurrence.
Materials and Methods: Formalin-fixed specimens from 102 prostate cancer patients received prostatectomy were examined. NHT was performed in 54 patients (52.9%) and 48 patients that has similar Gleason score and pT stage were selected as non-NHT groups. MVD was measured by anti-CD31, anti-CD34, and anti-CD105 antibody. Relationships between each MVD in NHT specimens and anti-tumoral effects including histological effect and biochemical recurrence were investigated by multi-variate analyses. The histopathological effect was evaluated by the standardized rules for estimating the response of prostate cancer to NHT published by the Japanese Urological Association.
Results: CD34-MVD in NHT group (mean/SD=50.2/7.8) was similar to that in non-NHT group (51.6/7.0, P=0.338). Although CD31-MVD in NHT group (36.2/9.9) was lower than in non-NHT group (39.0/8.2), this difference did not reach significant level (P=0.129). CD105-MVD in NHT group (13.0/4.6) was remarkably lower (P<0.001) than in non-NHT group (25.7/6.3). In non-NHT specimens, CD31-, CD34-, and CD105-MVD were significantly associated with Gleason score and pT stage. However, in NHT specimens, CD31- or CD34-MVD was not associated with these pathological features. CD105-MVD in NHT specimens was significantly associated with pT stage (P=0.003). In addition, CD105-MVD in NHT specimens was correlated with histological effect (P=0.002) and biochemical recurrence (P<0.001). CD105-MVD was recognized as an independent predictor for biochemical recurrence (hazard ratio=3.2, 95% confidential interval=1.2-8.2, P=0.016).
Conclusion: Our results showed CD105-MVD reflected angiogenic condition and malignant potential in patients with NHT. CD105-MVD was associated with anti-cancer effects and it was identified as a significant and

independent predictor for biochemical recurrence in patients received prostatectomy after hormonal therapy.

MP-20.06
Periprostatic Adipose Tissue, NGF and BDNF in Prostate Cancer
Evtimov N, Ganev T, Zelezov M, Petkova L
St. Anna Hospital, Varna, Bulgaria

Introduction and Objectives: Obesity is associated with larger size of prostate cancer and higher Gleason scores. The mechanism by which obesity promotes prostate cancer remains unknown. However, the prostate may be target at paracrine to some cancer-influencing adipokines. We focus on the potential role of NGF and related neurotrophins, secreted by the periprostatic and anterior perirectal adipose tissue in prostate cancer. We aimed to assess the immunohistochemical expression of NGF, BDNF, TrkA and p75 in the periprostatic and anterior perirectal adipose tissue in patients with prostate cancer.
Materials and Methods: Eight tissue samples from periprostatic (P-AT) and anterior perirectal (R-AT) adipose tissue were taken intraoperatively from patients with prostate cancer. Each sample contained both adipose and prostate tissue (P-PT and R-PT) from the tumor. Retropubic adipose tissue was taken from the same patients for a control (C). Tissue samples were routinely processed for H&E staining and peroxidase/antiperoxidase immunohistochemistry. For primary antibodies we used rabbit polyclonals (Santa Cruz Biotech) – NGF, BDNF, TrkA; mouse monoclonal (DAKO) – p75. The secondary antibody was EnVision Flex Vis Syst, DAKO. We measured the presence (+) and absence (-) of expression. Appropriate control stainings were used.
Results: All P-AT, R-AT and C samples showed expression of NGF. In the prostate all 174 patients but one P-PT sample expressed NGF. All R-PT samples were also positive. Only two P-AT samples showed positive expression. BDNF was not expressed in all R-AT samples. Only two C samples were positive. In contrast, all P-PT and R-PT samples showed positive expression of BDNF. All P-AT and R-AT samples were negative. Only one C sample showed positive expression. The results were more interesting in the prostate tissue. P-PT samples were all negative for TrkA, whereas all but two R-PT samples showed positive expression. All samples, both AT and PT were negative for p75.
Conclusion: NGF is expressed by both adipose tissue and prostate in periprostatic, perirectal and control samples. BDNF is expressed mostly in the prostate and much less in adipose tissue. TrkA is expressed mostly in the posterior and not in both the anterior prostate and all adipose tissue samples. P75 has no expression in both adipose tissue and prostate. There is little or no significant difference between all adipose tissue samples.

MP-20.07
Low Expression of EphB6 Receptor Tyrosine Kinase in Prostate Cancer
Noguchi M[1], Mohamed E[2], Itoh K[1]
[1]Kurume University School of Medicine, Kurume, Japan; [2]Sohag University Hospital, Sohag, Egypt

Introduction and Objectives: Loss of erythropoietin-producing hepatocyte (Eph) B6 gene expression has been correlated with poor prognosis in neuroblastoma, melanoma and other tumors. This study was evaluated expression of EphB6 Receptors tyrosine kinase (RTK) in normal and prostate cancer tissue using immunohistochemistry. The association among EphB6 expression, clinico-pathological findings, another prognostic marker of proliferating-cell nuclear antigen (PCNA) and progression of prostate cancer was analyzed.
Materials and Methods: Formalin fixed-paraffin embedded tissue blocks of normal prostatic tissue and prostate cancer tissue of 46 patients treated with radical prostatectomy for prostate cancer were included in this study. Polyclonal anti-EphB6 and monoclonal anti-PCNA antibodies were used to assess EphB6 and PCNA expression by immunohistochemistry.
Results: EphB6 expression was demonstrated in both normal and prostate cancer tissue. There is a significant reduction of EphB6 expression in prostate cancer tissue compared to normal prostatic tissue ($p<0.0001$), in high volume (≥4 cc) of cancer compared to low volume (<4cc) of cancer ($p = 0.015$) and in pT3 stage compared to pT2 stage of the disease ($p = 0.0007$). EphB6 expression has no correlation with expression of PCNA proliferation marker. Although there is no significant difference, there is a trend of short biochemical progression free survival in patients with low expression status of EphB6 protein ($p = 0.157$).
Conclusion: This study revealed that early progression of prostatic cancer is significantly associated with low expression of EphB6 RTK. This could provide a new insight to use EphB6 receptor as a potential diagnostic/prognostic marker for prostate cancer.

MP-20.08
"Shared Care Model" for Patients with Stable Prostate Cancer
Englund C, Lund L
Dept. of Urology, OUH, Odense, Denmark

Introduction and Objectives: The prevalence of PC is rising and patients PC are frequently checked and have their follow-up in hospitals after the diagnosis and the initial treatment is started. Guidelines recommend that patients with PC in stable phase can be monitored, controlled and treated in general practice. The main obstacles for transition of PC to the general practice include lack of national consensus on treatment and uncertainty among the patients whether the general practitioner can handle the follow-up. We want to describe a shared care model for patients with stable prostate cancer (PC) and intention to apply this model for control, care and treatment of PC in general practice in the County.
Materials and Methods: The strategy for shared care model was developed in collaboration with health professionals in the steering committee, which consisted of general practitioners, urologists and nurses from all urological departments in one county covering 1.2 mill people and people from the Department of General Medicine and patients'. An action plan included (1) the development of a shared care model for follow-up and treatment, (2) implementation of shared care model, by means of cooperation between the parties involved, (3) evaluation of the impact, change processes and contextual factors to transfer experience and model for other areas and (4) ensure specific referrals back to the department if necessary.
Results: The study started on 1 September 2013 and ending 30 March 2014. A total of 1079 patients with PC were enrolled in the study. There were 459 (43%) with disseminated disease, 388 (36%) who had curative therapy without relapse and 43 (4%) with recurrence, and 65 (6%) of watchful waiting and 102 (9%) with active surveillance. A total of 246 (23%) patients were completed to the GP, 833 (77%) could not be completed of which 22 patients wanted to continue in the outpatient clinic. The main reason that a patient could not be completed was unstable PSA 193 (27%), surgery 138 (19%) or radiation therapy 157 (22%). There was also socio-economic effect with this model e.g. cheaper for the society the patients were controlled by the GP, better for the patient to be followed by the same doctor.
Conclusions: The project has focused on factors that are essential for the successful transfer of responsibility for long-term follow-up in patients with prostate cancer with high professional quality and high patient satisfaction. The model had great socio-economic impact and can be applied to other urological disease areas.

Moderated Poster Session 21
Stones: Various Topics
Wednesday, October 15
1300-1430

MP-21.01

Genome-Wide Association Study Identifies Polymorphisms at Three Novel Loci as Urolithiasis Risk Factors by Using Single-Nucleotide Polymorphism Analysis

Yasui T, Usami M, Okada A, Hirose Y, Ito Y, Fujii Y, Ando R, Itoh Y, Tozawa K, Kohri K
Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan

Introduction and Objectives: Identifying genetic predisposition to urolithiasis helps in the prophylaxis of the disease. To identify the genetic factors associated with urolithiasis, we conducted a 3-stage genome-wide association study (GWAS). To identify the risk factors for urolithiasis, a case-control study was conducted using single nucleotide polymorphism (SNP) analysis.
Materials and Methods: A 3-stage GWAS was conducted with 5,892 urolithiasis patients and 17,809 controls; all participants were of Japanese origin. We investigated the association of novel loci with urolithiasis through case-control association analysis of 601 cases and 201 control subjects from an independent Japanese sample set. Furthermore, the risk for urolithiasis was calculated from the total number of significant risk-allele associations by SNP analysis.
Results: Three novel loci for urolithiasis were identified in the GWAS: *RGS14-SLC34A1-PFN3-F12* on 5q35.3, *INMT-FAM188B-AQP1* on 7p14.3, and *DGKH* on 13q14.1. In the case-control association analysis, 7 SNPs were identified: rs12654812 and rs11746443 from 5q35.3 (*RGS14-SLC34A1-PFN3-F12*); rs12669187 and rs1000597 from 7p14.3 (*INMT-FAM188B-AQP1*); and rs7981733, rs1170155 and rs4142110 from 13q14.1 (*DGKH)*. The SNPs rs12654812 at 5q35.3, rs12669187 at 7p14.3, and rs7981733 at 13p14.1 were significantly associated with urolithiasis, after applying Bonferroni correction ($P = 3.12 \times 10^{-3}$, odds ratio [OR] = 1.43; $P = 6.40 \times 10^{-3}$, OR = 1.57 and $P = 5.00 \times 10^{-3}$, OR = 1.41, respectively). In addition, meta-analysis of the current study and the GWAS exhibited significant associations, with p-values of 1.42×10^{-13}, 1.25×10^{-15} and 5.81×10^{-10}. These three SNPs showed a cumulative effect: the risk of developing urolithiasis in individuals with ≥3 alleles associated with urolithiasis was 5.9-fold that in individuals with a single allele associated with the disease (35% control subjects). In addition, ORs were higher for patients with recurrent urolithiasis (OR = 6.4) than for those diagnose with the disease for the first time (OR = 5.8).
Conclusion: The SLC34A1 gene on 5q35.1 encodes NPT2, a member of the type II sodium-phosphate co-transporter family, and the AQP1 gene on 7p14.3 encodes aquaporin-1, a member of the major intrinsic protein family that is involved in regulation of water flow. Both of these proteins are highly expressed in kidneys. Three novel susceptibility loci at 5q35.5, 7p14.33, and 13q14 were identified to be associated with urolithiasis risk.

MP-21.02

Vitamin D and Bone Mineral Density amongst Scottish Stones Formers

Chapman R, Kata G
Ninewells Hospital, Dundee, UK

Introduction and Objectives: Along side other northern countries, Scotland faces long seasons of low levels of sunshine. Consequently, serum levels of vitamin D have been shown to be significantly lower than their more southerly European counterparts. Levels of vitamin D in patients who suffer from recurrent urolithiasis has not previously been looked at in the Scottish population. Inherently mineral loosing, these patients may be at greater risk of developing bony complications. This would be exacerbated by low serum vitamin D levels. The aim of this study was assess if there was a difference between vitamin D levels in recurrent stone formers as compared to reference data and to comment on the incidence of low bone mineral density within this group.
Materials and Methods: From December 2011 to December 2013, all high risk patients in Ninewells Hospital, Dundee, Scotland identified with demonstrable biochemical, endocrine or genetic risk factors were referred to the joint Urology/Renal Medicine Metabolic Stone Team for extended screening and medical treatment. This included serum vitamin D levels for all and bone densometry scanning where indicated. The results were collected and compared to regional reference data.
Results: Forty eight patient stone formers with demonstrable biochemical, endocrine or genetic risk factors were identified and referred. Geometric mean group Vitamin D levels in this group was 34.1 (29-40 95% CI) nmol/l. Population mean is 50 nmol/l in Scotland (60 nmol/l in England). Within this group, 26 patients had DEXA scanning (mean age 46) – 14 (54%) were osteopenic or ostoporotic and 4 (15%) were osteopororic.
Conclusion: Metabolic stone screening continues to identify patients with important biochemical, genetic and endocrine conditions. Recurrent stone formers – particularly Scottish stone formers, appear to be at a high risk of osteopenia and osteoporosis. Future work regarding the efficacy and safety of Vitamin D replacement in this population needs to be evaluated.

MP-21.03

Metabolic Evaluation of High Risk Stone Formers in a District General Hospital: What Difference Does It Make?

Marri R, Housami F, Holliday M, McIlhenny C
Forth Valley Royal Hospital, Larbert, UK

Introduction and Objectives: The European Association of Urology Guidelines recommends metabolic evaluation (ME) for upper urinary tract calculi (UUTC) in all high risk stone formers. However ME is not regularly performed for these patients in many units. The aim of this study is to evaluate the prevalence of metabolic abnormalities in these patients and how this affects patient management.
Materials and Methods: All patients with high risk of recurrent UUTC (first stone at less than thirty years of age, two or more stones in less than five years duration or first stone with other risk factors like family history in patients more than thirty years old) seen in Forth Valley Royal hospital had ME. Stone analysis was done and ME was individually tailored as per stone composition. Data was collected regarding the patient risk factors, parameters tested during ME, its effect on patient management.
Results: Between September 2010 and August 2013, 39 patients at high risk of recurrent UUTC had ME. Stone composition in these patients was calcium oxalate (7), calcium phosphate (3), calcium oxalate and phosphate (5), urate (7) and unknown in rest. Three patients had low twenty four hour urine volumes. Metabolic abnormalities were identified in 19 patients (49%). Hypercalciuria, hyperuricosuria and hyperoxaluria were noted in 13, 5 and 1 patient respectively. Of the 13 patients with hypercalciuria, 8 were started on diuretics. Two patients failed to attend their subsequent appointments. One was referred to endocrinologists and another had parathyroid adenoma excised. Another patient with mild hypercalciuria and raised urine sodium was advised to reduce his salt intake. There was no significant change in treatment plan for the patient's with hyperuricosuria and hyperoxaluria. One patient started on diuretics for hypercalciuria had recurrent stones.
Conclusion: Metabolic abnormalities were identified in 49% of patients in this study. Identifying the underlying cause in these patients helps counsel them better regarding their risk of recurrent stones and discuss means for prevention of further recurrent UUTC. However longer duration follow-up is required to accurately assess stone recurrence in these patients.

MP-21.04

HIV Patients and Stones: What Type Do They Form?

Arumainayagam N[1], Ellis D[1], Shamsuddin A[1], Goldmeier D[2], DasGupta R[1]

[1]Charing Cross Hospital, Imperial Healthcare NHS Trust, London, UK; [2]St Mary's Hospital, Imperial Healthcare NHS Trust, London, UK

Introduction and Objectives: With the advent of newer antiretroviral medications, HIV is now viewed as a chronic disease rather than a life threatening illness. These patients have a lifetime risk of forming renal tract calculi secondary to antiretroviral treatment, classically due to Indinavir. We reviewed our experience with such patients over a 5 year period.
Materials and Methods: Over a five year period from 2008 to 2013 a total of 7 patients with a known diagnosis of HIV underwent endoscopic intervention in our unit for renal calculi. We reviewed the stone analysis in each case along with their antiretroviral medication.
Results: Median age was 46 years (range 39 – 68), with five male and two female patients in this group of stone formers. The results are outlined in Table 1. No stone analysis was available for one patient, and the other patient's radiolucent stone awaits treatment by PCNL. The pure atanazavir stones were not visible on either plain film; and one of these did not show on CT either despite a heavy stone burden confirmed by ureterorenoscopy.
Conclusion: HIV patients taking antiretroviral medication such as atanazavir are at higher risk of forming pure radiolucent stones not visible on CT imaging, which can provide diagnostic challenges in such patients. The incidence of such stones are likely to increase due to the advances in management of HIV. It is important to establish whether there are differences between HIV treatments with regards to urolithiasis, and to develop guidelines for imaging and follow-up.

MP-21.04, Table 1.

Type of stone	Number
Pure Atanazavir	2
Mixed Atanazivir / Calcium phosphate / calcium oxalate	1
Mixed Calcium Oxalate / Uric Acid	1
Calcium oxalate / calcium phosphate	1

MP-21.05
Is Brand's Test Useful as a Screening in Adults with Renal Colic?
Patruno G[1], Del Fabbro D[1], Wadhwa K[2], Gaziev G[1], Topazio L[1], Germani S[1], Vespasiani G[1], Miano R[1]
[1]Dept. of Urology, University of Rome Tor Vergata, Rome, Italy; [2]Dept. Of Urology, Addenbrooke's Hospital, Cambridge, UK

Introduction and Objectives: The Cyanide-Nitroprusside test (Brand's test) is recommended in pediatric recurrent renal stone formers or in adults, when the analysis of the stone reveals the presence of cystine. Patients affected by cystinuria suffer recurrence thus reducing their quality of life. We aimed to evaluate the incidence of cystinuria in the adult population referred by emergency department (ED) after an episode of renal colic.
Materials and Methods: After ERB approval, 300 consecutive adult patients presenting to clinic after ED admission were recruited. Urine was tested by Brand's test for cystinuria and repeated if equivocal. Exclusion criteria were: permanent catheters, aminoaciduria, Fanconi's syndrome or drugs (e.g. N-acetylcysteine or ampicillin).
Results: Of 300 patients, 193 were men and 107 were women. The mean age was 42.5 y (range 18-79 y). The percentage of patients with history of renal stones in each quartile is shown in Table 1. Three patients had a positive Brand test [2/193 men (1.03%) and 1/107 women (0.93%)] all of whom had a history of recurrent stone formation. When analysing the incidence of cystinuria in the 1st quartile (18-32 y, youngest group) with a history of calculi (2 cystinuria cases/36 pts) we found that this group had a statistically significant higher incidence when compared to the other subjects (5.5% vs. 0.4%; p=0.04 Fisher's exact test).
Conclusion: Given the significantly higher incidence of cystinuria (p=0.04) in the 18-32 year old group with a history of colic, and the clinical and social problems related to recurrent stone formation, we suggest the use of Brand's test as screening tool in this population.

MP-21.06
The Radiological Investigation of Suspected Ureteric Colic in a District General Hospital: Are the Right Patients Getting the Right Scans at the Right Time?
Mains E[1], Dempster N[1], McLaughlin G[2], Clark R[1], Meddings R[1]
[1]Dept. of Urology, University Hospital, Ayr, UK; [2]Dept. of Radiology, University Hospital, Ayr, UK

Introduction and Objectives: Non-contrast computed tomography (CT-KUB) is recommended by the British Association of Urological Surgeons (BAUS) and the Royal College of Radiologists (RCR) as the first line investigation for suspected ureteric colic, allowing a rapid, definitive diagnosis. The primary aim was complete an audit cycle assessing the current practice for the investigation of suspected ureteric colic in a District General Hospital against the national BAUS/RCR standards. The secondary aim was to determine the diagnostic yield of imaging in younger female patients and assess whether a change in imaging protocol could maintain diagnostic sensitivity whilst reducing radiation exposure in this group.
Materials and Methods: An initial audit of all patients presenting with suspected ureteric colic within a 6-month period (n=130) was completed. After analysis and presentation of the results, interventions in the form of a new imaging algorithm for younger patients and new guidance for the trainee staff, were introduced. A re-audit was completed over a two-month period (n=46) and the data was analysed in an identical manner.
Results: CT-KUB was used to investigate suspected ureteric colic in 87.7% of patients (target = 100%). Among all, 64.9% underwent CT-KUB within 24 hours of admission (target = 100%). Mean time to CT-KUB was 24.3 hours. Calculi were detected in 54.4% (target 44-62%). A significant difference was noted in the proportion of young male and female patients with calculi confirmed on imaging (p=0.0028). On re-audit, CT-KUB was used as the initial investigation in 95.8% of cases. Significant reductions in the time to scan were noted, with a calculi detection rate within the target range. However, calculi detection rates were only 30% in young female patients.
Conclusion: This completed audit cycle illustrates some of the challenges in achieving national standards within a District General Hospital, as well as some of the strategies which can improve adherence. We have demonstrated an improvement in the use of the recommended first-line investigation via targeted interventions, with a diagnostic yield consistently within the target range. However, the use of CT-KUB as first line investigation in young female patients continues to be an area requiring further work to ensure the appropriate use of CT-KUB in these patients.

MP-21.05, Table 1.

Quartile	N° of patients	Patients with history of colic	Percentage
1 (18-32)	76	36	47.4%
2 (33-47)	122	64	52.5%
3 (48-62)	73	38	52.1%
4 (63-79)	29	16	55.2%
Total	300	154	51.3%

MP-21.07
Positive Rate of Ureteric Colic Referrals from the Emergency Department and Management
Chew S, Forster J, Stewart A, Addla S
Bradford Royal Infirmary, Bradford, UK

Introduction and Objectives: To determine the positive rate of ureteric colic referrals and to compare our diagnostic practice and management with the current guidelines.
Materials and Methods: A retrospective review was performed on all patients presenting to the Emergency Department (ED) and referred to Urology with suspected ureteric colic between February 2013 and April 2013. Information on imaging times, dates and reports were gathered from the Picture Archiving and Communication System (PACS) and patient management information was gathered from the Patient Pathway Manager (PPM) system.
Results: A total of 72 patients were referred to Urology from the ED with an average length of hospital stay of 44.4 hours; 45.8% were males and 54.2% were females. A total of 49 patients had a CTKUB and 32 patients had an AXR prior to a CTKUB which was requested by the ED. The average time taken to perform the CTKUB was 45 hours. Positive rate of urolithiasis was 38.9%, of which 60.1% of patients were male and 20.5% were female. Ureteric colic contributed 67.9% and the rest were renal calculi. Obstructive signs were found in 46.5% of the scans and 17.9% underwent either acute endoscopy or ESWL. Conservative treatment was successful in 28.6% of our patients, the remaining had intervention as an outpatient. Overall, 71.4% of our patients were successfully cleared of calculi. The remaining 18.1% patients who did not have urolithiasis had a different urological problem, 19.4% did not have a definitive diagnosis, 8.3% had musculoskeletal and general surgical diagnoses each and the remaining 6.9% were gynaecological.
Conclusion: Ureteric colic is a common presentation to the ED but the positive rate for ureteric calculi remains low. The female population is at higher risk of unnecessary radiation exposure and USS could be considered before CTKUB. As CTKUB is the gold standard for diagnosis of ureteric colic, AXRs should be avoided. The duration taken for CTKUB to be performed is longer than the BAUS guidelines of 24 hours, suggesting a pathway to perform CTKUB from the ED will be beneficial.

MP-21.08
What Is the Role of Quantitative Measurement of Penicillamine-Cysteine Complexes in Cystinuria Patients on Penicillamine?
Patel S, Fairbanks L, Bultitude M, Carling R, Thomas K
Guy's and St Thomas' NHS Foundation Trust, London, UK

Introduction and Objectives: With no clear guidance on Penicillamine dose administration and titration, utilisation of this drug to prevent stone formation risk in cystinurics remains a challenge. We assess the role of quantitative measurement of penicillamine-cysteine complexes (p-cc), correlations between p-cc measurements, Penicillamine dose, stone burden and urine cystine concentrations; and determine the potential role in guiding treatment.
Materials and Methods: Records were analysed using our clinic database. Multiple urine samples of patients on Penicillamine were measured using laboratory calculations, providing nominal p-cc concentrations. We correlated these with urinary cystine, ornithine, lysine, arginine concentrations and pH levels. Ratios of the penicillamine-cysteine complex to the total cystine level (p-cc:c) were calculated. Total daily doses of Penicillamine were noted and patients' stone status - "none"=no stones, "stable"=no new stones or "new" stones categorised.
Results: We identified 9 patients on Penicillamine; 5 males; 4 females. Age range was 29-65 years. Total daily doses ranged from 250-2000mg. Patients who had formed new stones had the lowest p-cc:c (median=0), compared to "none" (median=0.121) and "stable" groups (median=0.114). Relative p-cc levels for these respective groups are 85.5, 129 and 125.5umol/L. An inversely proportional correlation is seen between cystine levels and p-cc. Lowest cystine levels were amongst patients on a total daily dose of 1000mg, who had the highest p-cc:c. Median p-cc for patients on varying doses are 2000mg=183; 1500mg=121; 1000mg=125; 250mg=0umol/L. Relative p-cc:c ratios for these groups: 0.063, 0.093, 0.148 and 0. Patients who formed crystals had a lower median p-cc:c ratio of 0, compared to those who did not (median=0.148). Patients with SLC7A9 mutation show a better response to Penicillamine compared to SLC3A1 mutation (median p-cc:c ratios 0.145 and 0.061).
Conclusion: Patients on lowest dosage had the lowest p-cc levels and the highest urine cystine concentrations. Low p-cc:c ratios identifies a higher risk of new stone formation. Highest p-cc:c ratios are shown in patients with "none" or "stable" stones, no crystal formation, SLC7A9 mutation and those on 1000-1500mg daily dosage. Monitoring on Penicillamine remains challenging, however our results may provide a method for predicting response to treatment. We suggest p-cc:c ratios >0.10 and p-cc levels >125umol/L for favourable outcomes on Penicillamine.

MP-21.09
The Predictability of Stone Type Based on Metabolic Stone Screen Results
MacLeod R, Biyani C, Symons S
Pinderfields General Hospital, Wakefield, UK

Introduction and Objectives: Robertson (2003) described a risk factor model of stone formation, calculating a risk of future stone formation (PSF) in patients undergoing metabolic stone screening (MSS). Algorithms are available for use, calculating the PSF for certain stones types; uric acid, mixed calcium oxalate and uric acid, pure calcium oxalate, mixed calcium oxalate and calcium phosphate and pure calcium phosphate. There is no comparative study in the literature demonstrating the predictability of stone type based on PSF. The objective of this retrospective study was to investigate the ability of the risk factor model to predict the type of stone formed.
Materials and Methods: Two parallel datasets from one hospital trust representing patients undergoing MSS and stone samples sent for quantitative analysis were cross referenced according to patient number. A total of 122 patients were identified for whom at least one stone had been submitted, resulting in a total of 181 stones for correlation MSS. For those patients with more than one MSS recorded the most recent MSS was compared with stone analysis. Struvite and cysteine containing stones were excluded.
Results: Eighty six patients were male and 36 female (1: 2.4). The age range was 12-72 (mean 45). The time between MSS and stone analysis ranged from 0 – 140 months. MSS results, when applied according to the risk factor model, correlated with stone content in 43% of cases. The ability of the model to predict different types of stone varied substantially. None of 12 UA/CaOx stones were accurately predicted by the MSS result; however 92% of calcium phosphate stones correlated with a PSF (CaP) of ≥0.5 on MSS. There was no clear relationship between time between MSS and SA and correlation.
Conclusion: The risk factor model for stone formation predicts stone type in some patients. Calcium phosphate and mixed calcium containing stones were better predicted than calcium oxalate or uric acid containing stones. There was no clear effect of timing of MSS on correlation with stone analysis results. This has implications in clinical practice in terms of treatment choice and the approach to patient counselling on the basis of MSS results.

MP-21.10
Stone Radiodensity Measured by Hounsfield Unit as a Predicting Factor for Success of Shock Wave Lithotripsy in Fragmentation of Renal Calculi
Mahmoud M, Elsayed M, Elgioushy F,

Elsotohi I, Farid M, Ali M
Alazhar University Hospitals, Cairo, Egypt

Introduction and Objectives: To evaluate the usefulness of measuring urinary calculi attenuation values by non-contrast computed tomography (NCCT) for predicting the outcome of extracorporeal shockwave lithotripsy (ESWL) in the treatment of renal stones.
Materials and Methods: We included 60 patients with solitary renal stones up to 25 mm in this prospective study. Calculus density value was measured in Hounsfield units on NCCT. Patients were subsequently treated with ESWL using Dornier SII lithotripter with a maximum of three sessions. Patients were followed two weeks after each session of ESWL by plain X-ray for radio opaque stone or ultrasound for radiolucent stone to assess fragmentation. A "successful outcome" is defined as complete stone clearance or stone fragments < 4 mm. Absence of stone disintegration or presence of surgical fragment >4 mm after three sessions was considered failure of ESWL treatment.
Results: Patients were grouped according to calculus Hounsfield units (HU) as: Group (A) less than 500 HU, Group (B)—500 to 1,000 HU and Group (C)—greater than 1,000 HU. The rate of stone fragmentation and clearance was 100% (18 of 18 cases) in Group A, 95.6% (22 of 23) in Group B and 52.6% (10 of 19) in Group C. The success rate for stones with an attenuation value of greater than 1,000 HU was significantly lower than that for stones with a value of less than 1,000 HU (10 of 19 versus 40 of 41 cases, p <0.001). Patients in Group C required a greater median number of shock waves for stone fragmentation than those in groups A and B (9689, 3265, and 6331, respectively). The mean attenuation value (HU) and number of shock waves required for stone fragmentation correlated significantly (p <0.001).
Conclusion: H.U. of renal stones ≤ 25 mm detected by NCCT was the most predictive factor in the outcome of ESWL irrespective to location of stone or size. Stones < 1000 HU were treated effectively by ESWL while stones of 1000 H.U. or more did not respond effectively to ESWL. No correlation was found between radio density by plain X- ray and fragility and composition of the stones. Also there were no correlations between radio-opacity on plain X-ray and radiodensity on NCCT.

MP-21.11
Does Thiazide Prophylaxis for Calcium-Based Stones Increase the Risk of New-Onset Diabetes Mellitus?
Knoedler J, Krambeck A, Singh P, Lieske J, Li X, Bergstralh E, Rule A
Mayo Clinic, Rochester, USA

Introduction and Objectives: Previous studies involving thiazides and thiazide-type diuretics (herein referred to as thiazides) used to treat hypertension (HTN) have found an increased risk of new-onset diabetes mellitus. However, while thiazides used for the prevention of calcium based urolithiasis have been found to be associated with impaired fasting glucose, their association with diabetes mellitus (DM) remains to be defined. Herein we evaluate the association of thiazides used for calcium stone prophylaxis with new onset DM among incident stone formers.
Materials and Methods: We retrospectively identified 2,350 incident stone formers with calcium-based stones in Olmsted County, Minnesota, from 1984-2011 using the Rochester Epidemiology Project. Patients with a diagnosis of DM or thiazide usage predating their stone event were excluded. Kaplan-Meier analysis predicted survival free from DM, while multivariate models compared the association of clinical variables with the development of DM.
Results: A total of 329 patients (14%) were treated with thiazides following incident stone, while 2,021 (86%) did not receive thiazides. Median age for those receiving thiazides was 46.5 years (IQR 37.0-57.2) compared to 38.4 years (IQR 29.7-49.8) for those not receiving thiazides (p<0.0001). Median follow-up was 10 years (range 0.1-28 years). Incidence of new-onset DM 10 years after first stone event was 9.2% among the thiazide group, compared to 4.2% among the non-thiazide group (p<0.001). On multivariate analysis, use of thiazides (HR 1.73; p=0.007), increasing age (HR 1.03; p=0.002), and BMI at first stone event (HR 1.13; p<0.001) were associated with an increased risk of new-onset DM. The cohort of patients receiving thiazides after incident stone was then divided into those who received thiazides for HTN (n=248) and those who received thiazides for stone prophylaxis alone (n=81). On multivariate analysis thiazide administration for stone disease was not associated with new onset DM (HR 0.92; p=0.87).
Conclusions: While thiazide usage among stone formers with HTN is associated with an increased risk of new-onset DM, thiazides used for stone prophylaxis alone did not increase the risk of new-onset DM. To our knowledge, this study is the first to evaluate the role of thiazides in the development of DM among a population of stone formers.

MP-21.12
Tamsulosin versus Nifedipin in Medical Expulsive Therapy for Distal Ureteral Stone and Predictive Value of Hounsfield Unit in Stone Expulsion
Balci M, Tuncel A, Aslan Y, Guzel O, Aydın O
Ankara Numune Training and Research Hospital, Ankara, Turkey

Introduction and Objectives: We evaluated the efficacy of tamsulosin and nifedipine in medical expulsive therapy (MET) in patients with distal ureteral stone. Also, we tried to determine the predictive value of Hounsfield Unit (HU) of the stone in success of MET.
Materials and Methods: A total of 75 patients with 5 to 10 mm in diameter distal ureteral stone were randomly divided into 3 groups. Group 1 (n=25) received tamsulosin (Flomax®, Boehringer İngelheim) orally 0.4 mg/d; Group 2 (n=25) received nifedipine (Adalat Crono®, Bayer) orally 10 mg/d and Group 3 (n=25) received only symptomatic therapy with diclofenac sodium (Voltaren®, Novartis) orally 50 mg when they needed. At the beginning of the treatments, HU of the stone was also measured with using non-contrast computerized tomography in all the patients. The treatments' results were evaluated at 4th week.
Results: The mean age of the patients was 36.8 (range; 16 to 68) years. Stone expulsion was observed in 19 (76%) patients in Group 1, (64%) 16 in Group 2 and 9 (36%) in Group 3. Stone expulsion rate significantly difference in groups 1 and 2 with respect to Group 3 ($p_{group\ 1-3}$=0.004, $p_{group\ 2-3}$=0.048, $p_{group\ 1-2}$=0.355). The mean stone expulsion time was 9, 9.1 and 10.3 days in Group 1, 2 and 3, respectively ($p_{group\ 1-3}$<0.001, $p_{group\ 2-3}$<0.001, $p_{group\ 1-2}$=0.619). The mean diclofenac sodium dosage per patient in groups 1 to 3 was 544, 602 and 1408 mg, respectively ($p_{group\ 1-3}$<0.001, $p_{group\ 2-3}$<0.001, $p_{group\ 1-2}$=0.977). Two patients in Group 1 had dizziness, 1 patient in Group 2 had dyspepsia while another one in the same group had diarrhea, and 1 patient in Group 3 had dyspepsia. None of the patients broke up from the study because of adverse effects. The mean HU of the stone in patients with and without successfully MET was 363 and 389, respectively (p=0.462).
Conclusion: Administration of tamsulosin and nifedipin in MET was determined to be equally safe and effective treatment options for distal ureteral stone. HU seems not to have a predictive value for stone expulsion rate in MET.

MP-21.13
Dissolution Therapy for Radiolucent Kidney Stones: An Old Treatment Revisited
Alsinnawi M, Rix G, Maan Z
Colchester Hospital, Colchester, UK

Introduction and Objectives: Uric acid calculi are amenable to medical therapy. Dissolution therapy for radiolucent kidney stones is based on urine alkalisation and hydration. Different regimes to alkalinise the urine were proposed including sodium bicarbonate (NaHCo3) and potassium citrate. Dissolution therapy is a non invasive modality of treatment especially for patients with multiple comorbidities. We present our experience in medical dissolution therapy for radiolucent calculi.
Materials and Methods: Retrospective analysis of our experience. Complete or partial resolution results were noted as well as treatment

failures. Data on patient demographics in addition to stone size, location and serum uric acid levels were collected. NaHCo3 was started at doses of 1 gm TDS oral then increased to a maximum of 3 gm TDS daily titrated to urinary pH. Patients were instructed to monitor their urinary pH daily to achieve at least pH of 7 (tending towards 8) and alter the dose of NaHco3 accordingly.
Results: Duration of therapy was two to three months. The majority of patients had renal ultrasound at the end of treatment period. We identified 27 patients who were diagnosed with radiolucent stones. Four received no sodium bicarbonate treatment and were treated with other modalities. Two are still awaiting results. Out of the 21 patients who completed the treatment regime, complete dissolution was noted in 33%, partial dissolution in 14% and treatment failed in 38%. Fifteen per cent were lost to follow-up or were non-compliant to therapy.
Conclusion: We recommend a trial of sodium bicarbonate dissolution therapy for treatment of radiolucent kidney stones which are not obvious on the initial KUB xray, in patients with hyperuricosuria or multiple comorbidities. Follow-up with renal u/s to check for dissolution is sufficient. Patients with partial response or failure will then be candidates for other treatment modalities like ESWL, flexible ureteroscopy or PCNL.

MP-21.14
Incident and Recurrent Stone Formers Undergoing Percutaneous Nephrolithotomy: Clinical and Anatomic Differences
Knoedler J, de Cogain M, Lieske J, Vrtiska T, Li X, Bergstralh E, Krambeck A
Mayo Clinic, Rochester, USA

Introduction and Objectives: While interstitial Randall's plaque and duct of Bellini plugging have been implicated in urolithiasis formation, little is known how features change with recurrent stone events. Herein we compare the clinical characteristics and papillary architecture between incident and recurrent stone formers undergoing percutaneous nephrolithotomy (PCNL).
Materials and Methods: We prospectively enrolled a random cohort undergoing percutaneous nephrolithotomy. After stone removal, each calyx was endoscopically mapped with video imaging and the percent surface area involved by plaque and plug were digitally measured using image analysis software. Papillary biopsy of a representative papilla was performed. Stone composition was determined by micro-computed tomography and infrared analysis. All patients completed 24 hour urine studies and basic serum laboratory exams.
Results: We identified 178 patients who underwent PCNL including 52 (29.2%) incident stone formers and 126 (70.8%) recurrent stone formers. There were no differences with regards to diabetes, previous bowel surgery, renal tubular acidosis, or primary hyperoxaluria. Compared to recurrent stone formers, incident stone formers were more likely to be female (78.8% vs. 51.6%; p=0.0008), and have higher 24-hour urinary citrate (median 695 mg/day vs. 482 mg/day; p=0.05). Mean papillary surface area involved by plaque (mean%involved±SD) was 1.8±2.5 for incident stone formers compared to 2.7±3.4 for recurrent stone formers (p=0.04). Meanwhile, the mean area involved by plug was 0.2±0.6 for incident stone formers vs. 0.9±2.7 for recurrent (p=0.004). We then restricted the cohort to idiopathic calcium oxalate (CaOx) stones (n=112), including 33 (29.5%) incident stone formers and 79 (70.5%) recurrent stone formers. Among incident CaOx, mean plaque was 1.9±2.7 vs. 3.2±3.9 for recurrent stone formers (p=0.04). The difference in plug between incident and recurrent stone formers was no longer significant (0.3±0.7 vs. 0.6±1.3; p=0.06).
Conclusions: Among a prospective study of patients undergoing PCNL, we found significantly increased papillary plaque and plug among recurrent stone formers as compared to incident stone formers. However, when restricted to CaOx stones, only the percentage of plaque remained significantly higher among recurrent stone formers. Our findings support the theory that both plaque and plug contribute to recurrent stone formation, and that plaque specifically is associated with CaOx stone formation.

MP-21.16
Assessment of Complications and Analysis of the Risk Factors for Percutaneous Nephrolithotomy Using the Clavien-Dindo Grading System
Yang J**, Zou X**, Zhang G, Yuan Y, Xiao R
First Affiliated Hospital of Gannan Medical University, Ganzhou, China

Introduction and Objectives: To evaluate the complications in percutaneous nephrolithotomy (PCNL) using Clavien-Dindo Grading System (CDGS) and to analyze the risk factors for complications in PCNL.
Materials and Methods: From January 2003 to April 2012, 2254 cases with calculus of upper urinary tract underwent PCNL in our center. The complications in PCNL were evaluated by the CDGS, and the risk factors for complications in PCNL were analyzed using the multiple logistic regression analysis.
Results: Among 591 (26.22%) cases with complications evaluated using the CDGS, grades I, II, IIIa, IIIb, Iva, IVb and V were 8.07% (182), 14.77% (333), 1.86% (42), 0.40% (9), 0.75% (17), 0.22% (5) and 0.13% (3), respectively. Hemorrhage was the most common complication, and followed by post-operative fever. The multiple logistic regression analysis showed that the relevant risk factors of grade II and higher complications mainly included the body mass index (BMI), pre-operative hemoglobin levels, diabetes mellitus, degrees of renal insufficiency and hydronephrosis, staghorn calculi, calculi surface area, intra-operative amounts of channels, staging operation, operation time and styles of lithotripsy. There were 454 (20.14%) cases with staghorn calculi in a total of 2254 cases. The rank sum test showed that the complications incidence of PCNL for the staghorn calculi was obviously higher than that of the others (Z=-4.23, P=0.000).
Conclusion: The CDGS may objectively evaluate the complications of PCNL. BMI, Pre-operative hemoglobin levels, diabetes mellitus, degrees of renal insufficiency and hydronephrosis, staghorn calculi, calculi surface area, intra-operative amounts of channels, staging operation, operation time and styles of lithotripsy are the risk factors for grade II and higher complications of PCNL. The complications incidence of PCNL for the staghorn calculi is obviously higher than that of the others.

MP-21.17
Fatal Venous Air Embolism as a Complication of Percutaneous Nephrolithotomy
Van Heerden H, Heyns C, **Van der Merwe A,** Zarrabi A
Dept. of Urology, Stellenboch University and Tygerberg Hospital, Tygerberg, South Africa

Introduction and Objectives: Fatal air embolism during percutaneous nephrolithotomy (PCNL) was first reported in 1985 (Hobin, J Forensic Sciences 30(4): 1284-86). This complication was not mentioned in Campbell's Urology 8th or 9th editions (2002, 2007). Campbell-Walsh Urology 10th edition (2012) mentions 6 cases (one fatal). The trigger for the present study was a medico-legal inquest into a case of fatal air embolism during PCNL. The aim of this study was to assess the risk of this complication and awareness among urologists.
Materials and Methods: A review of the English literature was performed using electronic search engines. An e-mail survey concerning air embolism as a complication of PCNL was sent to members our national urological association. Inspection of the PCNL equipment in various hospitals was performed to assess the safety aspects.
Results: The literature search revealed 6 cases of non-fatal venous air embolism during retrograde pneumopyelography to visualize a radiolucent stone, and 3 cases (2 fatal) not associated with pneumopyelography. One fatal case resulted from reversed connection of the rotary suction pump tubes, forcing air into the collecting system (Hobin 1985) but the other had no identifiable cause. (Turillazzi, Urology 2009; 73(3): 681). The survey was completed

by 70 urologists, 57% had been in practice >10 years, 64% performed 1-10 PCNLs per year, 28% were unaware of air embolism as a complication of PCNL, 40% knew of another urologist who had a patient with air embolism during PCNL, 51% thought it may result from reverse connection of the suction pump tubing. Inspection of the PCNL equipment currently in use revealed that the inlet and outlet connections of the rotary suction pump are identical, so that inadvertent reverse connection can easily occur.

Conclusion: Air embolism is a rare but potentially fatal complication of PCNL. There is limited awareness among urologists of this complication. The causes are pneumopyelography using air, or inadvertent reverse connection of the rotary suction pump. This can be avoided by using unidirectional wall suction during PCNL, but greater awareness among urologists is required.

Moderated Poster Session 22
Kidney & Ureteral Cancer: Various Topics
Wednesday, October 15
1300-1430

MP-22.01

Aberrant Promoter Methylation of the 16q23.1 Tumor Suppressor Gene ADAMTS18 in Clear Cell Renal Cell Carcinoma

Xu B, Zhang L, Zhang Q, Jin J
Peking University First Hospital, Beijing, China

Introduction and Objectives: To identify tumor suppressor genes (TSGs) silenced by aberrant promoter methylation and discover new epigenetic biomarkers for early cancer detection. *ADAMTS18,* located at 16q23.1 region, has been reported as a critical TSG for multiple primary tumors, but not in renal cell carcinoma (RCC) yet. We explore its epigenetic alteration in RCC and analyze the possible clinicopathological association.
Materials and Methods: We examined *ADAMTS18* gene expression and methylation by semiquantitative reverse transcriptase PCR (RT-PCR) and methylation specific polymerase chain reaction (MSP) in 5 RCC cell lines before and after treatment with 5-aza-2'-deoxycytidine (5-Aza) alone or and trichostain A (TSA) . MSP was further applied in 117 RCC primary tumors with 24 adjacent normal tissues. We also analyzed the relationship between *ADAMTS18* methylation and clinicopathological features in patients with RCC.
Results: *ADAMTS18* gene down-regulation and methylation was detected in RCC cell lines using RT-PCR and MSP. Treatment with 5-Aza alone or and TSA could reverse methylation and restore *ADAMTS18* expression. Aberrant methylation was further detected in 51 of 117 (43.6%) primary tumors and 4 of 24 (16.7%) adjacent normal tissues. However, a significant difference between both groups was observed (p=0.02). Furthermore, *ADAMTS18* gene methylation status was not significantly associated with gender, age, location, tumor diameters, AJCC TNM stage or nuclear grade in patients with RCC (p>0.05).
Conclusions: *ADAMTS18* gene is often down-regulated by aberrant promoter methylation in RCC cell lines and primary tumors, indicating its critical role as a TSG in RCC. We conclude that *ADAMTS18* gene methylation may be involved in the tumorigenesis of RCC and has a potential chance to be served as a novel biomarker for RCC.

MP-22.02

FABP7 as a Potential Marker and Target in Clear Cell Renal Cell Carcinoma

Nagao K[1,2], Shinohara N[1], Smit F[2], Owada Y[1], de Weijert M[3], Sander J[3], Kobayashi K[1], Matsumoto H[1], Matsuyama H[1], Mulders P[3], Oosterwijk E[3]
[1]Yamaguchi University, Ube, Japan; [2]Radboud University Medical Center, Nijmegen, The Netherlands; [3]University Medical Center, Nijmegen, The Netherlands

Introduction and Objectives: To identify potential targets in clear cell renal cell carcinoma (ccRCC), we performed a transcriptome analysis of ccRCC and normal kidney specimens. The transcriptome analysis revealed numerous highly overexpressed genes related to hypoxia, pH regulation and metabolisms in ccRCC. FABP7 (Fatty Acid Binding Protein 7) had the highest mean value of overexpressed mRNA in ccRCC specimens compared to normal kidney specimens. We confirmed the significance of FABP7 as a potential marker and target in ccRCC.
Materials and Methods: We performed a gene expression analysis against the total RNA extracted from 60 ccRCC and 20 normal kidney specimens on the human exon 1.0 ST array (Affimetrix). The expression profiles were analysed by unsupervised hierarchical average linkage clustering algorithm. Among the overexpressed genes, FABP7 had the highest mean difference between ccRCC and normal kidney in the profile. The expression levels were further studied by immunohistochemical analysis in 40 advanced ccRCC cases treated by cytokine and/or molecular targeted drugs. The effect of gene knockdown was studied in a cell line with overexpression of FABP7 (A498).
Results: Among the overexpressed genes, FABP7 had the highest mean expression level in mRNA, while the expression levels varied depending on the ccRCC cases. Our immunohistochemical analysis for the ccRCC specimens demonstrated significant correlation between FABP7 expression and corrected serum Ca level or distant metastasis (both p<0.05). Based on proliferation assay (MTT assay) and invasion assay (Matrigel Invasion assay), functional suppression of FABP7 significantly reduced the proliferation and invasion of A498 cells (both p<0.05).
Conclusion: FABP7 was highly overexpressed in ccRCC and was correlated with poor prognosis. Functional suppression of FABP7 downregulated the proliferation and invasion of a ccRCC cell line. FABP7 could be a prognostic marker and potential therapeutic target in ccRCC.

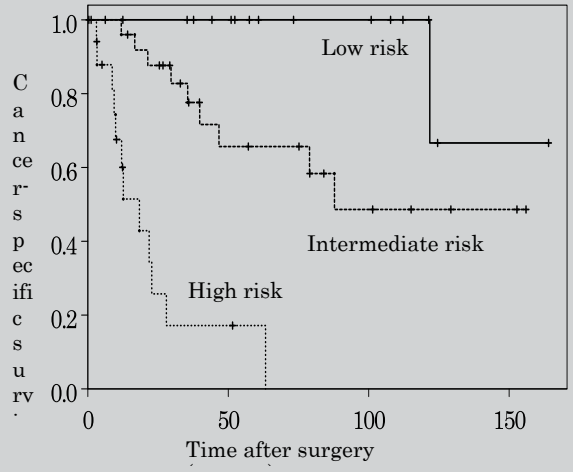
MP-22.03

GOLPH3 Is a Novel Marker of Poor Prognosis and a Potential Therapeutic Target in Human Renal Cell Carcinoma

Xue Y, Xiao G, Wei X, Huang R, Kang H, **Zou X**
First Affiliated Hospital of Gannan Medical University, Ganzhou, China

Introduction and Objectives: Golgi phosphoprotein 3 (GOLPH3) has been reported to be involved in the development of several human cancers. The present study was conducted to investigate the expression of GOLPH3 and its prognostic significance in renal cell carcinoma (RCC). Meanwhile, the function of GOLPH3 in human RCC was further investigated in cell culture models.
Materials and Methods: Expression of GOLPH3 was examined in 43 fresh RCC

MP-22.08, Figure 1.



tissues and paired adjacent normal renal tissues by real-time quantitative PCR and western blotting. Immunohistochemistry for GOLPH3 was performed on additional 218 RCC tissues. The clinical significance of GOLPH3 expression was analysed. Downregulation of GOLPH3 was performed using small-interfering RNA (siRNA) in Caki-1 and 786-O cells with high abundance of GOLPH3, and the effects of GOLPH3 silencing on cell proliferation, migration, invasion *in vitro*, and tumour growth *in vivo* were evaluated.
Results: Expression of GOLPH3 was up-regulated in the majority of the RCC clinical tissue specimens at both mRNA and protein levels. Clinicopathological analysis showed that GOLPH3 expression was significantly correlated with T stage ($P < 0.001$), lymph-node status ($P = 0.003$), distant metastasis ($P < 0.001$), tumour-node-metastasis (TNM) stage ($P < 0.001$), and Fuhman grade ($P = 0.001$). Expression of GOLPH3 was inversely correlated with both overall and recurrence-free survival of RCC patients. Multivariate analysis showed that GOLPH3 expression was an independent prognostic indicator for patient's survival. Knockdown of the GOLPH3 expression reduced cell proliferation, anchorage-independent growth, migration, invasion, and tumour growth in xenograft model mice.
Conclusion: These results suggest that GOLPH3 expression is likely to have important roles in RCC development and progression, and that GOLPH3 is a prognostic biomarker and a promising therapeutic target for RCC.

MP-22.04
Anomalous Accumulation of Heavy Metals in Renal Cell Carcinoma: A Scanning Electron Microscopy and X-ray Microanalysis
Cunha E[1], Antunes-Lopes T[2], Silva A[2], Pinto R[2], **Silva J**[2], Cruz F[2], Martins-Silva C[2]
[1]Faculdade de Medicina da Universidade do Porto, Porto, Portugal; [2]Hospital de S. João, Porto, Portugal

Introduction and Objectives: The association between heavy metals (HMs) contamination and cancer has been largely investigated. However, the role of HMs in renal carcinogenesis is far from being clearly understood. The aim of our study was to investigate the accumulation of particles of HMs in samples of renal cell carcinoma (RCC) and adjacent renal tissue (control samples) in patients submitted to radical or partial nephrectomy, using scanning electron microscopy and X-ray microanalysis (SEM-XRM).
Materials and Methods: Samples of RCC and adjacent renal parenchyma from 7 patients submitted to radical or partial nephrectomy were collected. They were fixed with glutaraldehyde and dehydrated in ethanol and critical point-dried in a Balzer's apparatus. The preparations were mounted on metal stubs and coated by carbon under vacuum and examined in a JEOL JSM-6301F SEM, a high-resolution method, coupled with XRM. SEM-XRM was used to detect and semi-quantify HMs. Local Ethics Committee approved this study and all patients signed an informed consent.
Results: SEM-XRM revealed a marked accumulation of HMs (nickel, chromium, iron, tungsten, titanium, cadmium, copper, manganese, zinc and magnesium) particles in samples of RCC, but not in the surrounding parenchyma.
Conclusion: The chemical composition of RCC and the adjacent parenchyma is different. Inversely to the normal parenchyma, there was an anomalous accumulation of HMs in RCC samples. According to these findings, HMs might be implicated in renal carcinogenesis. In addition, they also may contribute to open a new venue for future studies on the kinetics of HMs in renal oncology.

MP-22.06
Challenging the Guidelines: Is Current Cumulative Radiation Exposure in Patients Treated with Partial Nephrectomy Safe?
Nair R, Pai A, Macarthur R, Munneke G, Le Roux P, Patel H, Anderson C
St. George's Hospital, London, UK

Introduction and Objectives: There is no consensus regarding the optimal surveillance of renal cell carcinoma (RCC) treated with partial nephrectomy (PN). Currently, the European Association of Urology (EAU) surveillance guidelines following PN involve patient exposure to ionizing radiation with six-month or annual computed tomography. There is however, a paucity of data examining cumulative radiation exposure (CRE) in this population. This is important as the additional risk of secondary malignancy is 0.04% for every 10 milli-Sieverts (mSv) of radiation exposure.
Materials and Methods: A prospective single centre review of 270 patients (mean age: 59, range 31-85) who underwent open or minimally invasive PN was performed between January 2002 and January 2014. Sixty four patients were excluded with benign histology or incomplete data. Follow-up CRE was calculated in mSv according to imaging modality and matched to tumour histology and stage. RCC recurrence was defined as radiologic evidence of local tumour recurrence or development of distant metastases.
Results: CRE was 15.8, 15.0, 50.3 and 12.9 mSv/patient/year for pT1a (n=154), pT1b (n=31), pT2 (n=3) and pT3 (n=18) tumour surveillance (mean follow-up: pT1a=42 months, pT1b=50 months, pT2=25 months, pT3=42 months). The mean time to radiological recurrence was 5.6 months (range 3-8) and this was observed in 3 patients (17%) all of whom had pT3 (pT3a n=1, pT3b =2) disease. All recurrences demonstrated greater than Fuhrman grade-3 disease (n=1), tumour size over 3-cm (n=2), or a positive surgical margin (n=1). There was no evidence of disease recurrence or metastases in other tumour stages.
Conclusion: Current EAU follow-up protocols subject patients to un-necessary ionizing-radiation. Early recurrence rates are low for low-grade and stage disease and the diagnostic yield with current follow-up imaging protocols are poor. Surveillance regimens must reflect this to address radiation safety concerns. We propose the use of non-ionizing radiological follow-up for this cohort of patients.

MP-22.07
New Indication Approach for Partial Nephrectomy in Patients with RCC
Stakhovskyi O, Voylenko O, Vitruk I, Kotov V, Stakhovsky E
National Cancer Institute, Kiev, Ukraine

Introduction and Objectives: Nephrometry systems are good in predicting risk of complications but not indicating for nephron-sparing surgery (NSS) in RCC. Our objective was to develop a tool that will ease surgeons' choice of NSS treatment for RCC.
Materials and Methods: Retrospective analysis of 221 patients intended to undergo PN. Tumor size, location, R.E.N.A.L., remaining functional parenchyma volume (RFPV) of kidney with tumor and patients data were analyzed. RFPV calculated by formula: RFRV= $(1-[R_4*R_5*R_6/0.96*R_1*R_2*R_3])$ x100%, where R_1, R_2, R_3 – kidney width, length and thickness; R_4, R_5, R_6 – tumor sizes located within the kidney. RFPV was greater than 55% in all cases, but PN was performed in 171 (77.4%) and nephrectomy – in 50 (22.6%) patients.
Results: Comparing patients who underwent RN and PN showed no statistical difference in R.E.N.A.L. scores, but there was significant difference between lesions sizes and RFPV. Location analysis accounting for RFPV showed similar surgery type distribution between polar and lateral localizations (with RFPV more than 55% PN was performed in 133 [82.6%] of cases) and different results in medially located tumors, where RFPV did not show statistical dependency (p=0.13). The main indication for PN in this situation was the size of the tumor. PN was performed in 92.3% with T1a lesions and only in 31.8% with tumors more than 4cm in size ($p < 0.001$). Newly developed nephrometric system was named N.C.I.U.-nephrometry. Polar lines creating two segments U (upper) and I (inferior), third interpolar segment is divided by vertical line in interpolar segment forming N (nearness) - closer to pelvis and C (collateral). If tumor is located in one segment it is marked by capital letter of that segment and if there is a part of tumor growing into

other segment, it is marked with two letters, capital letter indicated majorly involved segment. Combining N.C.I.U. with RFPV gives information about location and percentage of remaining functional parenchyma.
Conclusion: Use of N.C.I.U. nephrometry with account of RFPV optimizes and eases surgeons' choice for PN in RCC. New indications for PN are lateral and polar tumors with RFPV more than 55%. In medially located lesions size less than 4 cm is the main indicator for PN.

MP-22.08
Preoperative Risk Stratification for Cancer: Specific Survival in Patients with Renal Cell Carcinoma with Venous Involvement Who Underwent Nephrectomy
Nakayama T[1], Saito K[1], Fujii Y[1], Abe-Suzuki S[2], Nakanishi Y[1], Kijima T[1], Yoshida S[1], Ishioka J[1], Matsuoka Y[1], Numao N[1], Koga F[1], Kihara K[1]
[1]Dept. of Urology, Tokyo Medical and Dental University, Tokyo, Japan; [2]Dept. of Human Pathology, Tokyo Medical and Dental University, Tokyo, Japan

Introduction and Objectives: The aim of this study is to identify the preoperative prognostic factors and create a risk stratification model for patients with renal cell carcinoma (RCC) with extension into the renal vein (RV) or inferior vena cava (IVC).
Materials and Methods: The study cohort included 61 patients with RCC extending into the RV or IVC that underwent operations between 1993 and 2012. Cancer-specific survival (CSS) rates were estimated and univariate and multivariate analyses were carried out to determine the prognostic factors. A simple risk stratification model was developed for these patients.
Results: The median follow-up period of the current patient cohort was 33.7 months. Their 1, 3, and 5-year CSS was 89, 70, and 65%, respectively. On multivariate analysis, the level of tumor thrombus extension (extension into the supradiaphragm), presence of distant metastasis, and elevation of lactate dehydrogenase and C-reactive protein were independent negative prognostic factors for CSS. A simple scoring model to predict CSS after nephrectomy for RCC with venous involvement was developed using the regression coefficients from the multivariate analysis. The score was calculated as 2 (if the tumor extension into the supradiaphragm) + 1 (if distant metastasis) + 2 (if the level of LDH is abnormal) +1 (if CRP is 5.0 mg/l or greater) and 0 (otherwise). The patients were divided into three groups according to the score: low- (0; n = 17), intermediate- (1-3; n = 26), and high-risk (4-6; n = 18) groups. CSS rates were clearly discriminated by the stratification according to the scoring model ($p < 0.001$). The concordance index of the new model was 0.80.
Conclusions: We demonstrated a simple risk stratification model with four preoperative independent prognostic factors for patients with RCC with venous involvement. This may be a useful decision-making model in the management of such patients.

MP-22.09
Outcomes of Synchronous and Metachronous Bilateral Renal Cancers: A Population Based Study
Jones P, Hillen M, Nabi G
Medical Research Institute, Ninewells Hospital School of Medicine, Dundee, Scotland, UK

Introduction and Objectives: Outcomes of bilateral renal cancers remains under reported especially for non-surgical management. The study reports a large population based cohort of patients with bilateral renal lesions.
Materials and Methods: Scottish Cancer Registry at Scottish National Services maintains datasets for all the renal cancers diagnosed since 1997. Altogether 10,200 patients with renal cancers were recorded during a period of 15 years. The incidence of bilateral cancer; both synchronous and metachronous (more than 6 months of unilateral lesion treatment) was calculated. Mean period for metachronous lesions were calculated. The large dataset was linked with departmental database to study in details the outcomes of patients with bilateral tumors including expectant treatment.
Results: A synchronous bilateral renal cell cancer was reported in 110 patients. A total of 40 metachronous bilateral cancers were recorded during mean follow-up of 8.7 y ± 7.3 years. Mean time for appearance of metachronous lesion was 62.32 ± 40.63 months (min.9.17; max 148.67). Majority of metachronous lesion had simultaneous appearance of metastatic disease. Radical nephrectomy remained the commonest procedure for synchronous lesions while nephron sparing surgical approaches were offered in smaller tumors. Younger age (<60), clear cell histology and size of primary tumor were significantly associated with development of metachronous lesions (p value 0.004). The increase in size of the synchronous lesion was 0.2cm/year compared to 1.46 cm/year for metachronous lesions.
Conclusion: Majority of bilateral renal masses are synchronous. Large tumor size and younger age had a higher risk for the development of metachronous lesions which significantly associated with metastatic disease elsewhere.

MP-22.10
The Role of Image-Guided Renal Biopsy in Managing Small Renal Masses (SRM)
Drinnan N, Zhakri R, Hindley R, Emara A, Chetwood A, Crawford R, Barber N
Frimley Park Hospital, Surrey, UK

Introduction and Objectives: With the expanding role of imaging in our aging population, incidental renal tumours are becoming increasingly prevalent. SRM's now represent 48-66% of renal cancers. We examine whether improved histopathological techniques change the potential role of diagnostic renal biopsies in determining appropriate management regimens.
Materials and Methods: We prospectively collected data regarding all patients undergoing percutaneous image guided renal biopsy prior to nephron sparing surgery (NSS), to assess its use across our regional cancer network.
Results: Our cohort of SRM's ranged from 13-56 mm within a population aged 44-79 years. Of the 25 biopsied 68% were positive for malignancy, 20% benign and 12% failed (defined as an inadequate sample or technical fail). Overall 68% of patients were treated and 32% remain on radiological surveillance. Of those having NSS, the final histology matched the biopsy results in all but one case - where biopsy had shown "chromophobe" and histology confirmed "clear-cell" carcinoma. There were no recorded complications from the biopsies and no statistically significant difference in operative or ischaemic times between the biopsy and non-biopsy groups at the time of surgery. Subjectively, however, the dissection was felt to be more difficult than usual by the surgeon in 30% of the post-biopsy cases. The majority of patients also found that the biopsies themselves were more unpleasant than the subsequent surgery.
Conclusions: Image guided biopsy has a high success rate in terms of accurately targeting SRM's, and can be carried out safely to provide accurate histological results. There is no obvious negative impact upon clinical outcome, though its tolerability remains uncertain.

MP-22.11
CCI-779 (mTOR Inhibitor) Alone Is More Effective than Combination with SB203580 (P38 MAPK Inhibitor) in RCC Cell Line
Chauhan A**, Singh S**, Bhattacharyya S, Mandal A
Post Graduate Institute of Medical Education and Research, Chandigarh, India

Introduction and Objectives: Mammalian target of rapamycin (mTOR) induces Mitogen activated protein kinase (MAPK) which is involved in cell survival and proliferation. Combined inhibition of both the pathways caused increased apoptosis in prostate cancer. Present study was conducted to evaluate the effect of combination of mTOR inhibitor with MAPK inhibitor in renal cell cancer (RCC).
Materials and Methods: The effect of mTOR inhibitor (CCI-779) and p38 MAPK inhibitors (SB203580) alone and in combination was evaluated on RCC cell line, A-498. Subtoxic concentrations of inhibitors were selected by MTT assay. Cell viability was measured by

Annexin V/PI staining, sub-G1 population, ROS production and anchorage independent growth was measured by soft agar colony formation assay.
Results: Cells treated with CCI-779 increased the apoptosis from 10% to 38% which was found to be statistically significant ($p < 0.05$). Treatment with SB203580 showed 16% apoptosis. Combined treatment with CCI-779 and SB203580 showed 26% apoptosis (Figure 1). Cells treated with CCI-779 showed higher ROS and lower anchorage independent growth as compare to SB203580 alone or in combination treated cells (Figure 2).
Conclusion: CCI-779 is more effective in RCC as compared to its combination with p38 MAPK inhibitor. This appears to be due to a complex crosstalk involved between mTOR and MAPK pathways.

MP-22.12
Can Pre-Nephroureterectomy Ureteroscopy Reliably Diagnose Urothelial Carcinoma *in situ*?
Gillan A, Rai B, El-Mokadem I, Zakikhani P, Nabi G
NHS Tayside, Dundee, UK

Introduction and Objectives: Endoscopic management is expanding in upper tract urothelial carcinoma (UT-UCC). Reliable grading and staging still remains an essential element and presence of concomitant carcinoma *in situ* (CIS) on pre-nephroureterectomy ureteroscopic (PNU) will change management options. Whether white light PNU can reliably diagnose concomitant CIS remains unproven. We review pre-operative endoscopic biopsy results with histology obtained at radical nephroureterectomy.
Materials and Methods: Patients who underwent radical nephroureterectomy at Ninewells Hospital, Dundee for UT-UCC between January 1998 and December 2012 were identified from our database Tayside Urological Cancers Network (TUCAN). PNU appearances, biopsy stage and grade were compared with final histology results of radical nephroureterectomy (RNU) for UT-UCC to assess the diagnostic accuracy of PNU for carcinoma *in situ* (CIS).
Results: A total of 138 patients underwent RNU for UT-UCC. Fifty six (40.6%) of these patients were evaluated via PNU using white light and 47 (83.9%) had a PNU biopsy (Group 1). Eighty two patients (59.4%) did not have PNU (Group 2). Post-nephroureterectomy histology showed CIS in 36 (26.1%) patients, 12 (33.3%) of these patients belonged to Group 1 and 24 belonged to Group 2. PNU, however failed to detect or suspect CIS in all 12 patients in Group 1. In fact, one patient had CIS on PNU biopsy which was not confirmed on the final RNU histology (false positive). Patients with a diagnosis of CIS showed shorter recurrence free survival, however this was not statistically significant (p=0.337). Overall survival was also shorter in patients with CIS compared with those without; this showed strong statistical significance (p=0.004). Although on multivariate cox proportional hazards model CIS was not found to be independently associated with survival (p=0.105).
Conclusions: PNU using white light significantly under-diagnoses upper tract CIS and there is an urgent need for evaluating adjunct techniques (photodynamic diagnosis, narrow band imaging and autofluorescence) to detect this entity, especially in selecting patients for endoscopic management.

MP-22.11, Figures 1 and 2.

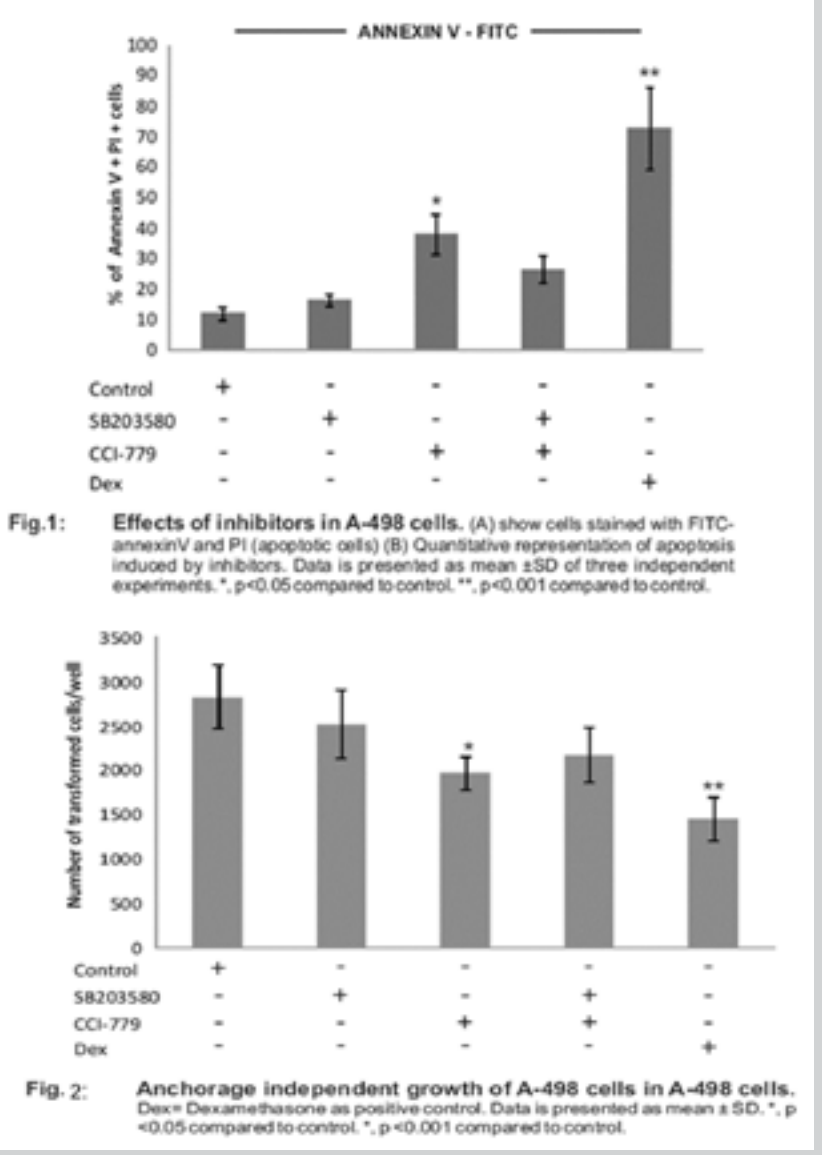


Fig.1: **Effects of inhibitors in A-498 cells.** (A) show cells stained with FITC-annexinV and PI (apoptotic cells) (B) Quantitative representation of apoptosis induced by inhibitors. Data is presented as mean ±SD of three independent experiments. *, p<0.05 compared to control. **, p<0.001 compared to control.

Fig. 2: **Anchorage independent growth of A-498 cells in A-498 cells.** Dex= Dexamethasone as positive control. Data is presented as mean ± SD. *, p <0.05 compared to control. *, p <0.001 compared to control.

MP-22.13
Is It Time to Replace Ultrasound with Computed Tomography (CT) Urography as the Initial Investigation in Patients with Visible Haematuria?
Bommireddy T, Singh R, Addla S, Chahal R
Bradford Royal Infirmary, Bradford, UK

Introduction and Objectives: We investigated the role of CT urography (CTU) in patients with visible haematuria in a haematuria clinic. We focused on the detection of urological malignancies particularly upper tract transitional cell carcinomas (UT-TCC). The time delay from ultrasound kidneys, ureters and bladder (USS-KUB) to CTU was measured.
Materials and Methods: The data from 214 patients with visible haematuria between December 2012 and July 2013 was analysed. Patients underwent USS- KUB and cystoscopy;

CTU was offered to patients with negative USS-KUB or if otherwise clinically indicated. All patients diagnosed with high risk and invasive bladder cancers underwent upper tract evaluation.
Results: The mean age of patients was 63.6 yrs of which 76% were males. An USS-KUB was performed on 208 patients (97.2%) and 164 patients (76.6%) underwent a CT scan. Five UT-TCCs and three renal cancers were noted exclusively on CT. Additionally, CT provided upper tract evaluation for high grade bladder cancers (6), staging for muscle invasive bladder cancer (4) and in patients with tumours overlying the ureteric orifice (6). A malignant rectal cancer was noted incidentally on CT. CT also found 7 ureteric calculi necessitating urgent treatment, 15 significant renal stones of which 6 needed early treatment, and 4 complex renal cysts (Bosniak ≥ 2f) requiring follow-up. Other incidental lesions included an angiomyolipoma, a renal abscess, abdominal aortic and iliac aneurysms (3), a hiatus hernia, retroperitoneal lymphadenopathy (1) and an inferior vena caval thrombus. CT detected significant urological pathology and provided upper tract evaluation in 42 pathologies (22.0% of patients), and found 4.9% of patients to have other significant pathologies requiring follow-up or treatment. The median time delay from USS-KUB to CT was 50 days for cancers.
Conclusion: The majority of patients require a CT scan. CT detects additional cancers and provides superior delineation of the upper tract highlighting relevant information for high risk and invasive bladder cancers. Performing an initial CT instead of an USS- KUB shortens time delays by 7 weeks. This study provides strong evidence for replacing USS- KUB with CTU as the initial imaging of choice for patients with visible haematuria.

MP-22.14
High Expression of GOLPH3 Defines Poor Prognosis in Non-Muscle-Invasive Bladder Cancer and in Patients with Invasive Bladder Cancer Undergoing Radical Cystectomy
Xue Y, Huang R, Kang H, Xia W, Xiao G, **Zou X**
First Affiliated Hospital of Gannan Medical University, Ganzhou, China

Introduction and Objectives: Conventional clinicopathologic risk factors have failed to accurately predict the prognosis of patients with bladder cancer (BC). This study aimed to evaluate Golgi phosphoprotein 3 (GOLPH3) expression as a progression marker in patients with non-muscle-invasive BC (NMIBC) treated by conservative methods and as a prognostic marker in patients with invasive BC undergoing radical cystectomy (RC).
Materials and Methods: Two different tissue microarrays were constructed, one with 124 primary Ta/T1 tumours from patients treated by transurethral resection of the bladder and one with 92 tumours from RC patients. GOLPH3 expression was examined by immunohistochemistry.
Results: A high GOLPH3 expression in Ta/T1 patients was significantly correlated with a higher risk of progression that was independent of conventional risk factors in multivariate analysis. In patients undergoing RC, a high GOLPH3 expression was an independent predictor of poor prognosis. A high GOLPH3 expression was correlated with a higher risk of visceral metastasis rather than lymphatic spread.
Conclusion: GOLPH3 expression is a marker for progression of NMIBC and a prognostic marker in patients undergoing RC.

MP-22.15
Prognostic Factors for Poor Oncological Outcomes of Upper Tract Urothelial Carcinoma (UTUC) in the Chinese Population: 14-Year Experience from 2 Tertiary Centres
Poon V[1], Tsang C[2], Ma W[2], Cheung F[1], Yiu M[2]
[1]Princess Margaret Hospital, Hong Kong, Hong Kong; [2]Queen Mary Hospital, Hong Kong, Hong Kong

Introduction and Objectives: To identify the prognostic factors for poor oncological outcomes, in terms of bladder recurrence, local recurrence, distant metastasis and 5-year cancer-specific survival (CSS), of UTUC in the Chinese population from 2 tertiary referral hospitals in Hong Kong.
Materials and Methods: Predictive factors were analyzed by retrospective review of all patients who were treated with nephroureterectomy (NU) or segmental ureterectomy (SU) for UTUC in two tertiary referral centres in Hong Kong from April 1999 to May 2013. Prognostic factors evaluated included three categories: pre-operative/ clinical factors, intra-operative/ surgical factors, and post-operative/ pathologic factors. Univariate and multivariate logistic regression analyses were used.
Results: A total of 124 patients who received NU (n=104, 83.9%) or SU (n=20, 16.1%) were reviewed. 72 (58%) patients had pathologic T2 or higher stage tumors. Overall survival was 57% at a median follow-up of 50 months and the actuarial CSS at 5 years was 77%. Both higher T staging (HR 1.841, p=0.014) and lymphovascular invasion (HR 2.803, p=0.025) were predictors for cancer related deaths. Fifty four (43.5%) patients developed bladder recurrence at a median interval of 8.5 months. Previous UTUC (HR 3.991, p=0.01), multifocal tumors (HR 2.015, p=0.049) and concurrent bladder tumor (HR 2.252, p=0.016) were predictive factors for bladder recurrence in multivariate analysis. Local recurrence occurred in 8 (6.5%) patients only in our series and analysis was therefore not performed. Thirty three (26.6%) patients had distant metastasis at a median interval of 13 months with T staging (HR 1.666, p=0.029) being the only predictor for distant metastasis in multivariate analysis.
Conclusion: Higher T-staging and lymphovascular invasion were poor prognostic factors for CSS for UTUC in the Chinese population, while bladder recurrence tends to occur early. Patients with previous UTUC, multifocal tumors and concurrent bladder tumors should be closely followed-up for bladder recurrence after surgery.

MP-22.16
Stratifying Cystoscopic Surveillance following Nephroureterectomy: Predictors of Recurrence according to Upper-Tract Tumour Characteristics
Alberto C, Sahu M, **Nair R**, Ayres B, Le Roux P, Anderson C
St. George's Hospital, London, UK

Introduction and Objectives: The current standard of care for resectable Upper Tract Urothelial Carcinomas (UTUC) is nephroureterectomy; however, post-operative bladder cancer (BCa) recurrence is common and quoted as high as 51%. The European Association of Urology have recommend follow-up cystoscopy at 3 months following surgery and then annually for 5 years. We present a study to assess whether primary UTUC pathological characteristics predict BCa recurrence and investigate whether current guidelines provide appropriate follow-up in this patient population.
Materials and Methods: BCa recurrence rates in patients undergoing nephroureterectomy over a period of 10 years in a single institution were reviewed. Pathological characteristics of the primary UTUC (including grade, stage, size, location, invasiveness) multiplicity and associated history of previous BCa were mapped against timing and stage of bladder recurrences. The minimum follow-up time was 12 months.
Results: Sixty-six patients had nephroureterectomy for UTUC. Six were excluded from analysis due to inadequate follow-up. The bladder recurrence rate was 26.7% (18 patients). There was no correlation between recurrence rate and upper tract tumour characteristics on single or multivariate regression analysis. Median time to bladder recurrence was 6.5 months (interquartile range 5.2-10.8) following nephroureterectomy for patients with high grade UTUC primary compared to 14.2 months (6.8-22.6) for grade one and two UTUC. This was not influenced by a prior history of BCa. In addition, there were 8 high-grade BCa recurrences (44%) all of which were in patients with high grade primary UTUC.
Conclusion: Histological grading of UTUC may help predict the timeframe and grade

of BCa recurrence. Patients with high-grade UTUC should be considered for more frequent cystoscopic surveillance than guidelines currently suggest; this is particularly so during the first year following nephroureterectomy.

MP-22.17

The Curative Potential of Lymphadenectomy after Response to Chemotherapy in Patients with Urothelial Carcinoma Presenting with Regional or Distant Nodal Metastases: Analysis of a Series from a Tertiary Cancer Center

Necchi A, Lo Vullo S, Giannatempo P, Farè E, Nicolai N, Piva L, Biasoni D, Torelli T, Catanzaro M, Stagni S, Crestani A, Colecchia M, Paolini B, Gianni A, Mariani L, Maffezzini M, Salvioni R

Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

Introduction and Objectives: The available information would suggest a benefit from surgical removal of metastatic disease in selected patients with urothelial cancer, but the heterogeneity of data and the limited sample size hampered the level of evidence. We aimed to analyze the contribution of post-chemotherapy (CT) lymphadenectomy only on survival outcomes in responding patients from our center.
Materials and Methods: Between 1986 and 2012, 157 patients with locally advanced or metastatic urothelial cancer received first-line combination of methotrexate, vinblastine, doxorubicin, and cisplatin (MVAC). Of them, patients experiencing at least a stable disease of subdiaphragmatic nodal disease/local recurrence only were selected. For the sake of parsimony, the prognostic effect of singly taken covariates (surgery of tumor primary, site of nodal disease, extent of nodal sites [single vs. multiple]) upon survival was investigated using Cox proportional hazard regression models, with and without adjustment by treatment group (post-CT surgery vs. observation).
Results: Fifty nine patients were identified, 31 (52.5%) had regional nodes and 28 (47.5%) had metastatic disease. Forty two (71.2%) had multiple nodal sites, 15 patients (25.4%) had an upper tract tumor primary, 24 (40.7%) had received major surgery. Twenty-eight patients underwent post-chemotherapy pelvic (N=14) or retroperitoneal lymphadenectomy (N=14) after achieving a complete response (CR, N=7) or a partial response-stable disease (PR+SD, N=21). Eight out of 28 patients (28.6%) achieved a pathologic-CR. Median follow-up was 88 months (IQR: 24-211). Median progression-free (PFS) survival by treatment group (surgery vs. observation) was 18 (95% CI, 11-N.E.) and 11 (95% CI, 5-19) months, respectively (logrank test p=0.009). Median overall survival (OS) was 37 (95% CI, 20-N.E.) and 19 (95% CI, 9-38) months, respectively (p=0.004). Surgical consolidation was associated with better PFS (HR: 0.43, 95% CI, 0.22-0.84, p=0.013) and OS (HR: 0.36, 95% CI, 0.17-0.76, p=0.007) in univariable analysis (UVA). This was the only significance in UVA and it was retained in multivariable analysis when adjusting for each of the other covariates. No effect of pathologic status was found. Results are limited by small numbers.
Conclusion: In well selected patients with UC like those achieving a clinical benefit from chemotherapy and having exclusive nodal metastatic disease there was a clear survival advantage when removing disease residuals.

MP-22.18

A Large Single Center Study Describing the Evolution of Renal Tumor Biopsy over a 13-Year Period

Richard P[1], Bhatt J[1], Jewett M[1], Kachura J[2], Evans A[2], **Finelli A**[1]

[1]Princess Margaret Cancer Centre, University Health Network, Toronto, Canada; [2]Toronto General Hospital, University Health Network, Toronto, Canada

Introduction and Objectives: The incidence of small renal masses (SRMs) has increased in recent years. SRMs are defined as enhancing solid lesions measuring ≤4cm. We present our experience with percutaneous renal tumor biopsy (RTB) of SRMs, which to our knowledge, is the largest to date.
Materials and Methods: We reviewed database to ascertain the incidence of benign, malignant and non-diagnostic biopsies of SRMs performed in our institution from 2001 to December 2013. A total of 585 RTBs were performed (560 SRMs). The diagnostic rate was compared over time. The accuracy of the biopsies was correlated with the definitive pathology with regard to histology and grading (for conventional cell carcinoma only) in the cases where the biopsy led to surgery.
Results: The mean size of the 560 biopsied lesions was 2.5 cm (Interquartile range (IQR) 1.8-3.2). The diagnostic rate at the 1st biopsy was 89.8% (n=503). Of the diagnostic biopsies, 124 (24.7%) were benign and 379 (75.3%) were malignant. Of the 57 non-diagnostic biopsies, 25 (43.9%) had a repeat biopsy. A diagnosis was obtained in 21 cases [84.0%; 10 (47.6%) benign, 11 (52.4%) malignant]. Therefore RTB led to a diagnosis in 524 of the 560 SRMs (93.6%). Over time, there was a decrease in the rate of non-diagnostic biopsies from 17.8% (2001-2005) to 9.1% (2011-2012; p=0.09). Of the available surgical pathology (n=171), there was agreement between histology in 93.6% of the cases (kappa 0.89, 95% CI 0.83-0.96). For the conventional cell carcinoma (n=102), there was concordance between Fuhrman grades in 94.3% of the cases (kappa 0.70, 95% CI 0.48-0.92).
Conclusions: RTB of SRMs provided a diagnosis in 93.6% of the cases. Surgery was avoided in almost 25% of patients following RTB because of benign histology. The rate of non-diagnostic biopsies diminished over time. Finally, there was a high correlation between the biopsy and the final pathology with regards to both histology and grade. In an era where overdiagnosis and overtreatment of favorable cancers is gaining attention, routine RTB for SRM leads to diminished intervention and going forward personalization of care.

MP-22.19

Evolution of Operative Time and Intraoperative Bleeding in the First 100 Laparoscopic Partial Nephrectomies at an Argentinean Community Hospital

Vitagliano G, Castilla R, Ameri C, Mazza O

Hospital Aleman, Buenos Aires, Argentina

Introduction and Objectives: Minimally invasive partial nephrectomy is in continuous development. This technique is currently the best option for the treatment of localized renal tumors. However, it requires hard training and a long learning curve. Surgeon's skill directly affects surgical time, ischemia time and intraoperative bleeding. Also surgeon's ability may determine case selection.
Materials and Methods: We present our first 100 laparoscopic partial nephrectomies (LPN) performed between November 2007 and March 2014 in a single center by the same surgeon or by residents at his care. Surgical time and intraoperative bleeding is compared between the first 50 (Group A) and second 50 (Group B) laparoscopic partial nephrectomies. We point out the cases that didn't require vascular clamping and the T1b tumors operated in each group.
Results: Mean surgical time decreased from 128 minutes in Group A to 101 minutes in Group B (21%). A total of 5 and 8 T1b tumors were operated in Groups A and B respectively. Mean warn ischemia time decreased from 17.7 minutes in Group A to 13.7 minutes in Group B (22%). A total of 12 and 9 surgeries were performed without vascular clamping in Groups A and B respectively. Mean operative bleeding decreased from 141 ml in Group A to 75 ml in Group B (47%). Three patients required blood transfusion on Group A. In 2 cases of Group A, laparoscopic radical nephrectomy had to be performed due to secondary bleeding during immediate postoperative.
Conclusions: Surgical time, warn ischemia time and intraoperative bleeding have been significantly reduced by 21, 22 and 47% respectively between the first 50 and second 50 laparoscopic partial nephrectomies. There was no need for transfusions or laparoscopic radical nephrectomies in the second 50 surgeries.

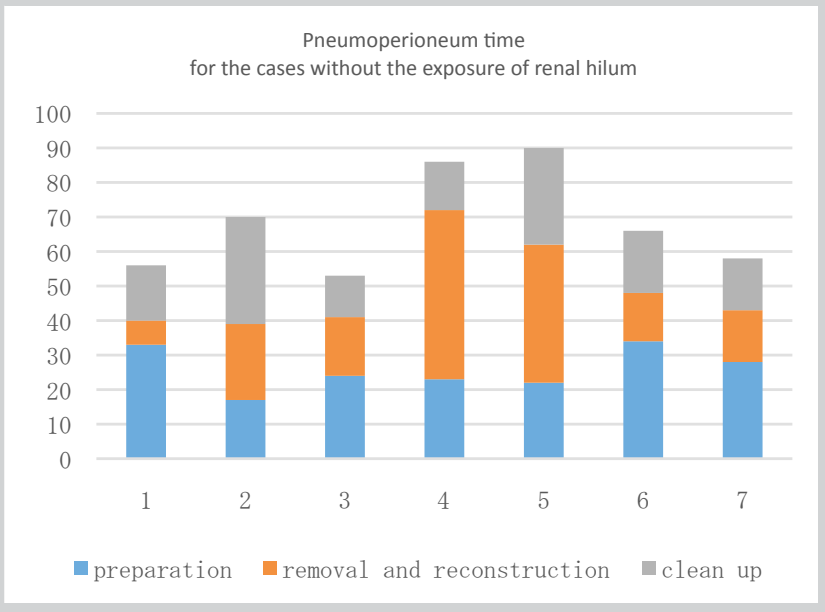
MP-22.20
Complete Ureterectomy: Necessary or Optional?
Nemade H[1], Cuckow P[2], Mushtaq I[2], Smeulders N[2], Cherian A[2]
[1]Basildon and Thurrock University Hospital, Basildon, UK; [2]Great Ormand Street Hospital, London, UK

Introduction and Objectives: The aim of this study was to assess the incidence and risk factors for residual ureteric stump excision following hemi and total nephrectomy in children.
Materials and Methods: Retrospective review of children who underwent hemi-nephrectomy/nephrectomy over 10 years was carried out. Indications for stump excision were noted. Follow-up included clinical review, ultrasound, MAG-3 renogram and bladder function assessment as required.
Results: Hemi-nephrectomies(total-76, Laparoscopic-16) an nephrectomies (total-116, Laparoscopic-30) were reviewed. Mean age at primary procedure: 30 months (range=3-90) and mean-interval from primary procedure for residual stump excision: 36 months (range=12-72). Residual stump excised: hemi-nephrectomies – 7 (9%) and total nephrectomies – 3 (2.5%) with resolution of symptoms in all. Male:female ratio (2:8); Seven duplex and 3 simplex renal units; Eight (2 simplex) were refluxing and 2 ectopic ureters. Indications for stump excision were recurrent urinary tract infection (UTI) (n=6), persistent vaginal discharge (n=2), voiding dysfunction (VD) with incomplete emptying (n=1) and UTI with VD (n=1). All had persistently dilated ureteric stump on ultrasound before re-intervention. Ureterocele excision (n=2) and ureteric reimplantation (n=1) of contralateral side was done along with stump excision. Interestingly in the re-intervention group all had open primary procedure. One of 10 stumps was excised laparoscopically.
Conclusion: Subtotal ureterectomy remains the policy in our institution, however children with risk factors such as reflux and duplex systems will require follow-up for at least 5 years. In simplex units every attempt must be made to excise the refluxing ureter completely and this could be facilitated laparoscopically.

MP-22.21
Complete Off-Clamp Zero Ischemia Partial Nephrectomy without the Exposure of Renal Artery under Normal Blood Pressure: Initial Experiences Have Revealed Short Operation Time
Yanaihara H, Ogihara K, Kaguyama H, Hanashima F, Sakamoto H, Aonuma K, Matsuda K, Nakahira Y, Asakura H
Saitama Medical University, Iruma, Japan

Introduction and Objectives: Complete off-clump Zero Ischemia partial nephrectomy (ZIPN) is one of the most challenging procedures among several variation of partial nephrectomy. The exposure of renal artery is usually obligated to prepare shutting the blood stream in emergency situation. But it has been already reported that partial nephrectomy can be done without massive bleeding for small tumors. We tried Zero Ischemia partial nephrectomies without the exposure of renal hilum.
Materials and Methods: Subjects are ten T1a tumors and one T1b tumor. Tumor size was 12-44 mm (median 20). RENAL score was from 4 to 8 (median 6). All tumors were removed without clumping renal artery. The exposure of renal artery was not done in seven cases. Renal artery was exposed to prepare clamping for the first case, T1b tumor case and two retroperitoneal approach cases.
Result: Blood loss was 0-280 ml (median 40 ml). Pneumoperitoneal time was 53-127 min (median 70 min). In the cases without the exposure of renal artery, Pneumoperitoneal time was 53-90 min (median 70 min). 7-50 min (median 22 min) was taken from the removal of tumor to the end of renorrhaphy. All procedure was completed without any complication.
Conclusion: Complete off-clamp ZIPN could be done under normal blood pressure. The exposure of renal hilum can be omitted safely. It made the procedure simple, which can contribute to shorten the operation time of partial nephrectomy. Besides, laparoscopic ZIPN has an advantage of pnemoperitoneum pressure to reduce blood loss from incised parenchyma. From our experience, this procedure could be a valuable option.

MP-22.21, Figure 1.



Moderated Poster Session 23
Training and Education
Wednesday, October 15
1300-1430

MP-23.01

The Importance of Patient and Physician Education in Public Health Campaigns: Haematuria, a Case in Point

Browne D[1], Hughes-Hallett A[2], Vale J[1,2], Darzi A[2], Mayer E[1,2]
[1]*Imperial College Healthcare Trust, London, UK;* [2]*Imperial College London, UK*

Introduction and Objectives: Public health campaigns seek to raise public awareness of a given condition, prompting presentation usually at a primary healthcare provider. A recent public health campaign in the United Kingdom focused on haematuria, instructing members of the public to seek medical advice if they had experienced an episode of 'blood in the pee'. This campaign ran over October and November 2012. In this study we examine the relationship between haematuria referrals to a large hospital trust, with a catchment of over 2 million people, and the number of new diagnoses of renal and urothelial malignancy.
Materials and Methods: Data regarding new referrals to the trust's dedicated haematuria clinics and new renal and urothelial cancer diagnoses were obtained for the period February 2012 to January 2014. Paired t-tests were undertaken comparing referral and diagnoses for the February 2012 to January 2013 and February 2013 to January 2014 time periods. The time periods were split into pre-campaign (Feb-Sept) and post-campaign (Oct-Jan) cohorts for analysis.
Results: When data analysis was performed a trend towards a significant increase in the number of referrals, month-on-month, post the start of the public health campaign was seen ($p = 0.056$) compared to a non-significant difference in the number of pre campaign referrals ($p = 0.46$). This increase in referrals was not associated with a concurrent increase in cancer diagnoses ($p = 0.84$) (see Figure 1).
Conclusions: Although public heath campaigns are invaluable in increasing public awareness of pathology they must be accompanied by appropriate education of healthcare professionals to ensure that initial investigation are carried out in the most appropriate healthcare setting.

MP-23.02

Impact of the Lack of Community Catheter Care Services on Emergency Department

Tay L, Lyons H, Raison N, Khan A, Taylor C, Thompson P
King's College Hospital, London, UK

Introduction and Objectives: Although catheter care is provided by the community nurses, long-term catheter (LTC) problems are a common presentation to the emergency departments (ED) and are often a significant burden to the services. We carried out an audit to assess the patients presenting with LTC associated problems to our ED and to identify the availability of community nursing support for their urinary catheter.
Materials and Methods: A prospective audit was carried out over two separate periods of all patients presenting to ED with a urinary catheter problem.
Results: A total of 78 patients presented to ED over a cumulative period of 69 days with 42% of them (n=33) presenting between 9-5pm. The mean age was 74 years (range 42-93). Median duration of urinary catheter in situ was 11 months (range 1-120). The most common reasons for attendance were blocked catheter (40%, n=31) and catheter-bypass (23%, n=18). Only 28% (n=22) had community nurse involvement. The majority of the remaining patients self-referred to ED. Fourteen (18%) needed urological intervention during acute presentation as their catheters could not be replaced by ED nurse or doctors.
Conclusion: The high morbidity of long-term catheter causes a considerable demand on ED services. The majority of patients had minimal community nurse input, although their catheter problems were easily dealt with by ED. Hence, more community nurses need to be trained in the management of the catheterized patient. We also need to improve the access to community support and ensure patients are informed of their available options, instead of defaulting to ED.

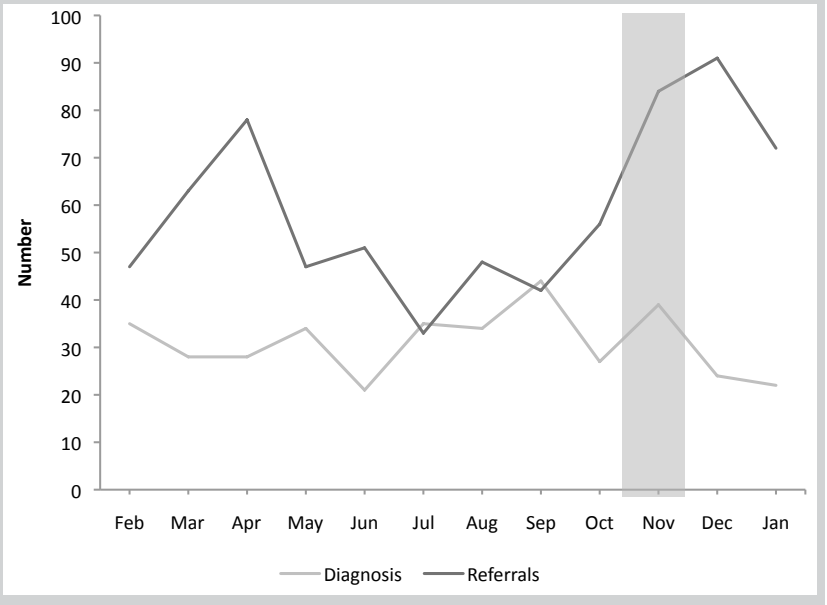
MP-23.03

Quality of Testosterone Replacement Prescribing and Monitoring in the Dayton, Ohio, USA Veterans Affairs Medical Center

Moore D[1], Ullah S[2], Bansal A[2], Gupta A[1,2]
[1]*VAMC, Dayton, USA;* [2]*Wright State Medical School, Dayton, USA*

Introduction and Objectives: Providers are replacing Testosterone (T) in men 50+ years of age due to ill-defined conditions. We noted men in the private sector and at our facility were started on T replacement without recommended labs and screening. We also found dosing and laboratory follow up was not appropriate. We sought to enable providers to appropriately identify patients for T replacement and ensure it was done safely under current guidelines.
Materials and Methods: We developed a template to educate and assist in prescribing and monitoring of T replacement using the Endocrine Society's guidelines. Retrospectively, 100 patients receiving injectable T replacement were reviewed comparing pre template vs post template for quality of prescribing and monitoring.
Results: Men age 33 to 77 underwent T replacement. Body mass index ranged from 21.70 to 52.60. Among all the patients, 91 were white, 9 were of African descent. Pre-template data is as follows: 31 patients had 2 separate AM testosterone levels drawn prior to treatment, 69 did not. Three patients had LH, FSH, and prolactin levels drawn, 97 did not. Seventy five had a prostate specific antigen lab within one year, 25 did not. Twenty had a digital rectal exam (DRE) before treatment, 80 did not. Forty three

MP-23.01, Figure 1. Total Number of Patients Referred with Haematuria and the Number of New Diagnoses of Renal or Urothelial Carcinoma: Shaded Area Represents the Duration of the 'Blood in the Pee' Public Health Campaign



patients had the correct dosage of T prescribed, 50 did not. Forty eight patients had T levels checked post initiation of T replacement while 52 did not. Overall, pre-template evaluation showed 100% lack of compliance to guidelines before initiating T replacement. Post template prescribing was complete on all parameters but the DRE. Data to verify appropriate monitoring post T replacement is in progress.
Conclusion: Testosterone replacement promises the "fountain of youth". T replacement has become ubiquitous worldwide. Risks remain unknown in the over 50 year old population. We believe that we need to closely adhere to guidelines to not only correctly identify men that will benefit from T replacement but also prevent untoward events. We have found that the quality of prescribing is enhanced by a prescribing template. Evaluation of quality of monitoring post template is underway.

MP-23.04
Variability in the Performance of Urology Multidisciplinary Teams: What Can We Learn?
Sarkar S[1], Lamb B[1], Soukup T[1], Arora S[1], Green J[2], Darzi A[1], Sevdalis N[1]
[1]Imperial College, London, UK; [2]Whipps Cross Univeristy Hospital, London, UK

Introduction and Objectives: Multidisciplinary team meetings are a mandatory component of cancer care in the UK. Their effectiveness is dependent upon quality of information exchanged and communication amongst team-members. We assessed how these variables differed across time within one Urology Multi-disciplinary Team (MDT) and their impact on decision-making.
Materials and Methods: This was a cross-sectional, observation study with prospective data collection over 10 weeks on 382 consecutive patients discussed in a Urology MDT. Two trained observers used a validated assessment tool (MDT *MODe*) to capture data in real-time on the quality of information presented and quality of discussion by MDT members (min score 1, max 5). Variability of outcomes across the 10-week study period was assessed using Kruskal-Wallis tests (all $p<0.05$).
Results: Mean number of cases discussed per meeting was 38. Mean time per case was 2.5 minutes. A mean of 11 core MDT members were present per meeting. Kruskal-Wallis showed significant variability between 10 consecutive meetings ($N=382$) on psychosocial aspects ($H(9)=34.54$, $p<0.001$) and comorbidity ($H(9)=34.54$, $p<0.001$), as well as on chair's ($H(9)=87.52$, $p<0.001$), oncologist's ($H(9)=18.17$, $p<0.05$), nurse's ($H(9)=50.95$, $p<0.001$) and radiologist's ($H(9)=24.7$, $p<0.01$) contributions. In addition, significant variability was also evident for the outcome variable, i.e., decision made ($H(9)=26.78$, $p<0.01$). In contrast, variability appeared stable for patient history, x-ray information, pathological information, patient views, as well as surgeon and coordinator's contributions (all $p>0.05$).
Conclusion: This study showed that quality of information exchange, communication and decision-making is variable within urology MDTs across a period of time. Understanding these differences may help standardise best practices and identify areas to target improvement efforts to optimise cancer care for patients in urology.

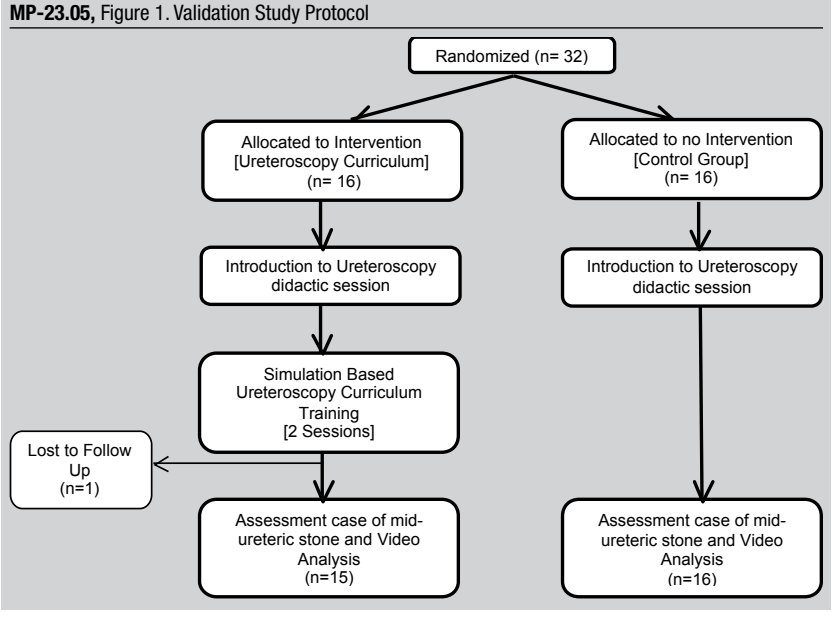
MP-23.05
Integrated Skills Development for Ureteroscopy: Development and Validation of a Curriculum
Brunckhorst O, Aydin A, Shahid S, Sahai A, Brewin J, Khan M, Dasgupta P, Ahmed K
MRC Centre for Transplantation, King's College, London, UK and Dept. of Urology, Guy's Hospital, London, UK

Introduction and Objectives: Ureteroscopy training modalities available contain sufficient validation evidence for utilisation within training. However, a structured and proficiency based curriculum is required. We therefore aimed to:
1. Develop a simulation based ureteroscopy curriculum integrating technical and non-technical skills teaching.
2. Validate the curriculum in terms of feasibility, educational impact and content validity.

Materials and Methods: The developed proficiency based curriculum was divided into four modules: 1. Knowledge. 2. Technical Skills. 3. Integrated skills development. 4. Non-technical skills. Three modalities of training were incorporated into this including a virtual reality simulator, a bench-top model and the Distributed simulator, an inflatable high-fidelity training environment. Content validation of the developed curriculum was sought from 7 experts from 3 separate institutions. Thirty two ureteroscopy naïve medical students from 7 medical institutions (average age 20.8) were recruited. The study protocol is highlighted in Figure 1. Time to completion and subjective questionnaires were utilised as outcome measures.
Results: A total of 86% of experts agreed the content of the curriculum was appropriate and 100% of respondents agreed that integration of non-technical skills via the distributed simulator was useful. Time to completion of the task was significantly lower within the group that had undertaken the simulation-based curriculum (932 vs. 1616 seconds, $p<0.001$). On a 10-point likert scale, feasibility of delivery was rated at an average of 9.3 and content of curriculum was rated at 9.1. One hundred percent of participants believed the addition of the full immersive environment was useful for the development of key non-technical skills.
Conclusion: This preliminary data suggests the developed curriculum is a feasible and acceptable modality for both technical and non-technical skills training with a proven educational impact. This curriculum could be adapted and used as a framework for the teaching of other procedures for a standardized and feasible simulation based teaching program.

MP-23.06
Face Validity Study of Cadavers Using Thiel Method of Embalming for Endoscopic Surgery in Urology
Rai B[1], Tang B[1], Healy S[1], Raslan M[1], Somani B[2], Tait I[1], Nabi G[1]

MP-23.05, Figure 1. Validation Study Protocol



[1]Ninewells Hospital, Dundee, UK; [2]Southampton Hospital, Southampton, UK

Introduction and Objectives: Human Cadavers forms the cornerstone of surgical training. Previous embalming techniques have however failed to display endoscopic anatomy adequately. Thiel Embalming method is a novel technique, which maintains normal tissue consistency with lifelike display of endoscopic anatomy. The study describes face validity of ureterorenoscopy (URS) and transurethral resection of prostate (TURP) in human cadaveric models embalmed using Thiel's method.
Materials and Methods: The University of Dundee has developed a facility for embalming cadavers using Thiels method for embalming specifically to address challenge of surgical skills training and research. These cadavers were used as models for assessing suitability for endoscopic (upper and lower urinary tract) skills training. Eleven practicing urologists (4 experts and seven trainees) were recruited to evaluate this model. Respondents were asked to perform part of whole procedure and complete a rating survey (Linkert scale 1 to five) upon completion specifically assessing positioning, tissue quality, resemblance to normal and preservation anatomical landmarks.
Results: In using a Likert scale between 1 and 5, results for anatomic preservation and resemblance to "real-life" were favourable, with the best scores for overall anatomical landmarks for ureteroscopy and stent insertion (4.7) and for patients positioning and endoscopic placement of instruments (4.5). The poorest scores were for the use of Thiel specific fluid for endoscopic resection (3.3), however this was improved using alternate fluid for irrigation. Scores for haptic realism were good as well. The average score for the question "overall, how valuable is the model as a surgical simulator" was 4.1. The experts felt that trainees (specialist trainees year 1-3) would benefit most from this surgical education model.
Conclusions: The cadavers using Thiel's method for embalming can be considered to have face validity for lower and upper tract endoscopy. Improvements will continue to be made to address some of the deficiencies in the type of fluid to be used for endoscopic resection using this model.

MP-23.07
Development and Content Validation of a Safety Checklist for Robot Assisted Radical Prostatectomy

Lovegrove C[1], Novara G[2], Guru K[3], Mottrie A[4], Challacombe B[5], Raza J[3], van der Poel H[6], Peabody J[7], Dasgupta P[1], Ahmed K[1]
[1]MRC Centre for Transplantation, NIHR Biomedical Research Centre, King's Health Partners, King's College, London, UK; [2]Dept. of Surgery, Oncology and Gastroenterology, University of Padua, Padua, Italy; [3]Roswell Park Cancer Institute, Buffalo, USA; [4]OLV Robotic Surgery Institute, Aalst, Belgium; [5]Depts of Urology and Nephrology & Renal Transplantation, Guy's & St Thomas' Hospital, London, UK; [6]Dept. of Urology, Netherlands Cancer Institute, Amsterdam, The Netherlands; [7]Henry Ford Hospital, Detroit, USA

Introduction and Objectives: Novel technologies require up-to-date technical and non-technical skills from surgeons to prevent adverse effects. Education and assessment of trainees must be adapted to equip surgeons with these skills, ensuring safe practice. This study aims to develop and validate a checklist via Healthcare Failure Mode and Effect Analysis (HFMEA) for training and assessing surgeons performing robot assisted radical prostatectomy (RARP).
Materials and Methods: This is a multi-institutional, observational, prospective study. HFMEA methodology identified the high-risk steps of RARP. HFMEA is a specific branch of risk assessment that aims to reduce the occurrence of adverse errors causing effects by adopting a pre-emptive approach. After assembling a multi-disciplinary team and observing surgeries, a procedural map was created which was further analyzed by an expert focus group using HFMEA scoring system. Steps with Hazard scores above the defined threshold were included in the checklist that was then further distributed to experts in the field for content validation.
Results: Five surgeons were observed for 42 hours to create a diagrammatic representation of RARP. In collaboration with an international focus group of 3 expert surgeons, consensus on the definition of each step was reached. HFMEA was undertaken at a further focus-group meeting with 4 expert surgeons. Eighty four failure modes were identified and associated with 46 potential causes with a "Hazard score" ≥8. After content validation with 4 experts, a 3-stage checklist was produced including 17 processes and 40 sub-processes. This encompassed "Preparation of the Operative Field" (4 processes, 6 sub-processes), "Dissection of the Bladder and Prostate" (9 processes, 24 sub-processes) and "Anastomosis and Closure" (4 processes, 10 sub-processes).
Conclusion: HFMEA identified hazardous steps specific to RARP and content validation produced a checklist. This checklist can be used in training and assessment of robotic surgeons in urology.

MP-23.08
IVUmed: A Nonprofit Model for Surgical Training in Low Resource Countries

DeLong J[1], Wood J[2], Steele A[2], Fredley M[2], McCammon K[1], deVries C[3]
[1]Eastern Virginia Medical School, Norfolk, USA; [2]IVUmed, Salt Lake City, USA; [3]The University of Utah Center for Global Surgery, Salt Lake City, USA

Introduction and Objectives: Low Resource Countries (LRCs) face both training and infrastructural challenges for surgical care. This is particularly true for specialty care such as urology. Local practitioners charged with caring for these patients have few options for basic or advanced study: travel abroad for hands-on training is virtually impossible due to certification regulations in the U.S. and Europe. IVUmed is a nonprofit organization that has supported urological educational programs in over 30 countries worldwide over the last 20 years. IVUmed's motto "Teach One, Reach Many" has emphasized a teach-the-teacher approach to sustainability.
Materials and Methods: The most limited resources for collaborative surgical training are time and administrative support. For most academic training departments even in wealthy countries, small numbers of specialized faculty mean that each has a very limited time available to train surgeons in LRCs. In order to maximize the short time available for teaching, IVUmed developed multi-faceted approach:

1. Long-term memoranda of understanding with partner programs in LRCs.
2. Expert training teams including surgeons, anesthesiologists, and ancillary staff.
3. Specific objectives for training based on procedures, problems or type of patients.
4. Scholarships for American residents to build sustainable leadership through experience working in LRCs during training.
5. Close relationships with regional, national and international urological associations such as the American Urological Association, the Société Internationale d'Urologie, the Pan African Urological Surgeons Association and the Société Haitienne d'Urologie.
6. Telemedicine support for interim case conferences and training between workshops.

Results: IVUmed partner sites have built sustainable training programs to address common and complex urological problems. IVUmed started with two workshops in 1992 with a single team leader. In 2012, the organization lead 21 workshops treating more than 800 patients under 16 different team leaders.
Conclusions: Successful collaborations for surgical training benefit from dedicated nonprofit involvement to coordinate volunteers, maintain standards of education and research and to leverage support from consortia of institutions, industry and individuals. The IVUmed model has shown sustainability and applicability to a variety of sites around the world.

MP-23.09
Modular Pelvic Surgery in Urology: Improving the Learning Curve

Dyakov S[1], Skambas D[1], Huneck S[1], Schneider A[1], Elert A[2]
[1]Dept. of Urology, Main-Kinzig-Kliniken, Gelnhausen, Germany; [2]Dept. of Urology, Johanniter Krankenhaus, Stendal, Germany

Introduction and Objectives: The "anatomical approach" to radical retropubic prostatectomy (RRP), designed to spare the nerve bundles and better control the bleeding during surgery, was developed by Patrick Walsh in the early 1980s. It rapidly became a standard surgical procedure and one of the most often performed operations in the oncological field of urology. A great part of the knowledge and efforts of the urological societies is aimed at standardizing the radical prostatectomy and its oncological results. Working in the same field we describe our results of performing RRP as part of our 'modular pelvic surgery' (MPS), an approach dividing the surgery into simple steps according to the anatomical topography. We have designed it to standardize the pelvic surgical procedures and achieve constant outcomes and a steep learning curve.
Materials and Methods: We performed a retrospective analysis of the last 130 Patients who underwent RRP at our clinic. The outcome meet the criteria of the German Association of Urology for prostate cancer treatment. The procedures were executed by 6 different surgeons, to 5 of whom the modular surgery approach had been unknown. The tutor surgeon operated 55 men (group S1) and the MPS-trainees 77 men (group S2). From the second group only one urologist have had performed a RRP before.
Results: We compared group S1 with S2. Using the independent samples *t*-test or Z-test we found no statistical difference in the following parameters: blood loss (as Hemoglobin-loss in g/dl 3.77 vs. 3.70; p=0.785), catheterisation period (7.66 vs. 7.93 days; p=0.472), postoperative lymphocele (6% vs. 6.5%; p=0.456), number of removed lymph nodes (10.54 vs. 9.53; p=0.250), PSA-progression free survival (at 36 months p=4.19) and positive surgical margins (12% vs. 11.7%; p=0.480). The operative time was the only parameter with statistically significant difference (132.6 min vs. 173 min; p<0.001). In terms of BMI and prostate size there was no significant difference between the two groups.
Conclusions: The results showed almost no statistical difference in the compared parameters which evaluate the surgical technique, and most important no difference in the very valuable oncologic parameter - the surgical margins. We are convinced that the modular approach in the pelvic surgery simplifies the radical prostatectomy and leads to a steeper learning curve.

MP-23.10
Incorporation of the GreenLight-SIM™ Simulator at the Annual Quebec Urology Objective Structured Clinical Examinations
Noureldin Y[1,2], Elkoushy M[1], Fahmy N[1], Carrier S[1], Elhilali M[1], **Andonian S**[1]
[1]McGill University Health Centre, Montreal, Canada; [2]Dept. of Urology, Benha University, Benha, Egypt

Introduction and Objectives: To assess laser prostatectomy skills of postgraduate trainees (PGTs) during the annual Quebec Urology Objective Structured Clinical Examinations (OSCEs).
Materials and Methods: After obtaining Institutional Review Board (IRB) approval and written informed consent, urology PGTs in Post-Graduate Years (PGY-3 to PGY-5) from all five urology training programs in Quebec were recruited to participate in assessment of their laser Photoselective Vaporization of the Prostate (PVP) skills using the GreenLight-SIM™ (GL-SIM) during two annual OSCEs on Dec 1st 2012 and Dec 7th 2013. PGTs were asked to perform two exercises: anatomical identification and PVP of a 30 g normal prostate within a 20-minute station. Grams vaporised, global scores and number of correct anatomical landmarks were recorded and correlated with PGY level, training on the GL-SIM and previous PVP experience.
Results: Twenty five PGTs were recruited at each OSCE with 13 PGTs participating in both OSCEs. PGTs had performed on average 2.8 and 4.5 PVP cases (p>0.05) prior to the 1st and 2nd OSCEs, respectively. When comparing scores from the 1st to the 2nd OSCE, there was a significant increase in the number of grams vaporised (2.9±0.2 vs. 4.3±0.4g; p=0.003) and global score (100±15 vs. 165±26; p=0.03). There was good correlation between the number of previously performed PVP cases and the global score (r=0.4, p=0.04). PGTs with previous practice on the GL-SIM (27/50) showed significantly increased global score (100.6 ± 19.6 vs. 162.6 ± 22.4; p=0.04) and grams vaporised (3.1± 0.27vs 4.1±0.36; p=0.04) compared with those who did not practice on GL-SIM before. PGY level did not significantly affect grams vaporised and global score (p>0.05). For the 13 PGTs who participated at both OSCEs, there was significant improvement in the global score (107±21 vs. 219±31; p=0.003) and grams vaporised (2.9±0.3 vs. 5.2±0.5; p=0.001) from the 1st to the 2nd OSCE.
Conclusion: Performance on the GreenLight-SIM at OSCEs significantly correlated with previous practice on the GL-SIM simulator and number of previous PVP cases performed rather than PGY level.

MP-23.11
How Are Multidisciplinary Team Decisions Implemented in Prostate Cancer Patients?
Thakare N, Njoku V, Turk S, Chinegwundoh F
Barts Health NHS Trust, London, UK

Introduction and Objectives: The multidisciplinary team (MDT) approach is of paramount importance in improving quality of care in cancer patients. Observational tools are being developed to assess performance of MDT meetings. To truly improve the efficacy of MDT pathways, it is necessary to study how decisions are implemented. We aim to review MDT decision-making and implementation in prostate cancer patients and to evaluate reasons for non-implementation.
Materials and Methods: Data were retrospectively collected for patients diagnosed with prostate cancer within a 12-month period in a single urology unit. MDT meeting documentation and patient records were assessed for details including PSA, Stage and Gleason score, MDT meeting recommendations, subsequent discussion with patients in MDT clinic and final management.
Results: MDT decisions were reviewed for 104 men with median age 74 and median PSA 15. Out of these, 65 (62.5%) had localized prostate cancer, 28 (27%) locally advanced and 11 advanced. MDT recommendations were made for all radical treatment options including prostatectomy and radiotherapy in 35 (33.6%) patients. Radiotherapy (+/- hormones) recommendation was made for patients including those not suitable for surgical options. Active surveillance was recommended as an option for low risk disease. No decision was made in 2 patients due to lack of information. Overall 4 (3.9%) decisions were not implemented; 1 was patient choice and 3 were physician decisions. Results are summarized in Table 1.
Conclusion: Implementation of MDT decisions in prostate cancer patients is good and the majority of decisions are concordant due to patient compliance. Physician change of decisions should be re-evaluated. It will be interesting to explore patient beliefs and degree of involvement in decision-making. We recommend a national governance framework to audit the MDT process in urological cancer management.

MP-23.11, Table 1. Summary of MDT Recommendations and Implementation

MDT Recommendation	No. (%age)	Implementation
All Radical Options	35 (33.6%)	34/35
Radiotherapy (+/- hormones)	20 (19.2%)	17/20
Hormone therapy only	26 (25%)	26/26
Active Surveillance	21 (20.2%)	21/21
No Decision	2	Not applicable

Moderated Poster Session 24
Assessment of LUT/LUTD
Wednesday, October 15
1300-1430

MP-24.01

Clinical Significance of NIH-Chronic Prostatitis Symptom Index Pain Score in Patients with Lower Urinary Tract Symptoms

Jung J[1], Kang T[1], **Ryang S**[1], Chae Y[2], Chung H[1], Kim K[1], Song J[1]

[1]Dept. of Urology, Yonsei University Wonju College of Medicine, Wonju, South Korea; [2]Dept. of Urology, Cheongju St. Mary's Hospital, Cheongju, South Korea

Introduction and Objectives: Recently, 16% of healthy men reported a history of prostatitis and there was a large overlap with men reporting benign prostatic hyperplasia. Therefore, we evaluated the change in International Prostate Symptom Score (IPSS) according to NIH-Chronic Prostatitis Symptom Index (NIH-CPSI) pain score in patients with lower urinary tract symptoms (LUTS).

Materials and Methods: From March 2011 to Feburary 2013, 134 patients with Lower Urinary Tract Symptoms (LUTS) were analyzed retrospectively. The presence of metabolic syndrome, prostate specific antigen, prostate volume, IPSS, NIH-CPSI, uroflowmetry, was collected.

Results: Forty one (30.5%) patients reported pain/discomfort on NIH-CPSI. The patients were classified into Group 1 (pain score ≤ 3) and Group 2 (pain score > 3). Mean IPSS were 16.79 ± 8.27 and 19.91 ± 6.93 between the 2 groups, respectively (p=0.020). Mean storage symptoms on IPSS were 6.53 ± 4.16 and 8.46 ± 3.56 in each group, respectively (p=0.005) (Table 1). Logistic regression analysis showed that NIH-CPSI pain score was a significant predictive factor, Moderate IPSS (R, 8.989: 95%CI, 1.056 – 76.539)) and Severe IPSS (R, 11.359: 95%CI, 1.306-98.751), whereas age, metabolic SD did not prove to be significant in this study (Table 2). In addition, 13 (9.7%) patients have pain/discomfort on ejaculation that was correlated with IPSS (p=0.021).

Conclusions: The presence and severity of pain scores are independent risk factors for men with LUTS. Particularly, specific prostatitis-like symptoms of pain/discomfort on ejaculation was correlated with severity of LUTS.

MP-24.02

Effect of Diabetes Mellitus on the Development or Presence of LUTS and Bladder Outlet Obstruction

Nale D[1,2], Bojanic N[1,2], Nikic P[1]

[1]Clinic of Urology, Belgrade, Serbia; [2]Faculty of Medicine, University of Belgrade, Belgrade, Serbia

Introduction and Objectives: Treatment of diabetic cystopathy may be complicated by frequently occurring coexisting urologic conditions. The aim of our study was to establish the influence of diabetes mellitus (DM) on the development or presence of lower urinary tract symptoms (LUTS) and bladder outlet obstruction (BOO).

Materials and Methods: Ninety four diabetic patients (cross-sectional study), mean age 53 ± 13 years, were investigated by: Frequency-Volume Chart, neurological examination, electromyography of lower extremities (EMG), digito-rectal examination, urinoculture, ultrasound examination including prostatic weight, detrusor wall thickness, and PVR, and urodynamic examination. The patients were classified based on presence or absence of LUTS. Of the 94 diabetic patients, 43 patients had LUTS (symptomatic group) and 51 patients were without LUTS (asymptomatic group). ICS nomogram was used as a criterion for diagnosis of the bladder outlet obstruction. BOO was defined as a sustained detrusor contraction of greater than 40 cm water, a catheterized urine flow rate of less than 12ml /sec.

Results: BOO was present in 6 men (11.76%) without LUTS and in 20 men (46.51%) with LUTS using pressure-flow-EMG study (p<0.01). One-way analysis of variance revealed that duration of DM had no influence on onset of BOO (p=0.23) and on onset of voiding symptoms in men (p=0.68), but it significantly influenced the onset of increased daytime frequency and nocturia in men. BOO had no influence on onset of storage symptoms (p=0.12), but it significantly influenced the onset of voiding symptoms (p<0.01).

Conclusion: Diabetes may affect storage more than voiding function in men. Alterations of proprioceptive sensations of the bladder and increased PVR by diabetes are a probable hypothesis to explain these findings. Duration of DM does not have influence on onset of BOO. Perception of voiding difficulties by diabetics indicate onset of BOO.

MP-24.01, Table 1. Baseline Characteristics (n = 134) of Patients

	Pain score ≤3	Pain score>3	p-value
Age (years)	64.82 ± 7.97	65.29 ± 9.09	0.752
Metabolic SD	31	34	0.879
Prostate volume (gm)	33.11 ±15.55	30.15 ± 12.10	0.290
PSA (ng/dL)	1.29±1.00	1.15 ± 0.85	0.398
IPSS total	16.79 ± 8.27	19.91 ± 6.93	0.020
voiding	10.25 ± 5.51	11.43 ± 4.48	0.178
storage	6.53 ± 4.16	8.46 ± 3.56	0.005
QoL	4.03 ± 1.26	4.33 ± 1.37	0.195
IIEF 5	9.14 ± 6.84	10.58 ± 6.58	0.331
Qmax (ml/s)	11.43 ± 6.56	11.14 ± 6.04	0.806

Metabolic SD = Metabolic syndrome; PSA = Prostate-specific antigen; IPSS = International Prostate Symptom Score; QoL = Quality of life; IIEF-5 total, International Index of Erectile Function total score; Qmax, peak flow rate.

MP-24.01, Table 2. Potential Risk Factor for NIH-CPSI Pain Score

	OR (95%CI)
Age	
≤ 60	–
61 ≤ 70	0.559 (0.233 – 1.340)
≥ 71	1.148 (0.530 – 3.850)
IPSS	
Mild	–
Moderate	8.989 (1.056 – 76.539)
Severe	11.359 (1.306 – 98.751)
Metabolic SD	1.193 (0.557 – 2.556)

OR, odds ratio; CI, confidence interval.

MP-24.03

Visual Prostate Score (VPSS) and Maximum Flow Rate (Qmax) in Men with Lower Urinary Tract Symptoms

Ali M, Ather H

Aga Khan University, Karachi, Pakistan

Introduction and Objectives: To determine the relationship between a visual prostate score (VPSS) and Maximum flow rate (Qmax) in men with lower urinary tract symptoms.

Material and Methods: Sixty-seven adult male patients > 40 years of age were included in the study following an informed consent. Following induction a complete clinical history and physical examination was performed. The data was collected on a pre-approved proforma

filled duly by the patient in the clinic or as an in-patient. Qmax and voided volume recorded from the uroflowmetry graph and at the same time VPSS was assessed.
Results: The education level was assessed in various defined groups. Mean age was 66.1 ± 10.1 years (median 68). There were 47.7% uneducated, 2.9% had primary education only, 8.9% had education up to middle level, 10.4% had education up to higher level, 7.4% up to intermediate level, and 22.3% had graduated from university program. The mean voided volume on uroflowmetry was 268 ± 160ml (median 208), the mean Qmax was 9.6 ± 4.96 mls/sec (median 9.0). The mean VPSS score was 11.4 ± 2.72 (11.0). In the univariate linear regression analysis there was strong negative Pearson correlation between VPSS and Qmax (r= -0.848, p<0.001). In the multiple linear regression analysis there was a significant correlation between VPSS and Qmax (β -.466 with (p<0.001) after adjusting the effect of age, voided volume and level of education. Multiple linear regressions analysis done for independent variable and results showed that there was no significant correlation between the VPSS and independent factors included age (p=0.27), LOE (p=0.941) and V.V (p=0.082).
Conclusion: Our study showed a significant negative correlation between VPSS and Qmax. The VPSS can be used in lieu of IPSS score due to its other advantages. Our study proved that VPSS can be completed without assistance by a greater proportion of men even with limited educations.

MP-24.04
Development of Computer-Aided Diagnosis System to Detect Lesions for Voiding Dysfunction Using Cystourethroscopy
Ishii T[1], Teranaka S[1], Nakamura K[1], Naya Y[2], Yamanishi T[3], Igarashi T[1]
[1]Chiba University, Chiba, Japan; [2]Teikyo University Chiba Medical Center, Ichihara, Japan; [3]Dokkyo Medical School, Tochigi, Japan

Introduction and Objectives: Lower urinary tract consists of hollow and tubular organs, which is closing in the continent condition and deformed under internal pressure during micturition. Among various methods, cystourethroscopy constantly provides shape and color information of the urethra together with a role as a potent therapeutic tool. We developed software to generate a panoramic image from cystourethroscopic video image and construct a three-dimensional (3D) model of the intraurethral information for a Computer-Aided Diagnosis (CAD) system to determine candidate lesions for voiding dysfunction, and tested its validity.
Materials and Methods: Cystourethroscopy was performed in nineteen patients with benign prostate hyperplasia around administration of alpha-1 adrenoceptor blockade under approval of local ethic committee. Cystourethroscopic video image was recorded from bladder outlet to the distal part of the verumontanum by slowly withdrawing the scope in about 10 seconds. An opened panoramic image was processed by retrieving and connecting color information on each video frame. At the same time, the reflection intensity of each pixel was measured to estimate the shape of the urethral wall. Using the information, a virtual 3D model of urethra was generated under an assumption that the urethra is a cylindrical organ. The software was designed to call back the video frame by putting a pointer on the panoramic image to identify the region of interest. In addition, fluid dynamics through the 3D model was computed to simulate the urine flow in the prostatic urethra.
Results: 3D image processing was successfully achieved in 17 of 19 patients. In the urine stream simulation, turbulence and vortex formation was observed adjacent to obstacles in 3D model in the 17 patients before therapy, and was diminished after therapy in 9 patients who showed improvement of urine flow. The obstacles can be identified in the panoramic image, and then indicate the "candidate lesion" for voiding dysfunction in the original cystourethroscopic video image.
Conclusion: Processing 3D endoscopic image of the male urethra, linked to the original cystourethroscopic video image would contribute to establish novel therapeutic modality to minimize its drawbacks in patients with voiding dysfunction.

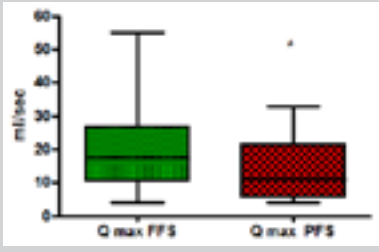
MP-24.05
Urethral Catheter in Urodynamic: Does It Affect the Urine Flow?
Ertemi H[1], Harris M[2], Harris M[2], Kulkarni S[2]
[1]Princess Alexandra Hospital, Harlow, UK; [2]Barking, Havering and Redbridge University Hospitals, London, UK

Introduction and Objectives: The importance of pressure flow studies in the evaluation of patients with LUTS has long been recognized, however the use of urethral catheter during the study can influence the flow rate leading to misinterpretation of the results. Previous research have demonstrated various effects depending on the catheter size, in our work we have evaluated the effect of 8f catheter on the Maximum flow (Q_{max}).
Materials and Methods: Eighty patients were included in the study, of those only 22 passed >150 ml and so were included. The patients underwent urodynamic study and had their Q_{max} measured before and during the study, the results were compared using paired student *t* test.
Results: The means of the Q_{max} in the free-flow study (FFS) and pressure-flow study (PFS) were 19.7ml/sec (range 4-55) and 13ml/sec (range 4-33) respectively. The difference was statistically significant (p=0.004); on the other hand the difference between the voided volume of the FFS and PFS was not statistically significant, (226 and 290 ml respectively; p=0.14). Q_{max} decreased in 73%, increased in 23% and was stable in 4% of cases at the time of pressure flow study.
Conclusion: Our results are in line with previous studies, however we demonstrated that the difference can be statistically significant even with 8F catheter, further work is need to further establish the relation between catheter size and the urine flow.

MP-24.06
Community Management of Male Patients with Lower Urinary Tract Symptoms (LUTS) in the UK
Baker K, Chung L, Nemade H
Basildon and Thurrock University Hospital, Basildon, UK

Introduction and Objectives: Providing a cost-effective and patient-centered service has

MP-24.05, Figure 1.



MP-24.05, Table 1.

Patients's Number	Qmax FFS Ml/Sec	Qmax PFS Ml/Sec	P value	VV FFS	VV PFS	P value
22	19.7+/-2.6	13+/-1.7	0.004	226+/-20.7	290+/-35.6	NS

been a highlighting feature in the UK National Health System. Simple interventions can significantly improve management and reduce unnecessary costs. The cost of treatment for benign prostatic hyperplasia (BPH), the most common cause of LUTS, is more than £180 million each year of which 60% is incurred in secondary care. Eighty percent of male LUTS patients attending primary care would need no further referral on to secondary care with effective management within the primary care setting. We looked into inappropriate referrals and management of LUTS in the community.
Materials and Methods: Information was gathered regarding inappropriate referrals to Prostate assessment clinic at BTUH during the month of October 2013. An audit was then conducted to see whether general practitioners were adhering to NICE guidelines for management of male LUTS and therefore referring appropriately to secondary care. A questionnaire based on the NICE guidelines was developed and distributed amongst local general practitioners.
Results: This audit aimed to have a 100% correct response rate in the following areas: performing a PSA where appropriate (92%), calculating International Prostate Symptom score (50%), offering urinary frequency volume charts (23%) and initiating an alpha blocker prior to referral (79%). The data was analyzed showing that in this small random population, overall, they did not adhere to the recommended pathway.
Conclusion: As the pathway was not being adhered to, an action was agreed upon to produce a local urology pathway highlighting the recommended management. The launch of the local LUTS pathway has been used as an educational tool for fellow GPs, with discussions around practical implementation of the recommendations being discussed at a GP Forum, led by a local urologist. This discussion is aligned with the guideline, which encourages communication and alignment between primary and secondary care in the management of LUTS patients. A re-audit has been commenced to see if the intervention has been effective in ensuring better management of patients and reducing costs in the outpatient setting.

MP-24.07
Alpha-1 Blocker Treatment for Lower Urinary Tract Symptoms Improve the Index of Depression and Anxiety: A Prospective Multicenter Study
Cho I[1], Cho S[1], Cho J[2], Park D[3], Sung D[4], Kim Y[5], Lee G[6]
[1]Inje University Ilsanpaik Hospital, Goyang, South Korea; [2]Hallym University Sacred Heart Hopsptal, Pyungchon, South Korea; [3]CHA Medical University, Seongnam, South Korea; [4]Inha University, Incheon, South Korea; [5]National Health Insurance Corporation Hospital, Goyang, South Korea; [6]Danhook University College of Medicine, Cheonan, South Korea

Introduction and Objectives: We investigated that depression and anxiety could be improved by alpha-1 blocker treatment to patients with lower urinary tract symptoms (LUTS).
Materials and Methods: A total of 201 patients were enrolled. The 96 patients with LUTS (40 ~ 80 years old) were evaluated using the Beck Anxiety Inventory (BAI) questionnaire of the Beck Depression Inventory (BDI) Scale and anxiety and depression degree, international prostate symptom index (IPSS) questionnaire before and after a 12-week administration period. The other 105 patients with no LUTS were evaluated by same methods. They visited our hospital for the health screening and had no administration period. We analyzed the correlation of IPSS, BAI, and BDI score.
Results: The mean IPSS score was 16.8 in the LUTS group while was 4.0 in the control group, was 4.0. The mean BDI and BAI score in the control group was 8.5 and 5.2, respectively, compared to 10.7 and 8.8 in the LUTS group. After a 12-week administration period, the LUTS group's mean IPSS score dropped to 10.3. The mean BDI and BAI score were reduced to 9.0 and 7.1, respectively. IPSS score was significantly correlated with BDI and BAI score in the total 201 patients with the correlation analysis. After treatment, the mean score of IPSS, BDI and BAI shifted to more mild degree (Table 1).
Conclusion: The Patients with LUTS have higher degree of depression and anxiety. Alpha-1 blocker treatment significantly reduces BDI and BAI scores as well as IPSS and life scores in LUTS patients.

MP-24.07, Table 1. The Score Shifting of BDI and BAI after alpha-1 Blocker Treatment

	Degree	Control (n=105)	Pre-Treatment (n=96)	Post-Treatment (n=96)	P value*
IPSS	0-7 mild	105 (100%)	0	35 (36.5%)	0.000
	8-19 moderate	0	71 (74.0%)	55 (57.3%)	
	20-35 severe	0	25 (26.0%)	6 (6.3%)	
BDI	1-10 normal	77 (73.3%)	53 (55.2%)	66 (68.8%)	0.000
	11-16 mood confusion	7 (6.7%)	24 (25.0%)	15 (15.6%)	
	17-20 borderline	2 (1.9%)	8 (8.3%)	4 (4.2%)	
	21-30 moderate depression	19 (18.1%)	9 (9.4%)	10 (10.4%)	
	31-40 severe depression	0	2 (2.1%)	1 (1.0%)	
	41-63 extreme depression	0	0	0	
BAI	0-4 normal	67 (63.8%)	35 (36.5%)	39 (40.6%)	0.000
	5-10 borderline	21 (20.0%)	34 (35.4%)	40 (41.7%)	
	11-20 mild anxiety	14 (13.3%)	20 (20.8%)	12 (12.5%)	
	21-30 moderate anxiety	3 (2.9%)	5 (5.2%)	4 (4.2%)	
	31-50 severe anxiety	0	2 (2.1%)	1 (1.0%)	
	51-99 extreme anxiety	0	0	0	

MP-24.08
A Randomized Control Trial to Assess Efficacy of Diclofenac Suppository during Flexible Cystoscopy on Pain Control: DUF Trail
Nadeem M, Ather M
Aga Khan University, Karachi, Pakistan

Introduction and Objectives: To compare mean VAS for pain during flexible cystoscopy between patients undergoing the procedure with plain gel only and with diclofenac suppository besides plain gel.
Materials and Methods: It is a prospective, randomized, controlled study. A total of 60 male patients with an indication of flexible cystoscopy were enrolled and randomized in two equal groups. In group "A", patients received diclofenac suppository one hour prior to the procedure while group "B" did not receive diclofenac suppository. Both groups received 10 mls of intra-uretheral plain gel for lubrication during flexible cystoscopy. Operating surgeon and pain score assessor were blinded to randomization. Pain score was recorded immediately after the procedure using visual analogue scale. Statistical analyses were performed using chi-Square test and student t-test. Regression analysis was performed to address the confounding variables.
Results: Mean age of the patients was 46.75 years with SD of +/- 16.12 years. Most common indication for flexible cystoscopy was removal of double J stent. Variables including age, duration of procedure, indication of procedure, level of operating surgeon were comparable. Mean Pain score in group A and group B was 3.16+/-1.53 and 4.10+/-1.24 respectively. This difference was found to be statistically significant (p= 0.012). Regression analysis showed

that none of the confounding variable was significantly affecting the pain perception.
Conclusions: Intra Rectal diclofenac Suppository is simple and effective pre emptive analgesia. We recommend its routine use during flexible cystoscopy for better pain control.

MP-24.09
Unexpected Problems in Men Post TUR Prostate

Birring A[1], Bailie J[1], Younis A[2], Jenkins B[3]
[1]James Cook University Hospital, Middlesbrough, UK; [2]Freeman Hospital, Newcastle upon Tyne, UK; [3]Sunderland Royal Hospital, Sunderland, UK

Introduction and Objectives: Patients can find the immediate post-operative period following transurethral resection of prostate (TURP) surgery troublesome. There are few studies in the literature that focus on patients' experiences immediately post-TURP. In this study we determine what complications patients experience in the 6 weeks post-surgery, and establish the impact of TURP on patients' quality of life, symptomatology and sexual function.
Materials and Methods: A validated patient questionnaire was used to collect data. Questionnaires were mailed to 55 patients at six weeks post-TURP surgery.
Results: Forty five out of 55 (81.8%) patients returned the questionnaire. Thirty five patients (77.8%) had no requirement for a urethral catheter after discharge. Three patients (6.7%) were sent home with a catheter that was still in situ 6 weeks post-operatively. Five patients (11.1%) had a catheter in place for less than a month. Fourteen patients (31.1%) visited a doctor at least once because of lower urinary tract symptoms. Overall, 10 patients (22.2%) were prescribed antibiotics. Only 2 of these patients had bacterial growth on urine culture. Three patients (6.7%) needed to be re-catheterised for retention of urine following discharge. Three patients (6.7%) were re-admitted to hospital due to a problem relating to the operation. Thirteen patients (30.2%) leaked troublesome amounts of urine or had to wear pads to keep dry. Ten patients (23.3%) were completely dry following their operation. There was no statistically significant difference between the numbers of patients who were sexually active in the month preceding the operation and those attempting intercourse in the immediate 6 weeks following TURP, 19.5% and 21.4% respectively ($p<0.05$). There was also no significant difference in ability to achieve and maintain erections pre- and post-TURP. Most

MP-24.10, Table 1. Results for Efficacy Variables (FAS)

	Solifenacin 2.5 mg		Solifenacin 5 mg	
	Mirabegron 25 mg (n = 33)	**Mirabegron 50 mg (n = 37)**	**Mirabegron 25 mg (n = 55)**	**Mirabegron 50 mg (n = 93)**
Number of micturitions/24 h, mean ± SD (n)				
Baseline†	10.38 ± 2.128	11.12 ± 2.722	9.81 ± 1.918	10.15 ± 2.331
Change from baseline to EOT	–1.89 ± 1.783*** (33)	–2.36 ± 2.106*** (37)	–1.94 ± 1.792*** (55)	–2.12 ± 2.094*** (93)
Number of urgency episodes/24 h, mean ± SD (n)				
Baseline	2.86 ± 2.433 (30)	4.12 ± 2.586 (36)	2.86 ± 1.997 (49)	3.63 ± 2.846 (90)
Change from baseline to EOT	–1.57 ± 1.382*** (30)	–2.59 ± 2.201*** (36)	–1.93 ± 1.877*** (49)	–2.02 ± 2.392*** (90)
Number of incontinence episodes/24 h, mean ± SD (n)				
Baseline	1.45 ± 1.454 (14)	1.54 ± 1.248 (28)	2.09 ± 2.121 (29)	1.51 ± 1.520 (60)
Change from baseline to EOT –1.07 ± 1.064** (14)		–1.08 ± 1.168*** (28)	–1.32 ± 1.505*** (29)	–1.06 ± 1.055*** (60)
Number of urgency incontinence episodes/24 h, mean ± SD (n)				
Baseline	1.42 ± 1.506 (11)	1.42 ± 1.243 (28)	1.69 ± 1.366 (26)	1.30 ± 1.138 (52)
Change from baseline to EOT	–0.97 ± 0.948** (11)	–1.00 ± 1.089*** (28)	–1.04 ± 1.412*** (26)	–0.94 ± 1.027*** (52)
Number of nocturia episodes/24 h, mean ± SD (n)				
Baseline	1.79 ± 1.075 (28)	1.55 ± 0.783 (29)	1.85 ± 1.006 (50)	1.72 ± 1.084 (81)
Change from baseline to EOT	–0.43 ± 0.847* (28)	–0.31 ± 0.674* (29)	–0.44 ± 0.812*** (50)	–0.60 ± 0.982*** (81)
Volume voided/micturition (mL), mean ± SD (n)				
Baseline†	158.627 ± 47.0511	158.633 ± 43.6678	182.362 ± 56.3405	173.658 ± 47.5973
Change from baseline to EOT	29.865 ± 32.5400*** (31)	33.031 ± 38.2492*** (37)	34.118 ± 32.6790*** (50)	36.957 ± 43.6344*** (93)

*P<0.05; **P<0.01; ***P<0.001; †n = as for FAS; EOT, End of Treatment

men (33 patients, 73.3%) were not concerned by any change in sexual function.
Conclusion: A significant proportion of patients are concerned enough post-TURP surgery to seek medical attention. Appropriately preparing patients for the more minor, but frequently occurring, complications of TURP may help reduce the unnecessary utilisation of antibiotics. This study also presents data relating to sexual activity in the immediate 6 weeks following TURP. This is something that is under-represented in the literature.

MP-24.10
Safety and Efficacy of Mirabegron as Add-on Therapy in Patients with Overactive Bladder Treated with Solifenacin (MILAI Study)
Yamaguchi O[1], Kakizaki H[2], Homma Y[3], Igawa Y[4], Takeda M[5], Nishizawa O[6], Gotoh M[7], Yoshida M[8], Yokoyama O[9], Seki N[10], Okitsu A[11], Hamada T[11], Kobayashi A[11], Kuroishi K[11]
[1]Nihon University, School of Engineering, Koriyama, Japan; [2]Dept. of Renal and Urologic Surgery, Asahikawa Medical University, Asahikawa, Japan; [3]Dept. of Urology, The University of Tokyo Graduate School of Medicine, Tokyo, Japan; [4]Dept. of Continence Medicine, The

MP-24.11, Table 1. Responder Analyses for Micturition Frequency and PROs at End of Treatment

	PBO	MIRA 25 mg	MIRA 50 mg
Micturition frequency normalization	**N=79**	**N=75**	**N=76**
Responders, n (%)	42 (53.2)	32 (42.7)	36 (47.4)
Odds ratio vs. solifenacin 5 mg (95% CI) [p value]	--	--	--
Odds ratio vs. placebo (95% CI) [p value]	--	0.89 (0.45, 1.76) [0.73]	0.88 (0.45, 1.72) [0.70]
≥ 1 PPBC	**N=78**	**N=73**	**N=76**
Responders, n (%)	54 (69.2)	56 (76.7)	60 (78.9)
Odds ratio vs. solifenacin 5 mg (95% CI) [p value]	--	--	--
Odds ratio vs. placebo (95% CI) [p value]	--	1.25 (0.58, 2.71) [0.57]	1.67 (0.77, 3.64) [0.19]
≥ 10 in Symptom Bother	**N=79**	**N=75**	**N=76**
Responders, n (%)	58 (73.4)	63 (84.0)	60 (78.9)
Odds ratio vs. solifenacin 5 mg (95% CI) [p value]	--	--	--
Odds ratio vs. placebo (95% CI) [p value]	--	1.75 (0.75, 4.08) [0.19]	1.25 (0.56, 2.77) [0.59]
≥ 10 in HRQoL	**N=79**	**N=75**	**N=76**
Responders, n (%)	53 (67.1)	43 (57.3)	54 (71.1)
Odds ratio vs. solifenacin 5 mg (95% CI) [p value]	--	--	--
Odds ratio vs. placebo (95% CI) [p value]	--	0.50 (0.24, 1.04) [0.064]	1.24 (0.59, 2.61) [0.57]
	SOLI 2.5 mg + MIRA 25 mg	**SOLI 2.5 mg + MIRA 50 mg**	**SOLI 5 mg + MIRA 25 mg**
Micturition frequency normalization	**N=144**	**N=145**	**N=140**
Responders, n (%)	78 (54.2)	77 (53.1)	73 (52.1)
Odds ratio vs. solifenacin 5 mg (95% CI) [p value]	1.20 (0.72, 2.00) [0.48]	1.11 (0.67, 1.83) [0.69]	1.02 (0.61, 1.69) [0.95]
Odds ratio vs. placebo (95% CI) [p value]	1.36 (0.75, 2.45) [0.31]	1.25 (0.70, 2.25) [0.45]	1.15 (0.64, 2.07) [0.64]
≥ 1 PPBC	**N=141**	**N=143**	**N=136**
Responders, n (%)	105 (74.5)	119 (83.2)	106 (77.9)
Odds ratio vs. solifenacin 5 mg (95% CI) [p value]	1.10 (0.63, 1.92) [0.73]	1.82 (1.00, 3.30) [0.050]	1.45 (0.81, 2.59) [0.21]
Odds ratio vs. placebo (95% CI) [p value]	1.15 (0.60, 2.22) [0.67]	1.90 (0.95, 3.78) [0.070]	1.51 (0.77, 2.98) [0.23]
≥ 10 in Symptom Bother	**N=144**	**N=145**	**N=139**
Responders, n (%)	119 (82.6)	124 (85.5)	119 (85.6)
Odds ratio vs. solifenacin 5 mg (95% CI) [p value]	1.04 (0.55, 1.97) [0.89]	1.21 (0.63, 2.33) [0.57]	1.36 (0.70, 2.66) [0.36]
Odds ratio vs. placebo (95% CI) [p value]	1.64 (0.81, 3.33) [0.17]	1.90 (0.92, 3.92) [0.084]	2.14 (1.02, 4.48) [0.043*]
≥ 10 in HRQoL	**N=144**	**N=145**	**N=139**
Responders, n (%)	105 (72.9)	114 (78.6)	107 (77.0)
Odds ratio vs. solifenacin 5 mg (95% CI) [p value]	1.01 (0.58, 1.77) [0.98]	1.25 (0.70, 2.23) [0.45]	1.41 (0.79, 2.53) [0.24]
Odds ratio vs. placebo (95% CI) [p value]	1.12 (0.58, 2.15) [0.74]	1.39 (0.71, 2.71) [0.34]	1.57 (0.80, 3.07) [0.19]

P values were from logistic regression model with 2 main factors mirabegron dose (0, 25 and 50 mg) and solifenacin dose (0, 2.5, 5 and 10 mg) and their corresponding dose combination interaction term to reflect the factorial design. The model included the main factors of sex, age group, geographic region and baseline measurement as covariate.
*Statistically significantly superior compared to solifenacin 5 mg or placebo ($p<0.05$).

University of Tokyo Graduate School of Medicine, Tokyo, Japan; [5]Dept. of Urology, Interdisciplinary Graduate School of Medicine and Engineering, University of Yamanashi, Yamanashi, Japan; [6]Dept. of Urology, Shinshu University, School of Medicine, Matsumoto, Japan; [7]Dept. of Urology, Nagoya University Graduate School of Medicine, Nagoya, Japan; [8]Dept. of Urology, National Center for Geriatrics and Gerontology, Obu, Japan; [9]Dept. of Urology, University of Fukui Faculty of Medical Sciences, Fukui, Japan; [10]Dept. of Urology, Kyushu Central Hospital of the Mutual Aid Association of Public School Teachers, Fukuoka, Japan; [11]Astellas Pharma Inc, Tokyo, Japan

SOLI 2.5 mg	SOLI 5 mg	SOLI 10 mg
N=73	**N=146**	**N=75**
40 (54.8)	70 (47.9)	41 (54.7)
--	--	1.29 (0.69, 2.39) [0.42]
1.49 (0.74, 2.99) [0.26]	1.13 (0.63, 2.04) [0.69]	1.45 (0.73, 2.89) [0.29]
N=75	**N=147**	**N=73**
51 (68.0)	107 (72.8)	62 (84.9)
--	--	2.26 (1.04, 4.95) [0.040*]
0.86 (0.41, 1.79) [0.69]	1.04 (0.55, 1.99) [0.90]	2.36 (1.01, 5.55) [0.048*]
N=77	**N=150**	**N=75**
66 (85.7)	122 (81.3)	64 (85.3)
--	--	1.42 (0.63, 3.20) [0.40]
1.97 (0.83, 4.71) [0.13]	1.57 (0.78, 3.16) [0.20]	2.24 (0.94, 5.34) [0.070]
N=77	**N=150**	**N=75**
57 (74.0)	109 (72.7)	56 (74.7)
--	--	1.04 (0.52, 2.08) [0.92]
1.26 (0.59, 2.68) [0.55]	1.11 (0.58, 2.13) [0.75]	1.15 (0.53, 2.49) [0.72]
SOLI 5 mg + MIRA 50 mg	**SOLI 10 mg + MIRA 25 mg**	**SOLI 10 mg + MIRA 50 mg**
N=146	**N=78**	**N=79**
90 (61.6)	51 (65.4)	46 (58.2)
1.91 (1.14, 3.21) [0.015*]	2.06 (1.11, 3.84) [0.023*]	1.54 (0.84, 2.84) [0.16]
2.16 (1.18, 3.94) [0.013*]	2.33 (1.16, 4.66) [0.017*]	1.74 (0.88, 3.45) [0.11]
N=144	**N=76**	**N=78**
119 (82.6)	63 (82.9)	59 (75.6)
2.02 (1.11, 3.66) [0.021*]	1.64 (0.79, 3.40) [0.19]	1.12 (0.57, 2.19) [0.74]
2.11 (1.06, 4.19) [0.034*]	1.71 (0.76, 3.84) [0.20]	1.17 (0.55, 2.49) [0.68]
N=146	**N=78**	**N=78**
129 (88.4)	69 (88.5)	65 (83.3)
1.66 (0.83, 3.32) [0.15]	1.55 (0.67, 3.59) [0.31]	0.91 (0.42, 1.95) [0.81]
2.61 (1.22, 5.58) [0.013*]	2.43 (0.99, 5.97) [0.053]	1.43 (0.63, 3.26) [0.39]
N=146	**N=78**	**N=78**
123 (84.2)	62 (79.5)	64 (82.1)
2.21 (1.19, 4.09) [0.012*]	1.43 (0.70, 2.90) [0.32]	1.51 (0.72, 3.14) [0.27]
2.45 (1.22, 4.94) [0.012*]	1.59 0.72, 3.47 [0.25]	1.67 (0.74, 3.75) [0.21]

Introduction and Objectives: To evaluate safety and efficacy of mirabegron as add-on therapy in patients with OAB treated with solifenacin.

Materials and Methods: This 16-week, multicenter, open-label Phase IV study, performed in accordance with ICH-GCP, enrolled patients who had been treated with solifenacin at a stable dose of 2.5 mg or 5 mg for at least 4 weeks, and who had an overactive bladder symptom score (OABSS) total score of ≥3 points and an OABSS Question 3 score of ≥2 points. In addition to solifenacin 2.5 mg or 5 mg, patients initially received mirabegron at a dose of 25 mg but this dose could be increased to 50 mg at week 8 if patients met dose escalation criteria. Efficacy was evaluated based on patient diary and changes in overactive bladder questionnaire short form (OAB-q SF) score. Safety assessments were based on AEs, laboratory values, vital signs, 12-lead ECG, corrected QT (QTc) interval, and postvoid residual volume.

Results: Of 223 patients entering the treatment period, mean age was 64.6 years, and approximately 55% were aged ≥65 years. At end of treatment, significant improvements from baseline were seen in all efficacy endpoints in all groups (Table 1). Overall incidence of drug-related TEAEs was 23.3%. Almost all TEAEs were mild or moderate. The most common TEAE was constipation; incidence in groups where mirabegron dose was increased was similar to that in mirabegron dose-maintained groups. Changes in post-void residual volume, QTcF interval, pulse rate, and blood pressure were clinically insignificant and there were no cases of urinary retention.

Conclusion: Add-on therapy with mirabegron once daily for 16 weeks, with an optional dose increase from 25 to 50 mg at week 8, was well tolerated and significantly improved OAB symptoms from baseline in patients with OAB treated with solifenacin 2.5 or 5 mg once daily.

MP-24.11

Combination Treatment with Mirabegron and Solifenacin in Patients with Overactive Bladder: Exploratory Responder Analyses of Efficacy and Evaluation of Patient Reported Outcomes from a Randomised, Double-Blind, Dose-Ranging, Phase 2 Study (Symphony)

Abrams P[1], Kelleher C[2], Staskin D[3], Kay R[4], Martina R[5], Newgreen D[5], Paireddy A[5], van Maanen R[5], Ridder A[5]

[1]Bristol Urological Institute, Bristol, UK; [2]Guys and St. Thomas' Hospitals, London, UK; [3]Tufts University School of Medicine, Boston, USA; [4]RK Statistics Ltd, Bakewell, UK; [5]Astellas Pharma BV, Leiden, The Netherlands

Introduction and Objectives: To assess responders for incontinence episodes and micturition frequency and patient reported outcomes (PROs) with mirabegron and solifenacin monotherapy and combination therapy in patients

with overactive bladder (OAB).
Materials and Methods: Adult patients with symptoms of OAB for ≥ 3 months were randomized to one of 12 treatment groups for 12 weeks (placebo; solifenacin 2.5/5/10 mg or mirabegron 25/50 mg alone or in combination). A responder for micturition frequency was defined as a patient with ≥ 8 micturitions/24 h at baseline and ≤ 8 micturitions/24 h post-baseline and a reduction from baseline. There were two responder analyses for patients who were incontinent at baseline: (a) proportion who became continent during treatment and (b) proportion who had a ≥ 50% reduction in incontinence episodes/24 h during treatment. Responder analyses were also performed for PROs (a) Patient Perception of Bladder Condition (PPBC), based on a minimally important difference (MID) of 1 point; (b) the symptom bother score and (c) health related quality of life (HRQoL) subscales of the OAB-q, based on a MID of 10 points.
Results: Micturition frequency normalization increased with increasing dose of mirabegron monotherapy, and was highest among the 5 + 50 mg and 10 + 25 mg combinations. Due to the low number of incontinent patients (13-35 patients/group), and low baseline incontinence episodes, no meaningful conclusions can be drawn from the incontinence responder analyses. Combination therapy, mirabegron 25 and 50 mg, and solifenacin 10 mg monotherapies were associated with higher responder rates vs. solifenacin 5 mg and vs. placebo in terms of PPBC, symptom bother score, and HRQoL (Table 1).
Conclusions: Combination therapy with mirabegron and solifenacin is associated with higher responder rates in terms of micturition frequency normalization and clinically relevant PRO measurements of total HRQoL, PPBC and symptom bother compared with solifenacin 5 mg monotherapy.

Unmoderated Videos
Monday, October 13 -
Tuesday, October 14
0900-1600
Wednesday, October 15
0900-1500

VID.01
Open Right Adrenalectomy: An Extreme Case
Coelho H, Marconi L, Furriel F, Figueiredo A, Mota A
Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal

Introduction and Objectives: Adrenocortical cancers are uncommon malignancies that can have protean clinical manifestations. Adrenocortical masses are common; autopsy studies show that approximately 5-15% of the general adult population may have adrenal incidentalomas. Findings from abdominal CT scans suggest that the prevalence rate is 1-5%. Regardless of size, approximately 1 per 1500 adrenal tumors is malignant.
Materials and Methods: We present a case of a 48 year old female patient referred to our urology department. A right lombar mass was palpated in routine medical examination. She performed a RMI which revealed a 22 cm right adrenal mass that compressed the right kidney and adjacent structures. No venous thrombus or metastases were reported.
Results: The patient was submitted to an open adrenalectomy through a right hemi-chevron incision. Careful dissection of the mass was performed, with intra-operatory finding of a venous thrombus which spread to the vena cava. Cavectomy and segmentar excision of the vena cava was performed with complete excision of the venous thrombus. The post operative period was uneventful. The pathological report revealed a 2.6 Kg and 25 cm long adrenocortical carcinoma.
Conclusion: An extreme case of an adrenocortical cancer which was managed with open surgery with a successful outcome.

VID.02
Kidney Hydatid Cyst: Surgical Excision
Grenha V, Figueiredo A, Godinho R, Antunes H, Retroz E, Mota A
Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal

Introduction and Objectives: Cystic echinococcosis is a parasitic disease caused by *Echinococcus granulosus*. Urinary tract involvement develops in only 2-4% of all cases, and isolated renal cysts are extremely rare. Kidney hydatid cysts must be excised, given the risk of rupture with anaphylactic shock and death of the patient. The objectives of this video are to demonstrate the excision of a large kidney hydatic cyst and show how precautious we should be to avoid cyst rupture, protecting the patient of any risk.
Materials and Methods: We report an asymptomatic 56 years old man with several co-morbidity, with a CT scan finding of an isolated kidney hydatid cyst with 9.5 x 8.4 cm. Open surgery was performed, with careful dissection, considering the risk of intraoperative cyst rupture and severe anaphylactic shock.
Results: Surgical time was 85 minutes with no intraoperative complications. Blood loss was about 100 mL. The abdominal drain and the Foley catheter were removed after 24 hours from surgery.
Conclusion: Kidney hydatid cyst surgical excision is as rare and risky procedure. Good visualization and careful dissection are fundamental to safety and success of surgery.

VID.03
Robotic Assisted Adrenelectomy for More Than 5 cm Adrenal Tumor
Kumar M, Mishra S, Ganpule A, Sabnis R, Desai M
Muljibhai Patel Urological Hospital, Nadiad, India

Introduction and Objectives: Laparoscopic adrenelectomy is the Gold standard for small to moderate sized adrenal tumors worldwide. But due to its limitations laparoscopic adrenelectomy was done usually in adrenal tumors less than 5 cm. With its advantages robotic assisted adrenelctomy can be used for tumors greater than 5 cm. We present a video of robotic adrenelctomy for a 6.8 cm adrenal tumor.
Materials and Methods: A 56 year male hypertensive on evaluation of right flank pain was found to have right adrenal mass of 68 x 44 mm on CT. He underwent robotic adrenelctomy. Standard 4 ports placed. Robot was docked and after mobilizing the liver and reflecting the bowel down, the peritoneum over the adrenal gland opened making sure not to open the gerota and the dissection is proceeded extra gerotal. The adrenal vein is clipped and ligated and the dissection proceeded in the plane between the kidney and adrenal. The adrenal dissected all around and removed by a right iliac fossa incision. Post operative period was uneventful. The hemoglobin drop was 0.2 gm and patient was discharged on the third day.
Results: Between March 2012 and December 2013 we did 8 robotic adrenelectomy. The average age is 39 years with average size of 74 x 51 mm and mean hospital stay of 3.8 days, hemoglobin drop of 1.42 gm and mean operative time of 162 min.
Conclusion: Robotic assisted adrenelectomy is safe in adrenal tumors greater than 5 cm.

VID.04
Complete Off-Clump Zero Ischemia Partial Nephrectomy under Normal Blood Pressure: Different Layers of Incision for Clear Cell Carcinoma and for Papillary Carcinoma
Yanaihara H, Ogihara K, Kaguyama H, Hanashima F, Sakamoto H, Aonuma K, Matsuda K, Nakahira Y, Asakura H
Saitama Medical University, Iruma, Japan

Introduction and Objectives: Zero Ischemia partial nephrectomy (ZIPN) is a novel approach, which can avoid unnecessary renal damage during procedure. Among several different approaches of ZIPN, complete off-clump is the most challenging technique especially under normal blood pressure. We demonstrate different layer of incision for clear cell carcinoma and for papillary carcinoma.
Materials and Methods: Subjects are a 59 year old male with T1a clear cell carcinoma at mid portion and an 83 year old male with T1b papillary carcinoma in solitary kidney. RENAL nephrometry score were 8 and 6 respectively. Both tumors are removed by complete off clump ZIPN.
Results: Both tumors were successfully removed with minimum blood loss. Enucleation layer was selected for clear cell carcinoma, but the incision was made in renal parenchyma with safety margin for papillary carcinoma because no obvious tumor capsule was observed in CT scan. All procedures were done under normal blood pressure.
Conclusion: We have already experienced complete off clump ZIPN. ZIPN can be safely done for the tumor with capsule. Dissecting enucleation layer may contribute less blood loss and accurate removal of tumor, but enucleation may be difficult for the tumor without capsule especially for papillary carcinoma. We used different layer for papillary carcinoma in ZIPN under complete off clump situation. Complete off clump partial nephrectomy under normal blood pressure could be proposed for various renal tumors even without tumor capsule.

VID.05
Endoscopic Assistance for Robotic Reconstruction of Ureteral Strictures: Our Approach
Young M, Manduley A, Bodden E, Ruiz L, Aleman F. E
Hospital Nacional, Panama, Panama

Introduction and Objectives: The treatment of ureteral strictures often requires reconstruction to restore patency and normal renal drainage. Assessing the diseased ureteral segment is important. The length and location of the stricture is paramount for management, preoperative counseling and planning. Robotic surgery offers increase visibility (3D magnification), enhance range of motion and dexterity. Several institutions have reported the use of the robotic

platform in ureteral reconstruction. Location of the ureteral stricture can be challenging during robotic surgery. We present our approach combining ureteroscopic assistance during robotic-assisted laparoscopic ureteroureterostomy.
Materials and Methods: A 46 years-old female obese patient with a history of a severe proximal-ureteral stricture. She underwent seven endoscopic surgeries in the past 20 years in her right kidney, for the treatment of stones and lately the stricture. In this case we had to manage the stricture with ureteral stenting for 24 months because of a new onset haematologic malignancy. Preoperative CT scan showed a 1 cm proximal-ureteral stricture and renogram was compatible with obstruction. Endoscopic evaluation was negative for malignancy. We scheduled the patient for a robotic ureteral stricture resection and ureteroureterostomy.
Results: In order to locate the stricture we started the procedure in lithotomy position and placed a ureteral sheath just distal to the sclerosis, under fluoroscopic guidance. Afterwards, we positioned the patient in right over-the-flank lateral position, without flexing the bed, to avoid stretching the ureter. Three robotics trocars were used, and two 12 mm assistance ports. We incised the line of Toldt, reflecting the right colon. At this time, with turned-off light source of the robotic endoscope, and introduced an ureteroscope through the ureteral sheath to identify the ureter and locate of the exact position of the stricture. The ureter was dissected and the stricture transected. A 4-0 poliglycolic interrupted suture was used for the reconstruction. Ureteral stent was removed in six weeks post-operatively. Post-operative renogram was normal.
Conclusions: Location of the diseased ureter and determination of the length of the potential defect to be bridged is paramount for preoperative planning. Our approach for endoscopic assistance at the time of robotic surgery for complex reconstructive cases is feasible and reproducible.

VID.06
Combined Open and Robotic Neobladder: Advantages of Both Approaches
Otano N[1,2], Jairath A[1], Sabnis R[1], Desai M[1], Mishra S[1]
[1]Muljibhai Patel Urological Hospital, Nadiad, India; [2]Hospital Universitario de Caracas, Caracas, Venezuela

Introduction and Objectives: The use of the robotic system for radical cystectomy offers many advantages. Yet, constructing the urinary diversion by this approach requires the development of particular skills and the learning curve is still to be determined. We want to present how combining the robotic and the open approaches the surgeon can maintain the outcomes while developing the technique for the intracorporeal urinary diversion.
Materials and Methods: Male 59 years old patient with recurrent urothelial bladder carcinoma with squamous differentiation (T1G3). CT demonstrates bulky bladder tumor in right lateral wall and enlarged iliac lymph nodes. Robotic radical cystectomy and bilateral extended lymph node dissection (Da Vinci Si Surgical System®) were performed in the extended Trendelenburg position. Frozen sections of distal ureters and proximal urethra were negative. Modified Pfannenstiel incision was made to retrieve the specimens and create the ileal neobladder and the uretero-ilieal anastomosis. Wound was closed and the robot redocked to complete the neobladder-urethral anastomosis over a Foley catheter. Final histology reported urothelial high grade carcinoma involving lamina propia, negative surgical margins and 34 lymph nodes free of tumor (pT1N0).
Results: By the date we have performed 7 cases with this combined technique. The mean operative time has been 312 ± 44 min with a blood loss of 132 ± 28 cc. The time to orally allow was postoperative day 4 in all but one patient who had paralytic ileus. Another patient presented an isolated episode of fever; both complications were managed conservatively. The mean hospital stay was 11 ± 2.5 d. Foley catheter and DJ stents were removed on post-operative day 21 after cystogram was performed showing good capacity rounded-shape neobladder without leak. Patients are fully continent and incisions healed uneventfully.
Conclusion: Combining open and robotic approaches to create the neobladder and construct the ileo – urethral anastomosis offers the advantages of both procedures and improves the outcomes in the early learning curve.

VID.08
Holmium Laser Enucleation (HoLEP) of a Large Prostate
Claici D
Center for Urology and Laser Timisoara, Timisoara, Romania

Introduction and Objectives: Over the past decade, urologists have witnessed an expansion in the number of various techniques used for the treatment of benign prostatic hyperplasia, especially in the arena of laser surgery. The use of neodymium: yttrium aluminum garnet (Nd:YAG) laser technology in treating benign prostatic hyperplasia (BPH) was initially described in 1992 by Costello and colleagues, representing the first published description of laser prostatectomy. Shortly thereafter, Gilling and colleagues described the use of holmium: YAG (Ho:YAG) in the ablation of prostate tissue, and although holmium laser technology had well-established applications in treating urinary calculi, this was its first application in treating the prostate. They developed a combination approach using holmium to create a channel in the prostate and the Nd:YAG to coagulate the prostate (holmium laser ablation of the prostate, or HoLAP). However, they discovered that holmium could be used alone and had fewer side effects, but the process was slow and tedious with the 60 W laser unit currently available. This group then expanded on the technique by combining holmium laser resection of the prostate (HoLRP) with mechanical morcellation (holmium laser enucleation of the prostate, or HoLEP). Since then, a plethora of studies have been published touting the procedure and it has slowly gained popularity, particularly outside the United States. Outcomes have been as good as traditional methods, with recently published 10-year data showing sustained results over time. HoLEP has distinct advantages over other surgical approaches, including efficacy despite prostate size, low morbidity, and shorter hospitalizations.
Materials and Methods: In Romania, the first center for HoLEP was established in Timisoara in 2010. Since then our experience grew steadily to over 100 laser prostatectomies and a number of laser urethrotomies and bladder tumors as well as bladder stones. In this video we present a 61 years old patient with a large prostate.
Results: The entire procedure (HoLEP) lasted for 87 minutes and the weight of the enucleated prostatic tissue was 149 gr. The subsequent pathology report showed that it was a benign hyperplasia.
Conclusions: We strongly believe that HoLEP would become the new "golden standard" in the surgical treatment of BPH.

VID.09
Holmium Laser Enucleation of the Prostate (HOLEP) for Recurrent/ Residual Prostate Adenoma after Previous Transurethral Prostate Surgery: Technical Consideration
Elshal A, Mekkawy R, Elnahas A, Nabeeh A
Mansoura Urology and Nephrology Center, Mansoura, Egypt

Introduction and Objectives: Holmium laser enucleation of the prostate (HOLEP) technique entails use of the laser energy to cut the prostatic tissue to reach the native anatomical plane between the prostate adenoma and surgical capsule and then to peel each prostatic lobe from the capsule. Following transurethral prostate surgery, prostatic anatomy is disturbed and the plane of enucleation is theoretically harder to access. Recently two reports came out to show the feasibility of doing HOLEP after previous transurethral prostate surgery with equivalent outcome to primary HOLEP with preserved advantages of HOLEP procedure.
Materials and Methods: The surgical HOLEP video database of our hospital was reviewed for cases that were operated for recurrent

adenoma after previous transurethral prostate surgery (Secondary HOLEP). Single surgeon (AME) performed the procedures. The videos were reviewed for relevant technical points during secondary HOLEP procedure. Seventy years-old male presented with recurrent LUTs (lower urinary tract symptoms), five years after TURP (transurethral resection of the prostate). HOLEP procedure was performed for an estimated prostate size of 108ml while on ongoing clopidogrel.

Results: The procedure was performed in 80 minutes with retrieval of 70gm prostate tissue. The Foley catheter was removed at the first postoperative day, and the patient was discharged uneventfully. The technique entails identification of the anatomical landmarks e.g; bladder neck, Veru Montanum and the external urethral sphincter. Then after, the obstructing adenoma is delineated. Laser incision starts at the bladder neck at the deepest groove with shortest way to cut to the capsule. The incision is extended distally just lateral to the Veru followed by development of the plane of enucleation between the adenoma and the surgical capsule bluntly using the tip of the resectoscope and the beaks. To keep going in the plane of enucleation, rotating hand movement is emphasized while dissecting the adenoma from the capsule. Morcellation was performed at the conclusion of the procedure with no added difficulty.

Conclusion: Secondary HOLEP procedure presents more technical challenge than primary HOLEP. Such challenges should be kept in mind while sticking to the anatomical landmarks, define target adenomas with identification of the native plane between the adenoma and the surgical capsule. Despite challenges when enucleating recurrent or residual adenomas, Secondary HOLEP is a feasible and safe procedure.

VID.10

Holmium Laser Enucleation for a 560cc Prostate

Shaw G[1,2], **Aho T**[2]

[1]Cambridge University, Cambridge, UK; [2]Cambridge University Hospitals NHS Trust, Cambridge, UK

Introduction and Objectives: Holmium laser enucleation of the prostate has become widely accepted as a minimally invasive treatment for benign prostatic hyperplasia. Surgery for extremely large prostate glands is associated with relatively poor outcomes and technical difficulty.

Materials and Methods: Here we present a video demonstrating treatment of a prostate of 560 cubic centimetres volume by holmium laser enucleation of the prostate. A 66 year-old man presented with intractable visible haematuria secondary to a massively enlarged prostate. After failed conservative measures the patient proceeded to HOLEP. The prostate was enucleated successfully and the dismembered prostate lobes placed in the bladder. Morcellation was very slow due to the fibrous nature of the prostate tissue. We opted to avoid cystotomy and instead irrigated the bladder with normal saline for 4 days. Following irrigation cystocopic morcellation was performed. At this stage the tissue was soft and the procedure completed easily.

Results: The patient was discharged home on the 3rd postoperative day. The enucleation time was 1 hour 40 minutes. The first attempt at morcellation removed 188g in 2 hours. The second morcellation removed the remaining 230g in 1 hour. All tissue was benign and was predominately fibromuscular stroma. The patient developed a urethral stricture at 4 months follow-up which was treated with optical urethrotomy. At last follow-up his IPSS score was 0/35 and his bother score 0/6. He reported no incontinence.

Conclusion: Holmium laser enucleation is a safe and effective treatment for symptomatic massive benign prostatic enlargement. Irrigation can be used to soften fibrous tissue that is resistant to morcellation and avoid cystotomy for removal of prostate tissue from the bladder.

VID.11

Technique for Harvest of Fascia Lata and Anterior Repair Wish Fascial Bolster

DeLong J, McCammon K

Eastern Virginia Medical School, Norfolk, USA

Introduction and Objectives: Bothersome pelvic organ prolapse is a significant problem for many women. With recent FDA warnings surrounding vaginal mesh placement, alternative approaches and materials are necessary. Failure rates of primary repair for anterior and apical prolapse are high, thus interposition of a graft material is desirable. Autologous fascia lata represents a viable option for women who do not wish to undergo mesh placement, or who are not candidates for synthetic grafts. It is also appropriate for use in underdeveloped or underserved regions that do not have access to mesh or other tissues.

Materials and Methods: A 46-year-old female presented to our clinic with a symptomatic cystocele. She did not wish to undergo placement of vaginal mesh, and was counseled to undergo harvest of fascia lata and anterior repair. In this video we present our technique for harvest of autologous fascia lata and anterior repair for the patient with bothersome vaginal vault prolapse.

Results: This video represents a detailed, step-by-step technique for harvest of fascia lata and anterior repair with fascial bolster. There were no intraoperative or postoperative complications. Vaginal packing and Foley catheter were left in overnight. The patient was admitted for overnight observation, and released the following day after passing a void trial. She continues to do well, and has no functional deficit following harvest of the fascia lata.

Conclusions: Many women do not wish to undergo placement of vaginal mesh, are not candidates for synthetic material, or do not have access to the products. In appropriate patients, harvest of autologous fascia lata and anterior repair is a viable option with low morbidity and high patient satisfaction.

VID.12

Endoscopic Removal of the Intravesical Arms of a Cystocele Mesh

Bazine K, Boukaidi Laghzaoui O, Asseban M, Ammani A, Qarro A, Alami M, Beddouch A**, Lezrek M**

Dept. of Urology, Military Hospital Moulay Ismail, Meknes, Morocco

Introduction and Objectives: We present a video of a transurethral complete removal of the right lateral arms of a cystocele mesh, which were passed through the bladder wall. The intravesical portion of the mesh was cut-off, using laparoscopic scissors, and then extracted.

Materials and Methods: A 54-year-old female was referred to our department because of persistent mild hematuria, after cystocele surgery. Two weeks earlier, she had a cystocele synthetic repair, with a trans-obturator 4 arms polypropylene mesh. Clinical examination noted a marked vaginal tenderness. Diagnostic cystoscopy revealed intravesical mesh perforation, less than 1 cm lateral of the right ureteral orifice. Under spinal anesthesia in the lithotomy position, cystoscopy is performed using an 18 Fr nephroscope, without its 20.8 Fr outer sheath. A 5 mm laparoscopic shears are advanced beside the nephroscope, through urethra. Both arms of the mesh are cut-off at the mesh junction. A strong alligator forceps is advanced through the working port of the nephroscope and both right trans-obturator arms are completely removed. Then, an 18 Fr Foley catheter is inserted.

Results: The transurethral total removal of the right arms of the polypropylene mesh was possible in 40 min. the Foley catheter was removed the 10th postoperative day. No complication was noted, especially, no vaginal fistula or infection. The patient is asymptomatic with no cystocele recurrence after a follow-up of 40 months.

Conclusion: A good bladder dissection and carful placement of the trans-obturators mesh are needed to avoid bladder injury. Caution should be exercised concerning cases with persisting lower urinary tract symptoms following mesh vaginal surgery, due to the possibility of the presence of an intravesical mesh. If there is a bladder mesh perforation, the transurethral route can be easily performed and might be less invasive, with low morbidity, than open surgery.

VID.13

How to Self-Tailor a 15/15 cm Polypropylene Monofilament Mesh for Stress Urinary Incontinence and/or Vaginal Prolapsed

Lezrek M, Boukaidi Laghzaoui O, Bazine K, Asseban M, Kasmaoui E, Beddouch A, Alami M
Dept. of Urology, Moulay Ismail Military Hospital, Meknes, Morocco

Introduction and Objectives: We present video about ideas of how to self-tailor a 15/15-cm polypropylene mesh for the management of stress urinary incontinence and/or vaginal prolapsed.
Materials and Methods: For economic reason we use a polypropylene monofilament mesh of 15/15-cm, for transobturator tape treatment of stress urinary incontinence and for cystocele synthetic repair. For the sub-urethral sling, usually, we use a 15/1-cm tape, cut from one side of the 15/15-cm polypropylene monofilament mesh. Otherwise, for more length the tape can be cut in the diagonal of the square. Hypothetically, more shapes can be used for a longer tape: U-shape, helicoids-shape… A vaginal incision, under the mid-urethra, is performed and then the mesh is implanted with the transobturator outside-in technique. The cystocele mesh is tailored from the remaining 14/15 cm polypropylene mesh, with 2 or 4 arms. A transversal vaginal incision is performed 1 cm above the cervix. The vaginal wall is dissected from the bladder. The cystocele mesh is placed through the vaginal incision and the arms are placed with the transobturator outside-in technique. Even a 6 arms mesh can be tailored. The 2 posterior arms are passed through the utero-sacral ligaments on each side of the cervix, then they can be fixed to the ischial spine and /or the sacrospinal ligament, to repair the central compartment with the suspension of the uterus.
Results: The use of self-tailored polypropylene mesh is possible for using as sub-urethral sling for urinary incontinence. In addition, it can be used for the transobturator cystocele synthetic repair. A 15/15 cm mesh was sufficient for both repairs. No infectious complication or mesh erosion was noted. The great benefit of this self-tailored mesh is the economic gain, since in our experience, the 15/15 cm polypropylene mesh is much cheaper (6 or 10) than the industrial tapes or cystocele mesh.
Conclusion: The use of a self-tailored mesh is possible, and safe for the transobturator repair of stress urinary incontinence and cystocele synthetic repair. In addition, it has a real economic benefit compared to the usual meshes.

VID.14

Zero-Ischemia Laparoscopic Partial Nephrectomy of a Highly-Complex Renal Mass with Selective Vascular Dissection

Marconi L**, Coelho H**, Figueiredo A, Dinis P, Mota A
Dept. of Urology and Renal Transplantation, Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal

Introduction and Objectives: One of the latest advances to minimize the deleterious impact of warm ischaemia during partial nephrectomy is zero-ischemia partial nephrectomy which allows excision of even technically challenging tumours without hilar clamping. We present a video of a zero-ischemia, laparoscopic partial nephrectomy of a highly-complex pT1b RCC with selective vascular dissection guided by 3D CT-angiogram.
Materials and Methods: A 45 year old patient, asymtomatic, with a 4.6cm left renal mass, totally endophytic, invading the renal sinus (R.E.N.A.L. 10X) was submitted to a laparoscopic, 3 port, transperitoneal partial nephrectomy. After reconstruction of the tridimensional (3D) renovascular anatomy of the tumor by ultra fine CT-angiogram we performed a clampless partial nephrectomy with anatomic dissection of the tumor specific arteries and vein, maintaining normal perfusion of the remaining kidney. Pelvicalycial system suture repair was required. Hemostasis and tissue sealing were complemented with a surgical patch coated with coagulation factors.
Results: The operating time was 175 minutes with estimated blood loss of 350ml. No peri- or postoperative complications occurred. Pathology revealed a clear cell renal cell cancer, 4.3cm, pT1b with negative surgical margin. The patient was discharged at 2nd postoperative day. CT scan at 6 month follow-up was negative for recurrence.
Conclusion: Three dimensional reconstruction of the renovascular anatomy is an important method for the development of a pre-operative strategy of microdissection, to define the exact nephrotomy location and to accurately interpret the intraoperative laparoscopic findings. This technique represents a step in the continuum toward the goal of eliminating surgical ischemia, in highly-complex renal masses, maximizing renal function and allowing safe tumor ressection of complex masses.

VID.15

Usefulness of Flexible Ureteroscopy and Holmium Laser Ablation in the Approach of Renal Pelvis Tumors

Otta R, Diego V, Celada G, Acosta M, Brime R, Fernández I, Olivier C
Hospital Universitario de La Princesa, Madrid, Spain

Introduction and Objectives: Renal pelvis tumor is an infrequent pathology which most effective treatment is radical nefroureterectomy with excision of the bladder cuff. In some cases such as monorenal patients or the presence of bilateral tumor a conservative treatment can be pursued such as percutaneous resection or endoscopic ablation. We present the case of an 80 years old man with a personal history of high blood pressure and two stroke episodes, who has right renal mass and a left renal pelvis tumor. Due to the coexistence of a contralateral renal tumor we attempted a conservative approach. We avoided percutaneous approach because of a high grade tumor suspicion (positive cytology) therefore we decided to practice an endoscopic ablation with laser holmium. Our objective is to describe a conservative approach in patients with renal pelvis tumor in whom nephroureterectomy may lead to an anephric state.
Materials and Methods: At first we proceeded to perform a flexible ureteroscopy and found a 2.5cm renal pelvis tumor. We took a superficial biopsy and we used the Holmium laser to photocoagulate the tumoral tissue. Then we performed a biopsy of the base. A CT control was done after first surgery and a significant mass reduction was observed. Fifteen days after the first uretheroscopy we proceeded to reevaluate using the same method and photocoagulated the residual lesions.
Results: The patient had a successful recovery. The pathological analysis rendered a low grade urothelial carcinoma. The patient is alive pending to treat the contralateral renal tumor.
Conclusion: We describe an alternative minimally invasive therapeutical approach for renal pelvis tumors in which nephroureterectomy may lead to an anephric state.

VID.16

Laparoendoscopic Single-Site Surgery (LESS) Sacrocolpopexy

Abdel-Karim A, Mahfouz W, Elmissery M, Aboelfotoh A, Moussa A, Elsalmy S
Alexandria University, Alexandria, Egypt

Introduction and Objectives: The applications of LESS as an option of treatment of various urologic pathologies are increasing. In this video we present the technique of LESS sacrocolpopexy for treatment of uterine prolapse in an obese patient.
Materials and Methods: The case that we present in this video is 41 years old female that was complaining of vaginal bulge, dyspareunia and stress urinary incontinence (SUI). She was G4P2+2. Her BMI was 32.5. She gave a history of hypertension, diagnostic laparoscopic for ovarian cysts and vaginal surgery for treatment of SUI using an autologus anterior vaginal wall flap in year 2000. Clinical examination of the patient revealed the presence of grade 2 uterine prolapse. For this patient, LESS sacrocolpopexy was done using the R-port, that was inserted through 1.5 cm skin incision at the inferior edge of the umbilicus as well as both pre-bent and straight instruments were used. A rectangular polypropylene mesh (2 x 5 cm) was used for

fixation of the upper part of the posterior vaginal wall to the periosteum of sacral promontory using zero PDS sutures. Hand-free intracorporeal suturing was used. TOT for SUI was done after finishing LESS sacrocolpopexy.
Results: Operative time was 135 minutes. There was no conversion to open surgery or conventional laparoscopy. Blood loss was less than 50 c.c. No extra-port was added. There were no intraoperative or postoperative complications. Postoperative hospital stay was 1 day. Follow-up of the patient for 1 year showed complete clinical cure with no recurrence of her uterine prolapse and invisible umbilical scar.
Conclusions: LESS sacrocolpopexy is technically feasible, safe and effective procedure for treatment of uterine prolapse with significant low morbidity.

VID.17
Laparoendoscopic Single-Site Surgery (LESS) Dismembered Pyeloplasty in a Child
Abdel-Karim A, Moussa A, Elmissery M, Aboelfotoh A, Mahfouz W, Elsalmy S
Alexandria University, Alexandria, Egypt

Introduction and Objectives: Although there are increasing reports in the literature about role of LESS as an option for treatment of different urologic pathologies, the applications of LESS in pediatrics are still lacking. We present a video that shows the technique of LESS dismembered pyeloplasty in a child.
Materials and Methods: This is a 10-year old boy that was presented with recurrent left flank pain. His ultrasound showed left hydronephrosis and dilatation of the left renal pelvis. His intravenous urography showed left advanced hydronephrosis and left ureteropelvic junction obstruction (UPJO). LESS pyeloplasty was done through 2-cm umbilical skin incision where the Covedien port was inserted. We used both articulating and straight instruments as well as 5-mm EndoEye camera. Crossing vessels were found and mobilized. LESS dismembered pyeloplasty was done using 4/0 Vicryl sutures. Hand-free intracorporeal suturing was used and ureteropelvic anastomosis was done through both interrupted and continuous suturing and JJ was inserted antegradely.
Results: Operative time was 170 minutes. There was no conversion to open surgery or conventional laparoscopy. No extra-port was added. There were no intraoperative or postoperative complications. Blood loss was less than 50 c.c. Postoperative hospital stay was 2 days. Follow-up of the patient after 6 months showed complete clinical cure with marked reduction of left hydronephrosis and patent ureteropelvic junction. The child has invisible skin scar.
Conclusions: LESS dismembered pyeloplasty is technically feasible, effective and safe option for treatment of UPJO in pediatrics with a significant low morbidity.

VID.18
Laparoendoscopic Single-Site (LESS) Distal Ureterectomy of Refluxing Ectopic Ureter
Abdel-Karim A, Aboelfotoh A, Elsalmy S
Alexandria University, Alexandria, Egypt

Introduction and Objectives: LESS applications in urology are increasing. However, LESS has some limitations that restrict its wide use by urologists. We present a video that shows the feasibility of distal ureterectomy of refluxing ectopic ureter.
Materials and Methods: We present a female that is 32 years old. She presented with history of recurrent lower urinary tract symptoms and recurrent pyeuria. She gave a history of right simple nephrectomy of non-functioning kidney 6 months ago. Thorough investigation of the patient revealed the presence of right refluxing ectopic ureter that opens at the bladder neck and was not diagnosed at the initial right simple nephrectomy. LESS right ureterectomy was done using Covedien port that was inserted through 2-cm skin incision at the umbilicus. During surgery we used both articulating and straight instruments as well as 5-mm EndoEye camera. Ureteric catheter was inserted at time of LESS ureterectomy. The distal ureter was dissected from its upper blind end at just above the scrum while the patient was placed in the semi-lateral position. Dissection of ureter was continued downward and delivered through a window behind the right round ligament into the pelvis. Then the patient was placed into the supine position and the intramural part of the ureter was dissected down to its site of insertion. The ureter was clipped and divided just above its site of insertion.
Results: Operative time was 75 minutes. Blood loss was less than 50 c.c. No conversion to open surgery or conventional laparoscopy. No extra-port was added. No intraoperative or postoperative complications were reported. Postoperative hospital stay was one day. Patient received only non-steriodal anti-inflammatory as postoperative analgesics. Visual analogue pain scale at discharge was 1. Follow-up of the patient for 10 months showed complete clinical cure and no recurrence of pyeuria. The patient has invisible umbilical scare postoperatively.
Conclusion: In spite of technical limitation of currently available LESS instruments, LESS distal ureterectomy is technically feasible procedure even in ectopic located ureter. The procedure has low morbidity and high patient satisfaction.

VID.20
Endoscopic Percutaneous and Retroperitoneal Nephropexy
Lezrek M, Bazine K, Asseban M, Kasmaoui E, Beddouch A, Alami M, Ameur A
Dept. of Urology, Military Hospital Moulay Ismail, Meknes, Morocco

Introduction and Objectives: We present a video of percutaneous endoscopic nephropexy technique, using nephrolysis and a polyglactin suture passed through the kidney.
Materials and Methods: Four female patients, with a mean age of 30.5 years (24 - 40), presented with symptomatic right nephroptosis. They presented recurrent right flank or abdominal pain following long periods of standing or increased activity. The intravenous pyelography (IVP) confirmed the right renal descent, with tilting of the kidney, when the patients moved from the supine to the erect position. In 2 cases, Radionuclide renal scan confirmed the decrease of renal perfusion in the standing position. The study was approved by the hospital ethical committee. After informed consent, patients underwent a percutaneous endoscopic nephropexy. An intercostal upper pole calyx percutaneous access was performed and a 24 Fr working sheath was placed. Another needle access was performed through a lower pole calyx and a number 2-polyglactin suture was passed into the renal pelvis. Then, it was pulled out through the upper pole tract by the nephroscope. A retroperitoneoscopy was performed, and the tip of the nephroscope achieved a nephrolysis. After insertion of the nephrostomy tube, the polyglactin suture was passed in the subcutaneous tissue, and then tied without too much tension.
Results: The operative time was 33 minutes, and postoperative hospitalization was 3.5 days. The nephrostomy catheter was removed the fifth-postoperative day. No complication was noted, especially hemorrhagic, infectious, lithiasic or thoracic complication. The 4 patients were relieved of the symptoms they suffered preoperatively, with a mean follow-up of 28 months. Postoperative ultrasonography and/or IVP showed the kidney at a higher location in erect position.
Conclusions: This technique combines the nephrostomy tract of percutaneous techniques, and the suture and nephrolysis of laparoscopic techniques. Moreover, this procedure seems to be a safe technique with satisfactory anatomical and clinical results at a lower morbidity. However, a larger series will be necessary to establish its long-term morbidity and success.

VID.21
Robotic Assisted Ileal Ureter: The Points of Technique
Murali V, Chhabra J, Bhattu A, Mishra S, Ganpule A, Sabnis R, Desai M
Muljibhai Patel Urological Hospital, Nadiad, India

Introduction and Objectives: In this video we describe a case of long segment upper ureteric stricture secondary to previous intervention that underwent robotic assisted ileal ureter, with special emphasis on the points of

technique.
Materials and Methods: A 22 year-old male with no co morbidities on evaluation for right loin pain was found to have bilateral UPJ (Ureteropelvic junction) obstruction with gross hydronephrosis on both the sides. He initially underwent bilateral PCN (percutaneous nephrostomy) followed by bilateral robotic pyeloplasty. After DJ stent removal (after 1 month), he had persistent right flank pain with pyuria and fever. CT showed right large baggy pelvis with entire upper ureteric narrowing probably secondary to devascularisation due to the previous intervention. Right antegrade and Retrograde dye study confirmed the above findings. He was explained the various options, associated risks and the patient opted for robotic ileal transposition of the ureter. PCN was removed on 3rd POD followed by PUC on 5th POD followed by drain on 6th POD. The patient was given supine position with a slight left tilt and three robotic ports were placed so that both superior and inferior dissection can be carried out. There was severe adhesion around the inflamed pelviureteric junction tissue so it was decided to proceed with inferior calycostomy and then cystostomy was done and the distance measured. Through pfannensteil incision, extracorporeal ileal segment of length 22cm, 15cm from the ileocaecal junction was constructed. Then the wound was closed and robot redocked. Ileocalycostomy followed by ileocystostomy was completed using 3 0 vicryl suture. Drain was placed. Port sites were closed.
Results: Postoperative period was uneventful. The operative time was 220 minutes and PCN, perurethral catheter and drain removed subsequently. Follow-up dye study at one month showed good drainage with no extravasation.
Conclusions: Robotic assisted ileal ureter for long length upper ureteric stricture is a safe and efficacious option in well selected cases.

VID.22
Step-by-Step Approach to Robotic Intracorporeal Orthotopic Ileal Neobladder
Murali V[1], Sabnis R[1], Ganpule A[1], Mishra S[1], Desai M[2], Desai M[1]
[1]Muljibhai Patel Urological Hospital, Nadiad, India; [2]University of South California, Los Angeles, USA

Introduction and Objectives: In this video we describe our step-by-step approach to Robotic intracorporeal orthotopic ileal neobladder with strict adherence to the established open principles of orthotopic neobladder.
Materials and Methods: A 62 year-old male, diabetic, for evaluation of hematuria was found to have muscle invasive high grade transitional cell carcinoma (TCC) of the bladder. CT abdomen showed extension into adjacent perivesical fat and lymph nodes in left paravesical and left external iliac region. He was given 3 cycles of neo adjuvant chemotherapy following which there was marked shrinkage in the size of the tunour and the lymph nodes. He was planned for Robotic radical cystoprostatectomy with intracorporeal orthotopic ileal neobladder. Standard six-port transperitoneal approach was used with all ports moved cephalad for better proximal ureteral mobilization and small bowel manipulation. We used 60cm of distal ileum (44cm for the pouch, 15cm for the chimney) about 15cm proximal to the ileocecal junction. Standard steps of open surgery including detubularisation, posterior plate reconstruction, 90° counterclockwise rotation of pouch, urethroenteric anastomosis, anterior pouch closure with cross folding and bilateral ureteroenteric anastomosis were followed in that order. We observed that the fourth robotic arm, placed on the right, helps maintain bowel retraction toward the pelvis to enable efficient neobladder configuration. Also performing the urethroileal anastomosis after constructing the posterior wall enables equal folding of the ileal segments and fixes the pouch in place to allow anterior closure without the need for repositioning or redocking. The use of barbed sutures helps reduce the need to maintain continuous traction on the suture line and helps create a watertight reservoir.
Results: Postoperative period was uneventful. The operative time for the neobladder was 170 minutes with estimated mean blood loss of 50 ml. The Drain removed on 6th POD and was discharged with perurethral catheter on 9th POD. Cystogram done at 3 weeks showed no leak and catheter was then removed.
Conclusions: Robotic-assisted intracorporeal orthotopic ileal neobladder is technically demanding but key technical modifications make it feasible and safe, while maintaining the principles of open neobladder surgery.

VID.23
The Use of Monopolar as Single Energy Source during Laparoscopic Nephrectomy: Feasible and Inexpensive
Otano N[1,2], Jairath A[1], Mishra S[1], Sabnis R[1], Desai M[1]
[1]Muljibhai Patel Urological Hospital, Nadiad, India; [2]Hospital Universitario de Caracas, Caracas, Venezuela

Introduction and Objectives: The laparoscopic surgery has become the regular of approach for nephrectomies, including live donors for transplant, radical procedures for renal masses and simple to remove diseased poor-functioning kidneys. Even when diverse energy sources have been developed, some are costly and are not accessible in all the centers. With this video we would like to show the technical elements of the use of the hook with monopolar as single energy source when performing a laparoscopic nephrectomy.
Materials and Methods: The foremost technical aspects include: 1) The use of monopolar generator at high energy settings, 2) Holding the hook in pen-shape fashion and close to the port, what gives stability to surgeon's hand and helps to prevent tremors, 3) Using the back side of the hook for exact clean cuts and 4) Dissecting and "hooking" tissues to be divided and coagulated. These elements are shown in the video of a radical nephrectomy in an 18 years old female with history of right flank pain and palpable mass on physical examination. CT demonstrates right renal tumor of 13.7 x 10.6 x 9.8 cm suggestive of vascular angiomyolipoma, diagnosis that was confirmed by the final pathology report.
Results: This video shows the technique for laparoscopic nephrectomy using only hook with monopolar energy. By the date we have registered 12 of these procedures in our institution, including 7 radical and 5 simple nephrectomies. Mean operative time has been 145 ± 65 min with hemoglobin drop of 1.1 ± 0.52 g/dL and no intraoperative complications. Patient's hospital stay has been 3.1 ± 1.4 days.
Conclusion: The monopolar cautery embrace the advantage of being a low cost wide available energy source and the hook can be used in diverse tasks, minimizing the change of tools during the procedure. Though, a careful recognition of the planes must be performed, so inflamed tissues must be avoided. The use of hook as single energy source during laparoscopic nephrectomy is feasible, safe and inexpensive when performed by surgeons with laparoscopic experience for non-inflammatory pathology.

VID.24
Holmium Laser Enucleation of Prostate: En-Bloc Technique
Shah H, Shah R
S. L. Raheja (Fortis Associate) Hospital, Mumbai, India

Introduction and Objectives: HoLEP is traditionally performed by 2-lobe or 3-lobe technique and is supposed to have steep learning curve. A novice endo-urologist finds difficulty in identification of plane of enucleation and maintaining the same. It is well known that the plane of enucleation is best identified near apical lobe. Hence, we present a technique of en-bloc (as a whole) enucleation of prostate.
Materials and Methods: All patients needing surgical management of enlarged prostate with size > 30 gm were prospectively enrolled in the study. The procedure was performed using 100 W Holmium laser machine (Lumenis) and 550 µ laser fiber at 60 W energy. After deepening groove between left lateral lobe and adjacent lobe, left apical dissection is performed. Once the plane of enucleation is entered, the prostatic adenoma is separated from its capsule by combination of mechanical dissection and

holmium laser. The dissection continues anticlockwise anteriorly towards the right lobe. Thereafter, dissection proceeds towards bladder neck. The submucosa and mucosa is separated from bladder neck anteriorly near bladder neck. Now mucosa in the groove between right apical lobe and veru montanum is incised and right apical lobe is enucleated. The final attachments of prostate at the floor with bladder neck are incised. The entire procedure is shown in video.
Results: Twenty one patient with mean prostate size of 68.9 gm (45- 160 grams) underwent en bloc enucleation of prostate during study period. The mean enucleation efficiency was 1.34 g/min and resected prostate weight was 54.7 gm. Two patients needed conversion to traditional technique. Mean postoperative catheterization was for 31.8 hours and hospital stay was 35.1 hours. There were no major complications except transient stress incontinence and febrile UTI in one patient each.
Conclusion: En-bloc removal of prostate gland is technically safe and feasible. Further studies are needed to evaluate role of this technique in surgical management of enlarged prostate.

VID.25
Single Incision Holmium Laser Enucleation of Prostate: Demonstration of Technique with Medium Power and Analysis of First 150 Cases
Shah H[1], Shah R[1], Dandekar N[2]
[1]S. L. Raheja (Fortis associate) Hospital, Mumbai, India; [2]Dandekar Hospital, Dombivili, India

Introduction and Objectives: Anterior commissurotomy is the initial step in Frayers prostatectomy. However in HoLEP, initial step consist of incision at 5 and 7-o clock (i.e. posteriorly). We modified the existing technique of HoLEP to mimic that of Frayers prostatectomy. The objective of this modification is that by performing anterior commissurotomy as a first step of HoLEP, we can enter plane of enucleation early. This could simplify the learning curve by minimizing the possibility of missing the plane of enucleation.
Materials and Methods: In this prospective multicentric study, 150 patients underwent HoLEP with the technique of single incision from July 2011 to June 2013. Patients with prostate size of < 40 gm were excluded from the study. The mean prostate size was 86.5 gm (range 45 to 220 gm). The technique includes initial incision at 12-o clock with holmium laser at 50-60 W power. The adenoma is subsequently separated from capsule with the combination of mechanical dissection and laser energy. Once the apical tissue is separated from sphincter, the mucosa around the veru-montanum is incised and the median lobe is dissected. The dissection then continue to the other lateral lobe. Finally the adenoma is separated from bladder neck and pushed in-toto in bladder for subsequent morcellation. Steps of procedure are demonstrated in video.
Results: All patients underwent procedure successfully. In all except 6 patients the entire adenoma could be pushed in bladder in-toto. The mean weight of enucleated prostate was 70.6 gm (range 22 to 184 gm) with an enucleation efficiency of 1.1 gm/min. The mean postoperative catheterization was 32.6 hrs and hospital stay was 41 hrs. The mean postoperative hemoglobin drop was 0.8 gm% and no patient needed blood transfusion. Other postoperative complications include fever (4), transient urinary incontinence (15) and meatal stenosis in 1 patient.
Conclusion: This study demonstrates feasibility and safety of single incision HoLEP. Further study comparing this modification with the standard technique of enucleation is ongoing to evaluate its proposed clinical advantages.

VID.26
Endoscopic Resection of Multiple Fibroepithelial Ureteral Polyps with Holmium Laser
Shah H, Shah R
S. L. Raheja (Fortis associate) Hospital, Mumbai, India

Introduction and Objectives: Fibroepithelial polyps of ureter is a rare benign neoplasm of ureter. Traditionally they are treated by open surgical excision. The objective of this video is to demonstrate the technique of endoscopic excision of ureteral polyps with holmium laser.
Materials and Methods: Nineteen-year-old female patient presented with left flank pain and hematuria. On radiological investigation she was diagnosed to have multiple mid and lower ureteric neoplasm causing obstructive uropathy. Her urine cytology was negative for malignant cells. On ureteroscopy she had multiple polypoidal lesions occupying the lower and mid ureter and occluding the lumen. Frozen section biopsy confirmed benign nature of the lesion. The tumor was resected and vaporized ureteroscopically with Holmium laser employing 365-μ laser fiber at 10-20 W energy. Detail procedure is described in the video. Ureteric stent was placed insitu after procedure.
Results: Procedure was accomplished successfully and uneventfully. Duration of surgery was 70 minutes and postoperative hospital stay was 44 hours. There were no immediate post-operative complications. Follow-up ureteroscopy during stent removal done 3 months later confirmed absence of ureteric polyps in ureter with normal looking ureteric mucosa. Renal scan confirm absence of obstruction at 9 months of surgery. At 1-year follow-up, kidneys were normal on ultrasonography.
Conclusion: Fibroepithelial polyp should be considered as a differential diagnosis of ureteric tumors especially in young patients. Endoscopic resection with holmium laser should be considered as a minimally invasive surgical option in such patients.

VID.27
Laparoscopic Transperitoneal Ureteroureterostomy for Retrocaval Ureter
Shivathirthan N, Maniyur R
Apollo BGS Hospital, Mysore, India

Introduction and Objectives: Embryologically, retrocaval ureter is most accurately described as pre-ureteral vena cava. This vascular anomaly arises from failure of the subcardinal veins to atrophy in their entirety during development. The lumbar component of the subcardinal vein persists as the infrarenal vena cava, crossing anterior to the middle segment of the ureter. Ureteral obstruction may result from the retrocaval location of the mid-ureter.
Materials and Methods: We present a case of right ureteral obstruction due to the retrocaval location of the mid-ureter in a 24 year-old female patient. The epidemiology and embryology of retrocaval ureter is discussed first, followed by a description of radiographs utilized in the diagnostic evaluation of this condition before and after surgical therapy. Treatment to resolve the right ureteral obstruction by laparoscopic excision of the stenotic retrocaval segment and ureteroureterostomy is shown.
Results: The preoperative radiographic evaluation of retrocaval ureter includes CT-scanning, retrograde pyelography, and diuretic renography. Laparoscopic ureteroureterostomy entails mobilization of the obstructed collecting system, and proximal and mid-ureter, followed by ureteral transection proximal to the level of obstruction. The retrocaval segment is brought anterior and lateral to the inferior vena cava, and the ureteral stenosis is excised. Continuity of the ureter is re-established by ureteroureterostomy. The patient's postoperative course is discussed with emphasis on the use of postoperative diuretic renography to document the absence of right ureteral obstruction following laparoscopic surgical therapy.
Conclusions: Retrocaval ureter is a vascular anomaly, which may result in ureteral obstruction. Laparoscopic excision of the retrocaval segment and ureteroureterostomy is an effective treatment for this condition.

VID.28
Laparoscopic Pyelolithotomy with Intraoperative Lithotripsy for Treatment of Large Staghorn Calculus
Maniyur R**, Shivathirthan N**
Apollo BGS Hospital, Mysore, India

Introduction and Objectives: Treatment of staghorn calculi with percutaneous nephrolithotomy (PCNL) can be challenging, often requiring multiple tracts or sessions for complete stone clearance. Anatrophic nephrolithotomy

can result in higher stone-free rates; it is rarely performed due to increased morbidity. There has been a series from India which showed that open Pyelolithotomy is an alternative to other procedures for large stones. Another series showed that Laparoscopic pyelolithotomy (LP) is as equally efficacious as PCNL for treatment of large stones. The average stone size in these series was 3 to 4 cm. LP with intraoperative lithotripsy, as shown in this video for treatment of large staghorn calculus (more than 5 cm) can be an attractive alternative

Materials and Methods: A patient with large staghorn calculi measuring around 10 centimeters underwent LP with intraoperative lithotripsy. Due to the large size of the stone and its impaction which rendered its removal difficult, intraoperative lithotripsy was used innovatively with the Swiss Lithoclast Lithotripter. The effective and innovative use of the lithotripter allowed near complete stone clearance in the pelvicalyceal system.

Results: Mean blood loss was around 50 milliliters. There were no complications. Patient did not require blood transfusion nor did he develop sepsis. The patient had maximal stone clearance (approximately 70gms/ml) but a little bit incomplete (which was also expected). He had residual fragments measuring 7 mm and 6 mm for which further anciliary procedures were planned. Patient was stented retrogradely. Patient was discharged the first postoperative day.

Conclusions: LP with intraoperative lithotripsy in large staghorn calculi is an attractive alternative to PCNL which might require multiple sittings and to Anatrophic nephrolithotomy with its increased morbidity. It has minimal side-effects, is easily reproducible and gives effective stone clearance rate for a single procedure, especially in patients with large extrarenal pelvis. The short hospital stay further adds to the beneficial effects of the procedure.

VID.29

Laparoscopic Reintervention for Delayed Disruption of the Urethrovesical Anastomosis after Laparoscopic Radical Prostatectomy

Smolski M, Turo R, McLeod N, Collins G, Brough R, Oakley N
Stepping Hill Hospital, Stockport, UK

Introduction and Objectives: The delayed onset of large volume urine leakage post laparoscopic radical prostatectomy is a very uncommon complication. We describe a case in which our patient returned to theatre 7 days after laparoscopic radical prostatectomy for complete laparoscopic revision of the urethrovesical anastomosis.

Materials and Methods: We reviewed patient's medical notes and imaging including CT Cystogram before repair, and voiding Cystogram after urethrovesical anastomosis reconstruction. A video presentation was created from recorded revision of the anastomosis.

Results: After routine laparoscopic radical prostatectomy the patient progressed well in the first 48 hours, with 50mLs in his drain on day 2. On the third post-operative day the patient gave a history of sudden, accidental involuntary catheter traction. This was associated with a high drain output, low grade fever and a drop in haemoglobin of 20g/L. Confirmation of disruption of the anastomosis was made with CT Cystogram.

- Cystoscopy with 19F sheath and 0 degree lens. Large posterior and lateral disruption confirmed, and catheter placed into bladder over guide wire.
- Blunt insertion of 10mm port through the previous infra-umbilical camera port site. Pneumo-extraperitoneum established and working ports inserted.
- Haematoma evacuated.
- Complete revision of anastomosis using 7 interrupted 2-0 polysorb sutures.
- Discharged home in 3 days, Cystogram 14 days: no leak.

Conclusions: Laparoscopic revision of the urethrovesical anastomosis can be performed safely in the setting of a delayed disruption after laparoscopic radical prostatectomy.

VID.30

A Novel Partial Flap Bulbous Urethra Auto-Transplantation Urethroplasty in Long Posterior Urethral Strictures

Kilinc M
Dept. of Urology, Faculty of Medicine, Necmettin Erbakan University Meram, Konya, Turkey

Introduction and Objectives: Caused by trauma and multiple operations, penile fibrosis and complete posterior urethral strictures are demanding cases requiring expertise by the urologist. The current procedure is a surgical treatment option in anastomotic open urethroplasty. In the current literature, it is presented with various modifications and manipulations. In the present case with multiple urethroplasty, we propose a novel bulbous urethral autotransplantation procedure with partial flaps in patients with penile urethral fibrosis.

Materials and Methods: Case Study: The patient was 25 years old. Before the current intervention, he underwent multiple penile and posterior perineal and/or suprapubic urethroplasty due to trauma. During the last twelve month, he has been using cystostomy catheter. After the present intervention, the patient used 1-3 clean intermittent catheters (CIC) for three post-operative months.

Results: Perineal cystostomy catheter is withdrawn during the 35th postoperative day. The patient used 1-3 clean intermittent catheter 16 ch. (CIC) for three post operative months. Following the intervention the patient prescribed Tadalafill twice a week 20mg for four months after the operation. If no problems arouse patient is followed up. The patient in the present case is visiting our clinic at three-four month intervals for the last three years. So far he had no serious complications, voiding problems, and erectile dysfunction. He is currently married.

Conclusion: The present surgical technique is novel partial flap urethral auto transplantation. In similar cases with long stricture formations, above 4-5 centimeters, it can be applied safely. This technique can be applied both perineal and suprapubic approaches in severe and demanding cases.

VID.31

A Novel Penile-Bulbous Urethra Interposition with Partial Flap in Long Posterior Urethral Strictures

Kilinc M
Dept. of Urology, Faculty of Medicine, Necmettin Erbakan University Meram, Konya, Turkey

Introduction and Objectives: Caused by trauma and multiple operations, complete posterior urethral strictures are demanding cases requiring expertise by the urologist. The current procedure is a surgical treatment option in anastomotic open posterior urethroplasty. In the current literature, it is presented with various modifications and manipulations. In the present case with multiple urethroplasty, we propose a novel penile and/or bulbous urethral interposition procedure with a partial flap in patients with long posterior urethral stricture.

Materials and Methods: From 1997 till June 2013, approximately 15 cases were conducted using this procedure either suprapubically or via the perineum or both. Case study: The patient was 24 years old. Before the current intervention, he underwent posterior perineal and/or suprapubic urethroplasty due to trauma. During the last 10 months, he has been using cystostomy catheter. After the present intervention, the patient used daily one to three 16 Ch. clean intermittent catheters (CIC) for three to four post-operative months.

Results: First, perineal cystostomy catheter is withdrawn during the 35th postoperative day. Afterwards, the cystostomy catheter is removed. The patient used 1-3 clean intermittent catheter 16 ch. (CIC) for three post operative months. The patient in the present case is visiting our clinic at three-four month intervals for the last three years. So far he had no serious complications and voiding problems; yet, erectile dysfunction present before the intervention continued.

Conclusion: The present surgical technique is a novel penile and bulbous urethral interposition procedure with partial flaps in patients with long posterior urethral strictures. In similar

cases with long stricture formations, above 4-5 centimeters, it can be applied safely via the perineum and/or suprapubically.

VID.32
Flap Free Penile-Bulbous Auto-Transplantation Urethroplasty in Long Strictures with Missing Bladder Neck
Kilinc M
Dept. of Urology, Faculty of Medicine, Necmettin Erbakan University Meram, Konya, Turkey

Introduction and Objectives: Posterior urethral strictures are demanding cases requiring expertise. The current surgical treatment option is anastomotic open urethroplasty. In the current literature, it is presented with various modifications and manipulations. In the present case with multiple urethorplasty, we propose a novel urethral auto-transplantation procedure without the necessity for a flap.
Materials and Methods: Case Study: The patient 9 years old. Before the current intervention, he underwent three times perineal and/or suprapubic urethroplasty. During the last two years, he has been using cystostomy catheter. After the present intervention, the patient used clean intermittent catheter (CIC).
Results: The patient is under the follow-up of our clinical for the last three years. During the first year of the follow-up, he was using daily 4 - 5 times CIC of 16 f. size. During the second year, this decreased to two times. The patient underwent during the second postoperative year once urethral dilatation under sedation anesthesia using percutaneous lithotrips sets with guide until 18 f. Following dilatation a 16 f. catheter was placed. Intermittent infection controls have been conducted throughout the postoperative period at 3 months interval. During the third postoperative year, CIC was used by the patient irregularly. The patient is suffering from incomplete incontinence.
Conclusion: The present surgical technique is novel flap free urethral auto transplantation. In similar cases with long stricture formations, above 5 centimeters, can be applied safely. This technique can be applied both perineal and suprapubic approaches in severe and demanding cases.

VID.33
Bulbar Urethroplasty with Ventral Onlay Buccal Mucosal Graft: Surgical Technique
Martinez Rodriguez R, Pereira J, Calaf O, Arzoz M, Bayona S, Ibarz L
University Hospital Germans Trias i Pujol, Badalona, Spain

Introduction and Objectives: Numerous surgical techniques have been described to repair bulbar urethral strictures according to stricture length and location. Augmentation urethroplasty is required if the stricture is lengthy or if it affects the penile urethra. An augmentation procedure may either be a one- or two-stage procedure. The use of a flap or graft for augmentation urethroplasty was a source of controversy in the field. Different grafts and different approaches have been used. We describe the different surgical steps for urethral reconstruction using a ventral buccal mucosal onlay graft.
Materials and Methods: A 58 year-old male with idiopathic bulbar urethral stricture; failed endoscopic urethrotomy in 2005; voiding urethrography shows a 3 cm stricture in bulbar urethra.
Results: An augmentation urethroplasty with oral buccal mucosal ventral graft is performed.
Conclusions: Ventral oral graft urethroplasty represents a good option in bulbar strictures where the thick spongiosum provides support to the graft. Surgical technique is easier than dorsal graft, with similar success rates reported in selected patients.

VID.34
A Difficult Case of Post Traumatic Recto-Urethral Fistula
Seth A, Saini A, Rao N, Dogra P
All India Institute of Medical Sciences, New Delhi, India

Introduction and Objectives: Patients with pelvic fracture urethral distraction defects require major reconstructions. A simultaneous rectal and perineal injury resulting in an additional recto-urethral fistula adds another dimension of difficulty to such procedures. The objective of this video is to demonstrate the reconstructive technique in one such patient.
Materials and Methods: A 24 year-old male met with a road traffic accident. His initial management was in a trauma unit with laparotomy splenectomy, intestinal resection, transverse colostomy and suprapubic cystostomy. He was referred to our unit for urethral reconstruction. RGU showed a complete block at proximal bulbar level. MCU showed urine flowing freely into rectum and colon. The patient was operated upon in the lithotomy position. The video begins with retrograde-urethroscopy and antegrade-cysto-urethro-scopy. The apex of the prostate was opening into the rectum. The two ends of the distracted urethra had a gap of 4cm. The fistula was cannulated with a ureteric catheter which was introduced from the supra-pubic cystoscope and retrieved through the anus. A broad inverted-U incision to raise a perineo-scrotal fascio-cutaneous flap was made. Bulbo-spongiosus was opened. Bulbar urethra was completely mobilized and released at its proximal end. On the right side removal of bony spicules and callous was required. A low midline supra-pubic incision with inferior -extension on either side of penis was made. Pre-vesical space was entered and dissection was continued into the retro-pubic space. The pubic bone was exposed for 3 cm on either side of the pubic symphysis. A 4cm wide chunk of pubic bone was excised. Callous and sheet of fibrous tissue was excised to expose the apex of prostate. An anterior urethrotomy was made into the apical area of prostatic urethra. The posterior lip of the prostate was sharply separated from the rectum. The rent in the rectum was closed in two layers. An apron of dartos fascia was separated from the overlying skin of the perineo-scrotal flap. This apron was used to reinforce the closure of the rectal rent. The free end of the bulbar urethra was anastomosed to the apex of the prostate over a 16Fr silicone Foley/s with interrupted sutures of 3-0 polyglactin. Wounds were closed in layers leaving a suction drain.
Results: Drain was removed after two days and catheters were removed after six weeks. At six months patient was voiding well. His recto-urethral fistula had completely healed.
Conclusions: Progressive-perineo-abdominal-transpubic approach provides an adequate exposure for high post-traumatic urethral distraction defects with associated recto-urethral fistula. A dartos-apron from a perineo-scrotal flap provides a good reinforcement for rectal defect closure.

VID.35
Combined Endoscopic 'Cut for the Light' for a Traumatic Bladder Neck Closure
Westendarp M**, Baard J**, Swaan A, Joosten E, Kamphuis G, de la Rosette J
AMC, Amsterdam, The Netherlands

Introduction and Objectives: We present a video of the Endoscopic laser vaporisation of an unusual case of total bladder neck closure because of scar tissue after a gunshot injury.
Materials and Methods: A 42-year-old male was originally presented to the surgeons due to multiple thoracic, abdominal and pelvic gunshot wounds. During a damage control laparotomy, among other, an entrance bullet wound was found in the right buttock with the exit wound in the left inguinal area. A suprapubic catheter was placed and the urologist was consulted because of haematuria. Evaluations with cystoscopy initially showed a large defect in the urethra posterior just proximal of the colliculus. Because a transurethral catheter could not be placed a suprapubic catheter was inserted. At second cystoscopy, 4 weeks after the original trauma, a complete closed bladder neck was seen. This was confirmed by a retrograde uretrography study. Once patient was clinically stable, under a combined approach the bladder neck was visualized. Meaning an antegrade flexible cystoscope through the suprapubic tract and retrograde a rigid endoscope. With cold knife an opening incision was made through the endoscope; cutting "for the light" provided by the antegrade cystoscope. A safety ureteral catheter was placed to secure the

tract. A complete vaporization of the scar tissue was made, using a Holmium laser (setting: 1 Joule/10 Hertz). The procedure was stopped when viable tissue was reached and the bladder neck was widely open. A transurethral and a blocked suprapubic catheter were placed at the end of the procedure. Four weeks indwelling catheter, and 6 weeks follow-up cystoscopy.
Results: To our knowledge most of the bladder neck opening after trauma are performed either by surgical plasty or with plasma vaporization.
Conclusion: Laser vaporization is an alternative with good results at short-term follow-up.

VID.37
Surgical Excision of a Leiomyosarcoma of the Inferior Vena Cava with Bilateral Involvement of the Renal Hila
Marconi L**, Coelho H**, Figueiredo A
Dept. of Urology and Renal Transplantation, Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal

Introduction and Objectives: Primary inferior vena cava (IVC) leiomyosarcomas represent a rare clinical entity that has been reported in fewer than 300 patients. Surgical management represents a major challenge due to their size and location, especially when there is invasion of the renal veins. In these cases, kidney sparing surgery may be even more complex. We present a video of a kidney sparing surgical excision of a IVC leiomyosarcoma involving bilaterally the renal hila. The surgery was performed by urologic surgical oncologist with extensive experience in renal transplant and multiorgan procurement from deceased donors.
Materials and Methods: A 29 year old patient presenting a lumbar pain and a CT scan with a retroperitoneal mass with 45x45x40mm arising from the IVC, invading both renal veins and occluding completely the drainage from the distal IVC and from the left renal vein (left renal outflow being preserved through a lumbar vein). The right renal vein was partially occluded by the tumor maintaining however some drainage to the proximal IVC. A percutaneous biopsy of the mass revealed a retroperitoneal leiomyosarcoma and a complete surgical ressection was planned. A Chevrón incision was used and, with a Cattel-Braasch maneuver, the distal small bowel, right colon and duodenum were mobilized, exposing the IVC and the mass. The left renal vein was ligated and sectioned being the left renal outflow preserved through retroperitoneal venous collaterals. After occluding the distal vena cava (bellow the tumor) and the proximal vena cava (after the emergence of the right renal vein) a complete surgical excision of the mass was performed. The distal IVC was managed by direct ligation. The proximal IVC was sutured in continuity with the right renal vein with a warm ischemia time of 5 minutes.
Results: The operating time was 175 minutes with estimated blood loss of 50ml. No peri or postoperative complications occurred. Pathology revealed an inferior vena cava primary leiomyosarcoma of the inferior vena cava with negative surgical margin. The patient was discharged at 5th postoperative day.
Conclusion: Aggressive surgical management combined with adjuvant therapies offers the best treatment for patients with IVC leiomyosarcoma. Such tumors require highly specialized surgeons with experience in oncologic, vascular and urologic surgery. The use of surgical techniques learnt in renal transplantation may represent a fundamental tool.

VID.38
Endourological Treatment of Calyceal Diverticulum Disease
Acosta Reveles M, Diego V, Celada G**, Otta R**, Brime R, Fernández I
Hospital Universitario de La Princesa, Madrid, Spain

Introduction and Objectives: Calyceal diverticulum is an uncommon disease. The minimally invasive approach is an important challenge for the urologist. The aim of this video is to present the surgical technique of percutaneous treatment of caliceal diverticulum containing lithiasis.
Materials and Methods: The surgical indication is established in patients with symptomatic diverticulum such as recurrent infection or pain. The percutaneous nephrolithotomy is performed under general anesthesia. A retrograde pyelography shows an opacified calicial system. Selective percutaneous puncture of the diverticulum with the aid of image intensifier. Through the amplatz sheet a 28 Fr nephroscoup is introduced. Inside the diverticulum there are a multiple small size stone easily removed by using a nitinol basket device. Once all stone have been removed the retrograde infusion of methylene blue begins through ureteral catheter to localize and asses the communication orifice between the diverticulum and the surrounding calicial system. Once we have localized it we proceed to perform electrocoagulation of the communication orifice using a 24 Fr resector with a roller ball electrode, after electrocoagulation, we check out no contrast leaking inside the diverticulum. Finally a 20 Fr percutaneous nephrostomy is placed in the diverticulum.
Results: The patient is free of symptoms after 6-months follow-up. The disappearance of the calculi and diverticulum is confirmed with excretory urogram.
Conclusions: Endourological approach for diverticular calculi, such as percutaneous nephrolithotomy (PNL), is a minimally invasive treatment with excellent results and low morbidity. Using this procedure we are able to perform stone removal and cavity fulguration. Endourological techniques and specially PNL could be the first line for treatment in selected cases of this pathology.

VID.39
Tricks for Economic Percutaneous Renal Placement of a Safety Guidewire
Lezrek M, Fethi A, Zahir R, Tazi H, Sadiq A, Slimani Alaoui A, Bazine K, Asseban M, Kasmaoui E, Alami M
Dept. of Urology, Military Hospital Moulay Ismail, Meknes, Morocco

Introduction and Objectives: During percutaneous renal surgery, various safety guidewire introducers are available. We present a video of tricks to insert a safety guidewire with no additional cost.
Materials and Methods: To reduce the cost of the inserting device we present 3 techniques. After calyx puncture and insertion of a first guidewire, dilation to 12 Fr is performed.
A 15 cm segment is harvested from an 9-Fr dispenser-coils-tube housing the guidewire. The segment is advanced over the guidewire until reaching the caliceal system, and clear fluid is recuperated. Then, a second guidewire is placed into the collecting system. Otherwise, after puncture and insertion of the first guidewire, the central rod of Alken metallic dilators is advanced over the guidewire. Then, directly, a 24 Fr Amplatz-dilator is advanced over the metallic rod until reaching the calyx cavity. A second guidewire is inserted through the Amplatz dilator adjacent to the metallic rod until passing in the calyx cavity. The Amplatz dilator is retrieved. The safety guidewire is recuperated from the dilator. Then, the Amplatz dilator and sheath are reintroduced once again in the caliceal cavity. Alternatively, a hole is performed in a 12 Fr fascial-dilator, 2 cm below its tapered-tip, with the puncture needle. The tip of a guidewire is tightly inserted in the hole. The dilator is advanced over the working guidewire, until the safety-wire reaches the calyx. The safety-wire is dislodged from its hole and coiled into the kidney.
Results: The dispenser tube of the guidewire is the most used technique. It is a rigid tube and insertion must be performed smoothly to avoid kinking of the guidewire. There is no radio-opaque markers incorporated; the correct position is ensured by the tactile feeling, the clear fluid, and the tip of the safety guidewire. The technique using the Amplatz dilator is performed if the dispenser-coils-tube of the used guidewire is of a large diameter, otherwise, to avoid the use of the small fascial-dilators. No complications were noted with these techniques.
Conclusion: These cost-free tricks had allowed us the insertion of a safety guidewire without using any specific safety guidewire introducers.

VID.40
A Cost Free Simplified Techniques for Connecting a Ureteral Catheter to a Drainage Bag
Lezrek M, Fethi A, Tazi H, Badraoui M, Slimani A, Bazine K, Qarro A, Alami M
Dept. of Urology, Military Hospital Moulay Ismail, Meknes, Morocco

Introduction and Objectives: We present a video of economic tricks to adapt the ureteral catheter to a drainage bag.
Materials and Methods: Foley catheter technique: The 18-gauge needle puncture is inserted through the Foley catheter distal end, and exteriorized in the beginning of the funnel shaped distal-end. Then, the needle is inserted in the distal end of the ureteral catheter. Using the needle as a guide, the ureteral catheter is advanced, through the Foley catheter wall, into Foley catheter. The needle is removed. The ureteral catheter is adapted to the Foley Catheter in a watertight junction. The tubing of the drainage bag is inserted in the Foley catheter. Otherwise, the injection port is cut from the empty 500-ml serum-bag. The 18-gauge needle puncture is inserted through the injection port, from inside to outside. Then, the needle is inserted in the ureteral catheter, which is advanced in the injection port. The needle is removed. The tubing of the drainage bag is inserted in the opening of the injection port. Similarly, the irrigation port from the serum the bag can be used to adapt a 10 to 14 Fr tube to a drainage bag.
Results: The Foley catheter technique provides the simplest manner to unify the distal endings of a ureteral catheter to a Foley catheter within a unique drainage bag. There is an economy of the ureteral catheter adapter and a drainage bag. The same technique can be used for two ureteral catheters. The limitations of this technique are difficulty of bladder irrigation and washing if needed. It is impossible to have the split evaluation of the ureteral and Foley catheter drainage. To avoid these limitations, the irrigation port technique can be used. However, there is economy of only the adaptor. In both techniques, the needle must be inserted with caution to avoid injury to the fingers. The injection port can be used to inject contrast media or dye through the ureteral catheter, with a catheter syringe, instead of a luer-lock adaptor.
Conclusion: These techniques eliminate time-consuming and expensive steps in adapting the ureteral catheters to a drainage bag.

VID.41
Replacement of the Amplatz Sheath with a Larger One for Larger Stone Fragments Extraction
Lezrek M, Bazine K, Asseban M, Kasmaoui E, Tazi H, Beddouch A, Qarro A, Alami M
Dept. of Urology, Military Hospital Moulay Ismail, Meknes, Morocco

Introduction and Objectives: We routinely use a 20.8 Fr nephroscope, and a 24 Fr working sheath. However, sometimes a large stone is difficult to fragment; the replacement to a 30 Fr sheath would allow more rapid extraction of larger stone fragments. We present a video of a technique to replace a 24 Fr with a 30 Fr working sheath during percutaneous renal surgery, for larger stone fragments extraction, with endoscopic control and without radiation exposure.
Materials and Methods: The 30 Fr sheath is back-loaded over the nephroscope, which is introduced into the 24 Fr sheath. The 30 Fr sheath is progressively inserted in a rotating screw-type fashion, over the 24 Fr sheath. The whole procedure is performed under direct endoscopic vision by the nephroscope, without radiation exposure. a bi-prong forceps is opened beyond the 24 Fr sheath. Then, the nephroscope is progressively retrieved dragging along this inner sheath.
Results: No migration of the 24 Fr sheath was noted. Moreover, in more than 60 patients, no hemorrhage or renal pelvis perforation was noted, nor any complication related to the technique. This replacement of the sheath may be performed when there is a large stone burden or a staghorn calculus, and ultrasound lithotripsy is inefficient or too slow. Furthermore, this technique may be used for the same indications as the technique of splitting the Amplatz sheath, in order to facilitate percutaneous stone extraction. Moreover, if the stones are slightly larger than 1 cm, then the 30 Fr sheath can be split before insertion, so both techniques can be associated. The last and infrequent situation is when the tip of the Amplatz sheath is damaged, so the replacement of the sheath is inevitable.
Conclusion: This technique may be useful for urologist who use small diameter working sheaths, and may be used with other sheaths diameters, for example 18 and 24 Fr sheath. So definitely, it is another trick for the urologist, to have up his sleeve, which adds more comfort and versatility during percutaneous surgery.

VID.42
Supra-Coeliac Aortic Control Provides a Bloodless Field during Excision of Post-Chemotherapy Residual Mass
Seth A, Singh P, Saini A, Bora G, Singh A
All India Institute of Medical Sciences, New Delhi, India

Introduction and Objectives: Excision of post-chemotherapy residual masses in patients of NSGCT is a formidable task. It becomes even more difficult when there is loss of plane with aorta or renal vessels. The objective of this video is to demonstrate the advantage of supra-coeliac aortic control in a situation where the left renal vessels were completely engulfed by a para-aortic post-chemotherapy residual mass.
Materials and Methods: A 32 year-old male was diagnosed to have a left testicular mixed germ cell tumour with a 12X10 cm left para-aortic mass, 6X6 cm mass in segment 8 of liver and multiple pulmonary secondaries. The para-aortic mass was situated in left renal hilar area. The renal vessels were inseparable. With BEP chemotherapy his serum markers normalized and the masses reduced to half in size. We accepted to operate upon him along with the hepato-biliary team. The patient was opened with a roof top incision. The left colon was slowly lifted off from the mass. The spleen and pancreas were similarly lifted. The left common iliac artery was identified below the mass. The left edge of the artery was used as guide to dissect the mass till the lower part of aorta. Further dissection in the renal hilar area was very difficult. Dissection was shifted superiorly. The left lobe of liver was mobilized. The esophagus was looped and lifted. The supra-coeliac aorta was dissected and looped at this level. Subsequently the whole mass, with the left kidney included, was lifted from the posterior abdominal wall and left hanging from the aorta. The supra-coeliac aorta was now cross clamped. The whole mass was slowly sharply dissected off from the aorta in a bloodless field using Metzenbaum scissors. The left renal artery and vein could be easily identified and ligated. The aortic cross clamp was taken off. The hepato-biliary team excised the segment 8 of liver.
Results: The aortic cross clamping time was 14 minutes. The blood loss till the excision of the retro-peritoneal mass was 350 ml. The patient had an uneventful recovery.
Conclusion: Supra-coeliac aortic control provides a bloodless field during excision of a difficult post-chemotherapy residual mass.

VID.43
Harvest of Buccal Graft: Technique for Resident Teaching
DeLong J, Chesnut G, Virasoro R
Eastern Virginia Medical School, Norfolk, USA

Introduction and Objectives: Substitution urethroplasty is a common procedure within reconstructive urology. The use of buccal mucosa has been popularized and is currently the graft of choice. Surgical technique varies; overall results are excellent with high success rates for long anterior urethral strictures with low donor site morbidity. In this video we aim to present our technique for buccal graft harvest that we have found successful for resident teaching.
Materials and Methods: After appropriate patient selection and consent, buccal graft harvest is begun. Two surgeons work in tandem to harvest the graft, which can be done at the start of the procedure or after perineal dissection. Twenty consecutive patients underwent our technique for buccal graft harvest.

Results: This video represents a detailed, step-by-step technique for harvesting buccal mucosa that we have found facilitates resident teaching. Mouth is prepped and draped. The selected cheek is exposed, and Stensen's duct is marked. Dilute lidocaine with epinephrine is injected above buccinator muscle. With both surgeons standing on the same side, exposure is facilitated. The graft is harvested with scissors as the assistant provides counter traction. Postoperative discomfort is minimized by not closing the harvest site. All residents acting as primary surgeon for this portion of the procedure have been able to successfully harvest the graft with this technique.
Conclusions: Our technique for harvesting buccal mucosa facilitates resident teaching and is a simple, reproducible method with good results. This step-by-step video could be a useful resource for residents who wish to learn buccal graft harvest.

VID.44
Chinese-Shadows for Initial Learning of Calyx Puncture without Radiation Exposure
Lezrek M, Bentani N, Tazi H, El Khadim R, Slimani Alaoui A, Bazine K, Moudouni S, Alami M, Sarf I
Dept. of Urology, Military Hospital Moulay Ismail, Meknes, Morocco

Introduction and Objectives: We present a video of a latex glove model using the principle of light and shadows like "Chinese shadows", for initial learning of percutaneous calyx puncture, without radiation exposure.
Materials and Methods: A square piece of foam, with a cylinder cut in the middle, is used. A slit is cut in one side. A latex glove is inflated with air, and it is inserted in the slit, thus, the fingers are horizontal in the middle of the cylinder. The model is put on a retro-projector. The shadows of the fingers and the puncture needle are projected on the screen. Otherwise, the central cylinder can be covered with a sheet of paper, so the shadows are projected on the paper. The puncture needle is used through the lateral side opposite the glove. The beam of light is perpendicular to the tract, so it gives orientation in the frontal plan. The needle is aligned with the glove's tip in the frontal plan, then it is moved from down to up in the transversal plan, with little thrusting movements, until the finger moves. The fingers' tips are used as calyxes; puncture is to push the finger's tip in the middle until it become concave and invaginated.
Results: The Chinese shadows model is simple and rapid to set up. It is economical, by using very cheap and widely available material. It can be used in classrooms and workshops without the risks of radiation exposure, and there is no limit of training time. It allows beginners the initial use of the puncture needle and its orientation in the space. However, dilation and Amplatz sheath insertion are impossible. There is a limitation in terms of "tissue feeling" and for anatomic relations. Ultrasound-imaging guidance cannot be used.
Conclusions: The Chinese shadows model allows beginners the initial use of the puncture needle and its orientation in the space. It can be used in classrooms and workshops without the risks of radiation exposure, and there is no limit of training time. However, further studies are needed for validation.

VID.45
Right Transperitoneal Nephrectomy in Thiel Embalmed Cadaver
Prasad Rai B[1], Healy S[1], Raslan M[1], Tang B[1], Sweeney C[1], Somani B[2], Nabi G[1]
[1]Ninewells Hospital, Dundee, UK; [2]Southampton University Hospital, Southampton, UK

Introduction and Objectives: Human Cadavers form the cornerstone of anatomy and surgical training. Traditional embalming techniques alter tissue quality compromising fidelity. The method has been found to be useful for long-term preservation of tissues including advantages of retaining elasticity and compliance. In this video we demonstrate various steps of Right Transperitoneal Laparoscopic Nephrectomy on a Thiel Embalmed Cadaver (TEC).
Materials and Methods: TECs were processed in the Centre for Anatomy and Human Identification. The procedure consists of vascular perfusion followed by submersion of the cadaver for a period of at least two months. The Thiel's embalming fluids are water-based solutions for infusion and submersion, containing (in different proportions) boric acid and various salts for fixation and dis- infection, low levels of 4-chloro-3-methylenphenol for mold prevention, ethylene glycol for preservation of tissue plasticity, low concentrations of formalin (0.8% in the submersion fluid), and (in the infusion fluids only) alcohol and morpholine for preservation of tissue consistency and color. Ten TECs were used in an intensive 2-day training programme. Twenty urological trainees/junior consultants and 4 expert faculty members participated. All participants were asked to rate the TECs using a Likert scale (1= strongly disagree, 2= disagree, 3= neither agree nor disagree, 4= agree, 5= strongly agree) for the following steps:
1. Set up and positioning of the body
2. Port insertion and positioning
3. Anatomical landmarks
4. Identifying of ureter
5. Dissection of the lower pole
6. Identification of hilum
7. Skeletonisation of renal vein and artery
8. Clip and dividing the artery and vein
9. Mobilising the upper pole
10. Entrapment and delivery of the specimen

Results: The scores for set up and positioning of the body, port insertion and positioning, anatomical landmarks, identifying ureter, dissection of the lower pole, identification of hilum, identification and skeletonisation of renal vein and artery, clip and dividing the artery and vein, mobilising the upper pole, and entrap and deliver the specimen were 4.5±0.56, 4.29±0.6, 4.25±0.49, 4.25±0.58, 4.5±0.43, 4.63±0.4, 4.58±0.42, 4.58±0.52, 4.54±0.41, 4.11±0.63 respectively.
Conclusion: TECs provide a highly realistic training model for laparoscopic nephrectomy and are an excellent resource for laparoscopic skill acquisition.

VID.46
Usefulness of Narrow Band Imaging in Diagnosis and Follow-Up of Bladder and Upper Urinary Tract Tumors
Diego V, Celada G, Otta R, Acosta M, Brime R, Fernández I, Olivier C
Hospital Universitario de La Princesa, Madrid, Spain

Introduction and Objectives: It is well known that endoscopical procedures are very useful for urothelial tumor diagnosis; nonetheless, some of these lesions could remain unidentified, due to factors as the existence of flat, small or difficult location tumors. New optic systems such as "Narrow band imaging" (NBI), intend to improve sensitivity of conventional white light endoscopic diagnosis. The aim of this video is to show and describe NBI as an endoscopical support technique in bladder and upper urinary tract tumors.
Materials and Methods: NBI is based in the use of two short wave length beams (415 and 540 nm), which are mainly absorbed by hemoglobine. This effect shows the urothelial vascular structure, which gets a special morphology in tumor areas. NBI is aso very useful in defining tumor limits in order to perform complete resection of malignant lesions. We present the corresponding images of bladder and upper urinary tract urothelium with conventional light and NBI. We can appreciate the normal transitional epithelium and the pathological aspect, showing that certain injuries, visible whit NBI, may not be detected with white light. With this method suspicious injuries could be observed in a greenish color, while the superficial vascular pattern would be seen in a bluish. NBI is also very useful for defining tumor margins during resection. One of the typical images is the "frog's-eggs effect", which shows a transversal view of tumoral papillae vessels, and this image does not appear in inflammatory lesions.
Results: In our group, NBI represents a very valuable technique of regular use which permits to improve diagnosis and follow-up of patients affected from urothelial carcinoma. It allows us to identify certain injuries that would not have been detected with conventional endoscopic

procedures.
Conclusion: NBI is a safe, effective and non-invasive tool for diagnosis and follow-up optimization in bladder and upper urinary tract tumors.

VID.47
Endoscopic Section of Ureterointestinal Anastomotic Strictures by Combined Anterograde and Retrograde Approach
Diego V, Celada G, Otta R, Acosta M, Brime R, Fernández I, Olivier C
[1]Hospital Universitario de La Princesa, Madrid, Spain

Introduction and Objectives: In patients undergoing radical cystectomy, ureterointestinal anastomotic stricture is a late complication which is difficult to resolve with conventional endourological approaches. The aim of this video is to present the surgical technique of endoscopic section of ureterointestinal nonmalignant anastomotic stenosis adopting a combined percutaneous antegrade and endoscopic retrograde approach (the "Lovaco Technique"). In our group this technique is used regularly, as in the late years we have performed it in several patients with few complications and optimal results.
Materials and Methods: The indication for surgery is established when the patient presents an obstructive ureterointestinal stricture. In some cases percutaneous nephrostomy is performed before surgery if the patient has presented complications, usually infection, renal failure or kidney functional annulation. The procedure begins with percutaneous puncture of the kidney and antegrade ureteral tutoring with guidewire and through the ureterointestinal anastomosis. Then we proceed to localize the stenotic segment by anterograde pielography and perform a pneumatic balloon dilation at 12-14 atmospheres under fluoroscopic control. Once dilated, we induce endoluminal invagination of the stricture by traction of the balloon, so that we observe the stenotic segment directly in its whole depth and width. The stricture is sectioned with electrocautery under endoscopic vision, maintaining the traction on the balloon in order to view it completely and to separate the stricture from the retroperitoneal blood vessels and bowel. It is very important to perform section of the stricture throughout its whole length, affecting all layers of the anastomosis until we reach fatty tissue. Finally, we retrogradely place a double J catheter that will be withdrawn after six weeks.
Results: The "Lovaco Technique" provides an optimal control of the ureterointestinal stricture by allowing direct viewing of stenosis in its full length and total control during the endoscopic section.
Conclusion: In selected cases and with adequate training, endoscopic section of ureterointestinal anastomotic strictures by intraluminal invagination, adopting combined anterograde-retrograde approach, can be an effective procedure.

VID.48
Calyceal Diverticular Stone: Ureteroscopic Management
Bozkurt I, Yonguc T, Arslan B, Polat S, Koras O, Degirmenci T, Minareci S
Dept. of Urology, Izmir Bozyaka Training and Research Hospital, Izmir, Turkey

Introduction and Objectives: A 35 year-old man with a complaint of right flank pain was diagnosed as right calyceal diverticular stone. The patient was managed with ureterorenoscopy. Calyceal diverticula are rare outpouchings of upper urinary system that likely have a congenital origin. Stones are found commonly in diverticula.
Materials and Methods: In this video we start with performing ureteroscopy with a semirigid ureterorenoscope. We use it routinely before flexible renoscopy either for dilatation of the ureter and guidewire placement. After placement of two guidewire into the pelvis of the right kidney the flexible ureterorenoscope is passed over one of the guidewire and introduced into the renal collecting system. The rest guidewire retained as safety wire.
Results: Although the tip of the guidewires is very soft and thought to be asymptomatic, there is a hole seen at the upper calyx caused by traumatization of guidewire. At the left of that hole a pale area can be seen that thought to be possible neck of the diverticula. A 15 ml of contrast material was injected through the irrigation canal of the ureterorenoscope and a fluoroscopy image was obtained. After that the possible neck of the calyx was determined by visualizing the slow backflow of the contrast material. Because of the difference between specific gravity of water and contrast material the backflow could be seen very well that demonstrates the invisible calyceal neck. The specified area was insized with Holmium laser and then the contrast material was injected again and a fluoroscopy image was obtained to confirm the diverticula.
Conclusion: The diverticular neck was insized with Holmium laser, the stones were fragmented and replaced to renal pelvis using a nitinol basket catheter.

VID.49
Surgical Management of Female Paraurethral Cyst with Concomitant Stress Urinary Incontinence
Yonguc T**, Bozkurt I**, Yarimoglu S, Gulden I, Polat S, Minareci S
Dept. of Urology, Izmir Bozyaka Training and Research Hospital, Izmir, Turkey

Introduction and Objectives: Paraurethral cysts are usually asymptomatic and frequently detected incidentally during routine pelvic examination; however, patients can present with complaints of a palpable cyst or with lower urinary tract symptoms (LUTS) and also dyspareunia. In most cases, diagnosis can be made on physical examination but for more detailed evaluation and to differentiate from malign lesions ultrasonography (US), voiding cystourethrogram (VCUG), computerized tomography (CT), or magnetic resonance imaging (MRI) can also be used. Management of symptomatic paraurethral cyst is surgical excision. In this video our objective is to show the surgical management of female paraurethral cyst with concomitant stress urinary incontinence (SUI).
Materials and Methods: A 37 year-old woman presented with an 8-year history of progressive urinary symptoms consisting of dysuria, urinary frequency, urgency urinary incontinence, SUI and dyspareunia. Physical examination in the lithotomy position revealed a cystic lesion located in the left anterolateral vaginal wall. Also cough stress test for SUI was positive. Her preoperative ICI-Q, UDI-6, IIQ-7 and SEAPI scores were 16, 8, 9 and 18 respectively. Vaginal US revealed a solitary 2 cm paraurethral cyst, localized in the distal urethra. Pelvic MRI also revealed a benign cystic lesion in the distal urethra. No pathology was observed in preoperative urethrocystoscopy. The patient underwent surgical excision of the cyst and anterior colporrhaphy for SUI. Histopathological examination showed that cyst was lined with transitional epithelium.
Results: At third month visit the patient was very satisfied with the surgical procedure and she did not have any incontinence symptoms. The ICI-Q, UDI-6, IIQ-7 and SEAPI scores were 0.
Conclusion: Sometimes the LUTS concurring with the parauretral cyst can be dominant. Herein we want to show that extra surgical procedures can be necessary with paraurethral cyst excision for full patient satisfaction.

Residents' Forum
Tuesday, October 14
1300-1600

RF-01.01
T1G3 Bladder Cancer: Outcomes in Long-Term Follow-Up
Guijarro A, Romero G, Ascencios J, Morales S, García J, Navarro F, Arrizabalaga M, Paniagua P
Mostoles University Hospital, Madrid, Spain

Introduction and Objectives: To study the behavior of patients with T1G3 bladder cancer and to analyze possible risk factors in their evolution.
Materials and Methods: Between 1983 and 2011, 1500 bladder cancer cases have been diagnosed in our department. Of that, 1100 cases were superficial tumors and 400 were infiltrating at diagnosis. A total of 164 cases were high-grade tumors (pTa-pT1 G3), 138 were primary tumors and 28 recurrent tumors of less histological grade. Statistical analysis was performed with SPSS v 17.0: we performed a Kaplan Meier survival analysis and Log Rank test studying relation between disease free survival (DFS), disease free progression(DFP), overall survival (OS) against the following factors: sex, age, primary tumors, CIS, BCG treatment and dosage.
Results: The mean age at diagnosis was 67 years (35-89 years). Among all, 145 patients were male (88.4%) and 19 female (11.6%). The median follow-up for living patients was 68 months (4-318 months) and the mean was 83 months. The number of patients lost was 13 (8%) and 136 patients have been treated with BCG (8%), the rest of the patients were lost during follow-up (13 subjects) or were patients who didn´t receive instillations due to old age or comorbidity (15 patients). During follow-up, we observed recurrence in 85 patients (52%). One and five year recurrence was diagnosed in 47 (29%) and 80 patients (48%) respectively. The median DFS was 49 months (1-135 months). We found as statistically significant factors for DFS: non-primary tumors (p<0.01), CIS (p<0.01), BCG treatment (p: 0.042) and BCG dosage (p< 0.016). There was a statistical tendency for age over 65 years (p: 0.056). We found progression to muscle invasive tumors in 34 patients (21%). In one year, it was observed in 9 patients (5%) and in 5 years, in 27 (16%). The median time to progression was 61 months (3.4-229.6 months). We found CIS as statistically significant factor for DFP (p: 0.025). Sixty-eight patients have died (41%), 26 cases due to bladder cancer (38%) and 42 cases by intercurrences (62%). We didn't find statistically significant factors for OS.
Conclusions: BCG treatment, especially High dose, is a clear choice to improve DFS. CIS associated is an important factor in recurrence and progression of tumors. Close monitoring is required over a long period of time, even at elderly.

RF-01.02
Evaluation of Urinary Continence after Radical Cystectomy and Orthotopic Continent Diversion
Toumy M[1], **Hussein A**[2], Hussein H[2], Abdelhakim M[2], Fayad A[2], Elsherbeeny M[2]
[1]Sabha, Libya; [2]Dept. of Urology, Cairo University, Cairo, Egypt

Introduction and Objectives: Orthotopic continent diversion (OCD) is becoming more popular as it provides, in well selected patients, the best rehabilitation and quality of life for patients after radical cystectomy (RC). Objective: Evaluation of the continence of patients who underwent RC and OCD.
Materials and Methods: This was a retrospective study included 52 patients who underwent RC with Y-shaped ileal neobladder. All patients were continent prior to the procedure. Excluded from the study, patients with prior incontinence, severe urethral disease, severe psychiatric or neurological conditions, impaired renal functions, severe bowel pathology and those with short life expectancy. A self-reported questionnaire was used for follow-up. The exact times of regaining continence, both diurnal and nocturnal, were recorded.
Results: RC with Y-shaped OCD was done for 52 patients; 45 (86.5) men and 7 (13.5) women. Their mean age was 59.6 years (SD±7.3). Nine patients were diabetic (17.3%). Regarding day continence, continence rates were (9.6%, n=5) totally continent, (63.5%, n=33) were using pads for stress incontinence and (23.1%, n=12) were totally incontinent at 3 weeks. At 3 months, (36.5%, n=19) were completely continent, (42.3%, n=22) were still using pads while (17.3%, n=9) were totally incontinent. After 6 months, 24 patients (46.2%, n=24) only became fully continent. The relationship between regaining continence and time was highly significant after 3 weeks (p value < 0.001). Regarding nocturnal continence, by the 3rd week, 28 patients (54%) were dry at night, mostly achieved by awakening once at night for voiding. Rest of the patients (24, 46%) were incontinent. Seventy three percent of patients were continent by 3 and 6 months. Nocturnal continence significantly improved between the 3rd week and the 3rd month (p value < 0.001). Our study did not show age or sex preference for regaining of continence while DM and postoperative leakage were associated with incontinence (p values < 0.001 and 0.004 respectively).
Conclusion: Our study showed that continence improves with time after the procedure. Most patients achieved day-time continence within six months while night-time continence recovered slower. Diabetes mellitus and postoperative urinary leakage were found to be adverse predictors to regaining continence.

RF-01.03
Does Transitional Cell Carcinoma of Urinary Bladder in Patients Under the Age of 30 Change in China?
Huang H, Li X, Jin J
Dept. of Urology, Peking University First Hospital, Beijing, China; and National Urological Cancer Center, Beijing, China

Introduction and Objectives: To evaluate whether transitional cell carcinoma of urinary bladder (TCCB) in patients under the age of 30 has changed in China before and after 2000.
Materials and Methods: The results of our retrospective review of 21 consecutive TCCB patients (17 males, 4 females; age ≤ 30 years) from 2000-2013 were compared with prior report from our hospital during 1980-1999.
Results: In 1980-2013, there were 4567 TCCB patients referred to our hospital, among which 43 cases were under the age of 30 (9.42 per 1000). In a comparison of the study between decades 1980-1999 and 2000-2013, this tumor decreased from 15.8 per 1000 to 6.6 per 1000 (P < 0.05). Although gross hematuria remained the major presenting symptom, the presence of asymptomatic cases increased significantly from 4.5% (during 1980-1999) to 38.1% (during 2000-2013) (P < 0.05). Surgical strategies changed obviously and tended to be less invasive. A shape increase in the use of intravesical instillation therapy for superficial cases postoperative was observed as well (50% vs. 100%, 1980-1999 vs. 2000-2013; P < 0.05). On the other hand, the male to female ratio, cigarette smoking history, multiple/single lesion ratio, pathological distributions and prognosis outcomes remained unchanged.
Conclusion: TCCB in patients under the age of 30 was rare, and to data no study has been performed to identify the changing trends in this tumor expect our study. In our study, changing trends have been found which will play an important role in the further research in this tumor.

RF-01.04
Catheter Free Rate after Cystectomy with Cutaneous Ureterostomy Diversion
Vartolomei M, Morariu S, Martha O, Craciun C, Tilinca M, Sin A, Brad A, Boja R, Dogaru G, Chibelean C
University of Medicine and Pharmacy, Targu Mures, Romania

Introduction and Objectives: Cutaneous ureterostomy (CU) is the simplest and safest among all methods of permanent urinary diversions, but there is also a significant risk of stoma stenosis.

Materials and Methods: We retrospectively reviewed the charts and follow-up data for 22 patients who underwent CU between January 2012 and September 2013 at our hospital in correlation with histology and free catheter rate. The follow-up was 6 months.
Results: From the total of 22 patients included in the study, 11 patients underwent right CU, 2 patients left CU and 9 patients right "double-barrel" ureterostomy. In 8 patients with single cutaneous ureterostomy (and with cystectomy) the contralateral kidney was removed, one of the patients had congenital solitary kidney on right side and 3 patients were admitted in hospital with solitary kidney after a previous nefrectomy. The mean age of the patients was 62.82±8.33 years. Most of them were men 18 and 4 were women. At the 6 weeks follow-up of all patients with single CU we could extract the ureteral catheter. Among the patients with "double-barrel" cutaneous ureterostomy, the withdrawal of both ureteral catheters after 6 weeks was possible only in 4 of 9 patients (44.4% catheter free). These results were maintained at 3 and 6 months follow-up. The catheter free rate after 6 months follow-up was 17/22 (77.27%). The distribution of TNM was 11 cases T2 (in 6 associated *in situ* carcinoma CIS), five T3 (3 cases with CIS) and six were T4. All patient were lymph nodes negative and with no metastasis. The median BMI was 24.7.
Conclusions: There is no ideal urinary diversion till now, but CU could be the first option for urinary diversion in patients with BMI below 25 or with solitary kidney. Also in elderly patients with associated co morbidities or lower life expectancy due to an advanced neoplasia (T3 and T4 stages with lymph nodes and metastasis disease) CU could be used, even bilaterally. Due to the good rate of free catheter we could say that stoma stenosis risk decreases with a good management.

RF-01.05
Management of Node Positive Bladder Cancer following Neo-Adjuvant Chemotherapy and Radical Cystectomy: A Survey of Current UK Practice
Tan W[1,2], Lamb B[1,3], Payne H[4], Hughes S[5], Lane T[6], Adshead J[6], Boustead G[6], Vasdev N[6]
[1]Dept. of Urology, Whipps Cross Hospital, London, UK; [2]Division of Surgery and Intervention Sciences, University College London, London, UK; [3]Dept. of Surgery and Cancer, Imperial College London, London, UK; [4]Dept. of Oncology, University College Hospital, London, UK; [5]Dept. of Oncology, Guy's and St. Thomas' NHS Foundation Trust, London, UK; [6]Dept. of Urology, Hertfordshire and South Bedfordshire Urological Cancer Centre, Lister Hospital, Stevenage, UK

Introduction and Objectives: There is little evidence for the optimal management of patients with nodal disease following neo-adjuvant chemotherapy (NAC) and radical cystectomy (RC) for muscle invasive bladder cancer. This study was done to explore the decisions and rational of Uro-oncology consultants regarding the treatment of patients with muscle invasive bladder cancer who still have lymph node positive disease after neo-adjuvant chemotherapy and radical cystectomy.
Materials and Methods: An electronic survey was sent to UK pelvic cancer centres regarding: 1) choice of neo-adjuvant chemotherapy regime, 2) indications for reimaging, 3) choice and indication of adjuvant chemotherapy for patients with nodal disease post neo-adjuvant chemotherapy and radical cystectomy, 4) choice and indication of chemotherapy regime if patients with advance bladder cancer continue to progress and 5) guidelines used by those surveyed.
Results: Consultant Uro-Oncologists from 20/26 (77%) UK Pelvic cancer-centres responded, treating median 13 patients/year (range: 3-45 patients) with NAC before RC. Three cycles of Gemcitabine and Cisplatin (Gem-Cis) was the most common NAC regimen, with 28/30 and 18/27 respondents giving it for down-staging of cN1 and cN2-3 positive patients respectively. Those surveyed believed a median of 10% of patients have positive pathological lymph nodes following NAC and RC, for whom CT chest/abdomen/pelvis was the most commonly used imaging modality. A total of 45.5% (5/11) would not give adjuvant chemotherapy post NAC and RC in patients with positive lymph nodes. The patient's performance status (9/25) was the most common factor for additional adjuvant chemotherapy followed by response to neo-adjuvant chemotherapy. In the presence of disease progression 46.2% (6/13) of participants would treat patients with a taxane. More than half (12/23) of responders do not follow any guidelines when treating patients with nodal disease post NAC and RC.
Conclusion: In the UK, the treatment of patients with nodal disease following NAC and RC is variable. There is little evidence on which to base the management of such patients. The creation of national and international guidelines may help clinicians to optimise care for these patients.

RF-01.06
Management of Intra-Diverticular Bladder Tumours
Faure Walker N, Gan C, Olsburgh J, Khan S
Guy's Hospital, London, UK

Introduction and Objectives: Intra-diverticular bladder tumours (IDBT) account for approximately 1% of bladder tumours. The risk of developing a tumour within a bladder diverticulum is considered to be higher than in the main bladder due to prolonged contact of potential carcinogens. The lack of muscle layer is thought to facilitate tumour spread and hence confer a worse prognosis. We aimed to modify existing IDBT pathological classification and current surgical guidance.
Materials and Methods: Review of existing literature regarding diagnosis, management and prognosis of pre-malignant and malignant pathologies within bladder diverticulae.
Results: Transitional cell carcinoma is the most common histologic type. Less common variants include squamous, small cell carcinoma and other rare histologic variants. IDBT most commonly present with visible haematuria. Lack of muscle in the diverticula increases the risk of bladder perforation during biopsy and makes pathological staging difficult as there is no T2 stage. T stage is the only factor shown to be associated with survival. There is one specific guideline addressing IDBT management. IDBT may be managed with transurethral resection and adjuvant intravesical therapy, diverticulectomy, partial or radical cystectomy. The prognosis of IDBT has always been perceived to be worse than intra-vesical tumours. However, the only study addressing 5-year survival of IDBT suggested that prognosis may be comparable.
Conclusion: Any IDBT extending beyond the fibrotic band of the lamina propria should be considered T3. Modification of existing surgical guidance is required especially for Ta and T1 IDBT where transurethral resection is associated with increased risks of incomplete resection or bladder perforation.

RF-01.07
The University College Hospital (UCH) Bladder Manikin®: A Locally Designed Teaching Aid for Suprapubic Catheterisation in Low Resource Countries
Olapade-Olaopa O[1,2,3], Adebayo S[2], **Chibuzo I**[2], Takure A[1,2,3], Okeke L[1,2,3], Shittu O[1,2,3]
[1]College of Medicine, University of Ibadan, Ibadan, Nigeria; [2]Dept. of Surgery, University College Hospital, Ibadan, Nigeria; [3]Dept. of Surgery, Ibadan PIUTA Centre, University College Hospital, Ibadan, Nigeria

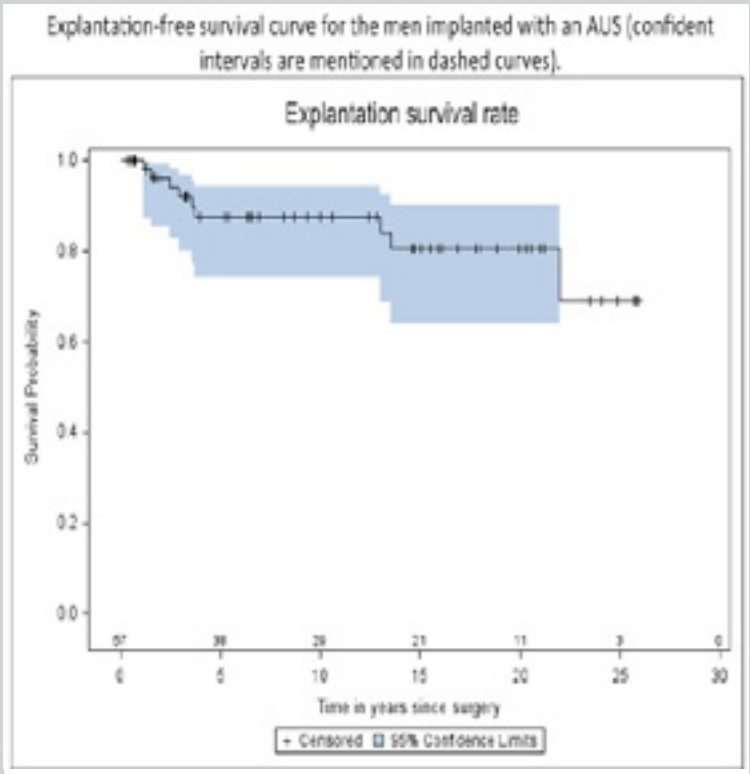
Introduction and Objectives: The skill of emergency suprapubic catheterisation is indispensable to medical practice. It may be done via open or closed techniques. In Nigeria, majority of the general medical practitioners and non-urological residents lack formal training in suprapubic catheterisation (SPC). A low-cost manikin was designed locally for the purpose of training doctors in SPC. This paper describes its development and assesses its usefulness in teaching SPC.
Materials and Methods: A foundation of urology workshop was organised by the Ibadan PIUTA Centre, in March 2013, at which general medical practitioners and non-urological

residents were given instruction in suprapubic catheterisation using the locally manufactured manikin. At the end, questionnaires were administered to evaluate the effectiveness of the manikin in SPC training. Six months later, questionnaires were administered to the surgical residents to evaluate the impact of the training on their practice.
Results: There were twenty-five medical practitioners in attendance, which included eighteen non-urological surgical residents. The others were family physicians and gynaecologists. All were taught the open and closed techniques using the manikin. At the end of the workshop, 100% of the participants stated that the manikin was an effective teaching aid. Six months later, 67% of the surgical residents had independently performed successful SPCs. The closed technique was used by 83%, while 17% used both open and closed methods.
Conclusion: The UCH bladder manikin is an effective, low-cost and easily manufactured aid for teaching doctors emergency suprapubic catheterisation. We recommend its use by other centres in low resource countries.

RF-02.01
Long-Term Functional Outcomes after Artificial Urinary Sphincter (AMS 800) Implantation in Men with Stress Urinary Incontinence
Léon P[1], **Chartier-Kastler E[1]**, Rouprêt M[1], Ambrogi V[2], Mozer P[1], Phé V[1]
[1]Dept. of Urology, Pitié-Salpétrière Academic Hospital, Assistance Publique-Hôpitaux de Paris, Pierre and Marie Curie Medical School, Paris 6 University, Paris, France; [2]Dept. of Statistics, Pitié-Salpêtrière Academic Hospital, Assistance Publique-Hôpitaux de Paris, Pierre and Marie Curie Medical School, Paris 6 University, Paris, France

Introduction and Objectives: Artificial urinary sphincter (AUS) is the gold standard surgical treatment of male stress urinary incontinence (SUI) with sphincter deficiency since the '80s. To evaluate long-term functional outcomes of AUSs and to determine how many men required explantation because of SUI caused by sphincter deficiency after prostate surgery.
Materials and Methods: Men who had undergone placement of an AMS 800 between 1984 and 1992 to relieve SUI caused by sphincter deficiency after prostate surgery were included. A peribulbar AUS was surgically inserted. Continence, defined as no need for pads, was assessed at the end of the follow-up. Kaplan–Meier survival curves estimated the survival rate of the device without needing explantation or revision.
Results: Fifty-seven consecutive patients were included (median age 69 years; IQR: 64–72). Median duration of follow-up was 15 years (IQR: 8.25–19.75). At the end of follow-up, 25 patients (43.8%) still had their primary AUS. Explantation of an AUS was done in nine men because of erosion (n=7) and infection (n=2). Survival rates, without AUS explantation, were 87, 87, 80, and 80% at 5, 10, 15, and 20 years, respectively (Figure 1). Survival rates, without AUS revision, were 59, 28, 15, and 5% at 5, 10, 15, and 20 years, respectively. At the end of the follow-up, in intention-to-treat analysis, 77.2% of patients were continent.
Conclusion: In the long-term (>10 years) the AMS 800 can offer a high rate of continence to men suffering from SUI caused by sphincter deficiency, with a tolerable rate of explantation and revision.

RF-02.01, Figure 1.



RF-02.02
An Update on the 2-Year Outcome of the Transobturator Bulbar Male Sling (TOMS) in the Treatment of Male Stress Urinary Incontinence
Bütow Z[1,2], Yiou R[1], de la Taille A[1], Audureau E[1], Salomon L[1]
[1]Henri Mondor Teaching Hospital, Creteil, France; [2]University Clinic of Saarland, Homburg, Germany

Introduction and Objectives: To evaluate the long-term outcome of patients treated for post-radical prostatectomy (pRP) urinary incontinence (UI) via a transobturator bulbar male sling (TOMS).
Materials and Methods: We prospectively followed 38 patients with pRP-UI at baseline, six, 12 and 24 months after implantation of the TOMS. Urinary symptoms were evaluated using the following questionnaires: ICIQ, UCLA-PCI (urinary bother domain), PGI-I, USP and daily pad use. Success was defined as patients wearing no pads or using one security pad. We also reported any other surgical procedures for persistent incontinence in the follow-up.
Results: Across the board, there was a statistically significant improvement in the ICIQ, UCLA-PCI, PGI-I, the daily pad requirement and the USP-SUI (stress urinary incontinence), post-operatively. Of the 38 patients with a 2-year follow-up, seven patients required additional surgical treatment. These patients were characterized pre-operatively with a higher daily pad requirement (p=0.042) as well as a higher USP-SUI (p=0.032). Of the remaining patients (n=31), a statistically significant decrease of PGI score (p=0.049) was noted over time and the ICIQ score had a tendency to decline although not significantly (p=0.071). The rate of patients wearing no pads post-operatively over two years was successively 58.0%, 54.83%, 48.38% (p=0.44).
Conclusion: Nearly half of patients continue to wear no pads two years after TOMS implantation although patient satisfaction does decrease over time. Patients with more severe incontinence did not respond to treatment and needed

complimentary treatment.

RF-02.03
The Use of Polyacrylamide Hydrogel (Bulkamid) in Complex, Refractory Urinary Incontinence
Bütow Z[1,2], Yiou R[1], de la Taille A[1], Salomon L[1]
[1]Dept. of Urology, Henri Mondor Teaching Hospital, Créteil, France; [2]Dept. of Urology, University Clinic Saarland, Homburg, Germany

Introduction and Objectives: To evaluate the long-term outcome of complex, refractory urinary incontinence in patients treated with polyacrylamide hydrogel (Bulkamid).
Materials and Methods: After administering Bulkamid, we prospectively followed-up 23 patients over 24 months. Patients selected for this treatment had previously had complex pelvic surgery, urinary incontinence surgery or were too unfit for general anesthesia. The evaluations were based on patient questionnaires at baseline, six, 12 and 24 months. The USP, ICIQ, UCLA-PCI (urinary bother domain), PGI-I and daily pad use was evaluated.
Results: Across the board, there was a statistically significant improvement in the daily pad requirement, UCLA-PCI, ICIQ, PGI-I, the USP-SUI (stress urinary incontinence), the USP-OAB (over-active bladder), but also an increase in the USP-obstructive symptoms. At 24 months, four patients were excluded due to loss of follow and complimentary treatment. Besides a urinary tract infection, no adverse events were documented. Eight patients had Bulkamid re-administered at an average delay of 301days. Despite re-administration, a decrease in efficacy was seen between 12 and 24 months (no of pads used, UCLA-PCI, ICIQ, USP-OAB), although the patient's general impression of improvement remained stable.
Conclusion: Bulkamid is a feasible treatment option for complex urinary incontinence, with good patients' satisfaction. The effect however seems to be time-dependent despite re-administration.

RF-02.04
A 5-Year Single-Center Experience on Laparoscopic Sacrocolpopexy
Baltazar P, Patena Forte J, Campos Pinheiro L
Hospital de São José, Lisbon, Portugal

Introduction and Objectives: The pelvic organ prolapse is a frequent pathology in multiparous postmenopausal women, associated with changes in quality of life, bladder, bowel, and sexual dysfunctions. The laparoscopic approach for pelvic pavement reconstruction in women with pelvic organ prolapse is a well-accepted technique, with excellent surgical results and high satisfaction rates. The aims of this study are: to review and describe the most important aspects of the laparoscopic sacrocolpopexy procedure; to review the surgical indications and possible outcomes of laparoscopic sacrocolpopexy; to report the surgical experience of the Urology Department of Hospital de São José (Lisbon) in the last 5 years; to assess the clinical and functional outcomes for sexual, bladder and bowel domains.
Materials and Methods: The pelvic organ prolapse was quantified by the "*Pelvic Organ Prolapse Quantification Scale*" (POP-Q); The functional outcomes was assessed by the "*International Consultation in Incontinence Questionnaire for Vaginal Symptoms*" (ICIQ-VS) and directed questions; A database was kept prospectively in the last 5 years for all laparoscopic sacrocolpopexies in the Urology Department of Hospital de São José.
Results: In the last 5 years in this center, 28 laparoscopic sacrocolpopexies were performed; a subtotal hysterectomy was performed in 14 patients and a transobturator tape for prevention/correction of stress urinary incontinence was applied in 13 patients. Mean patient age was 63.5 years (range 44 to 83); Mean operative time was 248 minutes (range 145 to 380). Mean length of stay was 4.7 days (median: 3). A total of 8 patients (28.57%) had one or more complications which were intraoperative (3) and postoperative (9). Intra-operative complications were 2 bladder perforations and 1 bowel perforation. Post-operative complications were erosion of vaginal vault (1), occasional pain in lower abdomen (1), *de novo* stress urinary incontinence (5), rectocele relapse (1) and enterocutaneous fistula (1). Satisfaction rate was 96.4%.
Conclusion: Laparoscopic sacrocolpopexy is a well-accepted procedure for correction of complete pelvic organ prolapse. Our results confirm the efficacy of this procedure, the low long-term morbidity rate, high satisfaction level and good clinical and functional outcomes in sexual, bladder and bowel domains.

RF-02.05
Management of the Male Urethral Diverticulum Post Hypospadias Repair
Pai A[1], Vijayan R[2], Malone P[1]
[1]Royal Berkshire Hospital, Reading, UK; [2]Queen Victoria Hospital, East Grinstead, UK

Introduction and Objectives: Men presenting with urethral diverticulae after hypospadias repair are challenging to manage due to the relative rarity of this complication and the range of techniques required in this complex revision surgery. We describe the differing surgical techniques used for the management of men with symptomatic urethral diverticula after a previous hypospadias repair.
Materials and Methods: Four consecutive males at a single institution were treated by a single surgeon, for symptomatic urethral diverticulum at a single institution over a ten year period. We describe and illustrate the surgical techniques employed in each case including: diverticulectomy and primary repair, substitution urethroplasty using local diverticular tissue and the use of diverticular tissue as a free graft in a two stage procedure.
Results: Four patients with a median age of 43 (range 9 to 44) were treated with a mean follow-up of 53 months. Their presenting complaints included recurrent UTI's, voiding symptoms and penile bulge. One patient, who had simple excision, was found to have no stricture and a small diverticulum containing a hair ball. Two patients with diverticulae, fistulae and concomitant strictures were treated with urethroplasty using local diverticular tissue. One patient with a diverticulum and coronoal hypospadias was treated with diverticular tissue used as a free graft. No patients had complications at final follow-up.
Conclusion: We describe the range of techniques required to treat diverticulae and associated strictures in hypospadias revision surgery. We uniquely describe the use of diverticular tissue as a free graft, precluding the need for buccal mucosal graft.

RF-03.01
Metabolic Evaluation of Children with Urolithiasis
Gouru V, Vaddi S, Godala C, Vasanthu V, Kumar A
Narayana Medical College, Andhra Pradesh, India

Introduction and Objectives: Urolithiasis in pediatric age group is an important cause of morbidity. There are usually underlying metabolic abnormalities in children with urolithiasis. A thorough risk assessment and metabolic evaluation should be performed to identify children at risk for stone disease and to identify specific treatable metabolic derangement.
Materials and Methods: Between August 2012 and January 2014, children up to age 15 years who presented with urolithiasis are included in the study. This is an observational study. Consecutive patients with renal stones were prospectively evaluated with relevant history; urine and serum testing is combined with stone analysis and 24hr urinary volume parameters including creatinine, calcium, citrate, oxalate, uric acid, sodium, potassium, magnesium, phosphorus were assessed.
Results: Thirty two patients were included in the study (9 girls, 23 boys). Age ranges from 8 months to 14 years. Twenty one out of 32 patients underwent stone analysis. Calcium oxalate was a major composition in 12 patients (12/23). Uric acid, struvite, ammonium urate, silicon oxide (a rare variant) is seen in 2 patients each. Lithorisk profile was done in 21 patients. Sixteen patients underwent both stone analysis and lithorisk profile. Eighteen out of 21 had hyperuricosuria, 15/21 had hypercalcuria,

12/21 had hypernatriuria, 12/21 had hyperphosphaturia, 12/21 had hyperoxaluria. Urine Ca/Cr ratio Values exceeding 0.20 are found in 15/21 patients.
Conclusion: A metabolic abnormality can be identified in 90% of cases of urolithiasis. Hyperuricosuria is found to be most common metabolic abnormality found in our patients. Most stones are calcium-based. Because of the prevalence of metabolic risk factors and the significant risk of recurrence in this population, all children require a complete evaluation with metabolic workup. Treatment protocols for each patient are tailored individually according to the metabolic evaluation findings.

RF-03.02
Dexmetomidine as a Sole Agent in Caudal Anesthesia in Pediatric Patients Undergoing Surgical and Urological Procedures
Hussein A[1], Hussein H[1], Eltantawy M[2]
[1]Dept. of Urology, Cairo University, Cairo, Egypt; [2]Dept. of Anesthesia, Cairo University, Cairo, Egypt

Introduction and Objectives: Since introduction of bupivacaine it was routinely administered in caudal anesthesia whether alone or with other adjuvants in different concentrations, Dexmetomidine was used as an adjuvant to bupivacaine in many studies. Can it be used alone, what dose, possible effects and undesirable effects will be studied.
Materials and Methods: Forty patients undergoing Surgical and Urological procedures (aging from 40 days to 7years), were recruited for this study and were blindly divided into 2 groups: Group A: 20 patients were given 2.5 mg/kg bupivacaine diluted to a volume of 0.75 ml/kg, diluted in normal saline. Group B: 20 patients were given 0.75 mcg/kg Dexmetomidine diluted to a volume of 0.75ml/kg, diluted in normal saline. Preoperative blood pressure, heart rate and random blood sugar (expected to rise as a stress response) were measured and monitored on surgical incision and then 1 hour, 2 hours and 4 hours post incision. Objective pain score was observed for each patient 2 and 4 hours post incision. Also, random blood sugar was measured 2 hours and 4 hours post incision. All incisions were mid to lower abdominal. Objective pain score included: systolic blood pressure, crying, movement in bed, agitation and complaint of pain for children above 3 years. With score 0 means no pain and score 10 means the worst imaginable pain.
Results: In Group A: there was a significant increase (p value.000) in random blood sugar after 2 hours of incision. Objective pain score after 2 hours of incision ranged from 0-3 with median of 2 and after 4 hours the range became from 1-3 with median of 2. In Group B: there was a less significant change (p value.043) in random blood sugar 2 hours after incision. Objective pain score after 2 hours of incision ranged from 0-3 with median of 1 and after 4 hours it remained the same.
Conclusion: Dexmetomidine, when given caudally, has an analgesic action that overweighs and lasts for a longer time than bupivacaine and avoids the possible complications of bupivacaine.

RF-03.03
Management of Pouch Stones in a Pediatric Cohort: Single Center Experience
Nabeeh H, Helmy T, Abdelhaleem A, Ghanem W**, Wadea A**, Mahmoud O, Nageib M, Dwaba M, Hafez A
UNC, Mansoura, Egypt

Introduction and Objectives: To report our experience with different approaches for management of pouch stones in children with ileal based urinary reservoir.
Materials and Methods: A retrospective review was performed through our electronic data base for children who underwent ileal based urinary reservoirs between 2000 and 2009. Patients who were diagnosed with reservoir calculi were identified; Medical Records were perioperative reviewed for patients' demographics, diversion details, stone criteria, mode of treatment, complications and recurrence rate.
Results: We identified 26 patients with pouch stones requiring surgical intervention after urinary diversion in children. There were 11 boy (42%) and 15 girl (58%), the average age was 11 (range 4-16) years, the main presentation was incidentally discovered in 10 cases (39%), haematuria in 9 (34%), pain in 6 (23%) and urine retention in 1 case (4%). Fifteen cases were post bladder augmentation and 11 cases post bladder neck closure augmentation ileocystoplasty and continent cutaneous outlet. all cases underwent urinary diversion for non malignant causes. The mean stone size was 4cm (range 1-10cm) and mean HU was 672 (range 205-1091). Twenty two children had positive urine culture while 4 were sterile. 9 (35%) children required open poucholithotomy while 17 (65%) patients were managed endoscopically, percutaneouse approach was done in 8 and urethral access was used in 9 children. Mechanical extraction was performed in 7 and stone disintegration was required in 10 cases. Small pouch injury was inflicted in 2 patients that was required prolonged catheterization. Six children develop stone recurrence after, all were after endoscopic disintegration and all required redo endoscopic extraction.
Conclusion: Pouch stone is an established long-term complication of urinary diversion. Open and endoscopic approaches are feasible in this cohort, but recurrence is high after endoscopic approach.

RF-03.04
Routine Meatal Dilatation after Hypospadias Surgery: Is It Valuable?
Hussein A, Hussein H
Dept. of Urology, Cairo University, Cairo, Egypt

Introduction and Objectives: It is a prospective study aiming at studying the value of meatal dilatation as a routine practice after corrective surgery for hypospadias.
Materials and Methods: Forty patients with distal type of hypospadias aging from 6 months to 6 years were included in the study. As a rule, tubularized incised plate (TIP) procedure was done for all cases. Nine of the patients were recurrent cases. The catheter was removed after 1 week in all patients. Patients were randomly distributed into 2 groups, each has 20 patients. Dilatation of the meatus was done on daily basis for 3 weeks for patients of the 1st group. No dilatation was done for those of the 2nd, the control group. Complications, namely meatal stenosis, recurrence and fistula formation were observed in the 2 groups.
Results: In the first group, 3 patients developed meatal stenosis, 3 patients had a fistula with no recurrence rates (15% total complication rate and 7.5 recurrence rate). In the second group, 6 patients had meatal stenosis, 2 fistulae with no recurrence rate (20% total complication rate and 5% fistulae formation and no recurrence).
Conclusions: Routine meatal dilatation is an easy practice which is adopted by many pediatric surgeons aiming at reducing postoperative complications. However, it does not seem to significantly reduce the complications.

RF-03.05
Efficacy of Tamsulosin and Tadalafil as Monotherapy and in Combination in Patients with Symptomatic BPH: A Prospective Study
Singla K, Mete U, Mandal A
Post Graduate Institute of Medical Education and Research, Chandigarh, India

Introduction and Objectives: LUTS and erectile dysfunction (ED) are highly prevalent and often coexist in the elderly. We assessed the efficacy of Tamsulosin and Tadalafil as monotherapy or in combination in terms of improving LUTS, sexual function and urodynamic parameters in patients with BPH.
Materials and Methods: A total of 45 men, 40 years or older with symptomatic BPH were prospectively randomized in an open label study to receive Tamsulosin (Group A, n=15), Tadalafil (Group B, n=15) or a combination (Group C, n=15). Patients were assessed at baseline and at the end of 3 months. Outcome was measured in terms of change in IPSS, QOL, IIEF-5 and urodynamic parameters (Qmax, PdetQmax and PVR).
Results: The three groups were comparable in terms of the baseline characteristics. A

RF-03.05, Table 1. Comparison of Clinical and Urodynamic Parameters Before and After Treatment in Group A, B and C

	Group	Baseline [X]	3 months [Y]	Mean Change [X-Y]	p
IPSS	A	15.27±6.8	7.33±3.71	7.93±6.90	0.001
	B	14.40±6.506	7.40±4.53	7.00±5.59	<0.001
	C	13.13±6.12	7.33±3.87	5.80±5.51	0.001
QOL	A	3.87±1.30	1.67±0.90	2.20±1.61	<0.001
	B	3.07±1.16	2.00±0.66	1.07±1.16	0.003
	C	2.67±1.29	2.20±1.08	0.47±1.25	0.169
IIEF-5	A	10.87±10.41	11.07±10.55	-0.20±0.77	0.334
	B	17.40±6.62	20.20±7.27	-2.80±4.75	0.039
	C	19.52±6.27	22.53±3.69	-3.00±3.33	0.004
Qmax (mL/sec)	A	7.93±4.06	7.00±2.95	0.93±3.32	0.296
	B	6.93±2.94	7.67±4.03	-0.73±-2.25	0.228
	C	9.27±4.37	8.12±3.44	1.13±3.29	0.204
PdetQmax (cmH20)	A	62.20±19.57	58.20±16.0	4.00±12.63	0.240
	B	75.13±43.71	72.93±43.42	2.20±12.64	0.511
	C	56.33±21.2	54.27±21.01	1.07±10.95	0.712
PVR (mL)	A	73.00±72.11	82.20±97.76	-9.20±99.8	0.726
	B	96.93±100.91	86.67±54.17	10.24±112.43	0.729
	C	71.47±71.98	36.53±46.93	34.93±57.88	0.035

statistically significant improvement in IPSS score [7.93±6.90 (p=0.001) in Group A, 7.00±5.59 (p<0.001) in Group B and 5.80±5.51 (p=0.001) in Group C] was observed in all the three groups. However, there was no significant difference on intergroup comparison (p=0.628). There was a significant improvement in the QOL Index in Group A (p<0.001) and B (p=0.003). The mean IIEF improved in all the three groups. The mean change in Qmax, PdetQmax and PVR observed at the end of the study period were insignificant and similar in all the three groups (Table 1). Adverse events (headache and body aches) were noted more frequently in Group C although none discontinued treatment.

Conclusions: Tamsulosin and Tadalafil significantly improved LUTS. A combination therapy did not offer added benefit. Tadalafil alone and in combination showed significant improvement in erectile function. The subjective improvement in LUTS was not reflected in urodynamic parameters.

RF-03.06

Assessment and Management of Lower Urinary Tract Symptoms: A Comparative Study between Uganda and the UK

Bing A[1], **Pai A**[2], Banya F[3], Tweedie B[4], James A[2], Okumu G[3]

[1]University of Aberdeen, Aberdeen, UK; [2]Royal Berkshire Hospital, Reading, UK; [3]Kisiizi Hospital, Kabale, Uganda; [4]Royal Infirmary of Edinburgh, Edinburgh, UK

Introduction and Objectives: In the UK, 30% of men over 65 have moderate to severe lower urinary tract symptoms (LUTS). There has been little research carried out to establish the prevalence of LUTS in Uganda or neighbouring countries. The International Prostate Symptom Score is recommended by the WHO and is the most commonly used tool to evaluate male LUTS.

We aimed to between Kisiizi Hospital, Uganda and two UK hospitals:

- Establish the severity of LUTS
- Compare attitudes towards LUTS
- Compare management of LUTS.

Materials and Methods: Prospective data collection from 160 patients aged 45-85. Eighty men from Kisiizi Hospital, Uganda, and 80 men from two UK hospital centres: the Royal Infirmary of Edinburgh and the Royal Berkshire Hospital, Reading. Exclusion criteria: urological presenting complaint, indwelling catheter, current or recent urinary tract infection, neuropathic bladder, previous prostatectomy. All patients completed the International Prostate Symptom Score Survey. Additional information was collected on; age, distance travelled for treatment, occupation, education level, relevant drug history and co-morbidities. Statistical analysis was performed using graph pad prism, including student's T test, Spearman ratio and Mann Whitley test.

Results: In both groups:

- Increased age was associated with worsening IPSS score (p<0.0001)
- A worsening symptom score was associated with a worse quality of life score (p<0.0001).

There was no difference in severity of LUTS (p=0.9741) between the two groups. Eighty seven percent of men with severe LUTS in the UK group had Quality of Life score of 4 to 6, in comparison to 60% in the Ugandan group (p=0.0476). In patients with severe LUTS, 39% of U.K. patients had medical management, compared to none of the Ugandan men.

Conclusion: Limitations of our study include the fact that the IPSS is not available in the local languages, and we relied on the local physicians to translate the questions to the patients. This could have introduced an element of bias if the questions were misinterpreted. Cultural background and expectations play an important role in management of LUTS, highlighting the importance of the patient's perception of symptoms. In addition, the contrasting access to urological services between Uganda and the UK is demonstrated.

RF-03.07

Assessment of Open and Endoscopic Simple Prostatectomies

Muśko N, Dobruch J, Piotrowicz S, Powroźnik J, Kawecki S, Borówka A

European Health Centre Otwock, Otwock, Poland

Introduction and Objectives: According to EAU Guidelines open, simple prostatectomy remains one of the therapies offered to men with benign prostate obstruction (BPO). Currently, many alternative minimal invasive endoscopic techniques are available. However, in

the majority of cases with large prostates, open surgery is still implemented. Objective: The comparison of open and endoscopic surgery in patients with prostate volume over 100 ml was done.
Materials and Methods: Between 2011 and 2014, 43 simple prostatectomies were done for symptomatic patients with benign prostatic obstruction, and the prostate volume exceeding 100ml measured by transrectal ultrasound. The patients were subjected to surgery oft wo kinds: open one (26) and endoscopic one: extraperitoneal, transvesical simple prostatectomy (17). The perioperative outcomes were compared.
Results: The mean duration of open surgery was 2 hours. The blood was supplemented in 18/26 (69%) Corresponding values for endoscopic procedures were 2h and 48 minutes and only 2/17 (11%) The average time of hospitalization was 6.7 days and 8.26 days for endoscopic and open surgeries respectively. However, there was 1 case of conversion from endoscopic to open surgery due to bleeding that could not be controlled by endoscopic manner. The time of catheterisation in case of endoscopic and open surgery was similar.
Conclusions: The minimally invasive approach represents an alternative to open surgery for the treatment of the BPO in patients with large prostate glands. It provides similar functional results, yet brings all advantages of endoscopic management. There is almost no need for blood transfusion and time of hospitalization is shorter .However the procedure is time consuming and should be performed in experienced centers.

RF-04.01
Does Incidental Detection Give Survival Benefit for Surgically Treated Renal Cell Cancers? A Pair Matched Case-Control Study
Abdelbaky A**, Kuruvilla S**, Rix D, Thomas D, Soomroo N, Johnson M
Freeman Hospital, Newcastle-upon-Tyne, UK

Introduction and Objectives: Incidentally detected renal cell carcinoma (IRCC) represents almost 50% of renal tumors. While surgical treatment to those tumors was initially expected to improve survival for those patients, this has not been proven.
Materials and Methods: Patients who had radical or partial nephrectomy (completely excised) for RCC between the years 2005 and 2007 were the pool for selection. Patients who had a clearly documented mode of presentation and at least five years of follow-up with a scan at the end of the period were included. Incidentally diagnosed tumors (IRCC) are defined as tumors diagnosed on imaging to investigate another medical condition. Patient with IRCC were pair matched with those who presented with symptoms (SRCC) such as pain, haematuria, abdominal mass, and loss of weight. The cases were matched based on their T stage, Fuhrman grade and tumor size (allowing 5mm difference). Five years survival and presences of metastasis were compared amongst both groups. Comparison was done using paired t test and p value <0.05 was considered significant.
Results: Of 322 patients who had operations between 2005 and 2007, 135 fulfilled the inclusion criteria. Tumors were incidentally diagnosed in 69 patients and 66 were symptomatic. We could match 35 pairs of cases. The mean age at the IRCC group was 56.44 compared to 61.88 at the SRCC group (p value=0.267). Each group had 15 patients with T1a stage, 11 T1b, 2 T2a and 7 were T3a. 17 pairs had a Furhman grade of 2, 9 pairs were graded 3 and 9 had both grades 2 and 3. Mean size of tumors was 51.94 and 52.69 mm at the IRCC and SRCC groups respectively (p=0.214). Five years survival was 100% and 97% at the IRCC and the SRCC groups respectively (p=0.324). Five patients in the IRCC group (14.28%) developed metastasis during the five years follow-up compared to 3 at the SRCC (11.45%); P=0.4875.
Conclusion: Mode of detection did not affect the prognosis of patients with RCC after surgical treatment in this series.

RF-04.02
Volumetry Can Predict Early Renal Function after Nephron Sparing Surgery in Solitary Kidney Patients
Kuru T[1], Zhu J[1], Popeneciu I[1], Rudhardt N[1], Hadaschik B[1], Teber D[1], Hohenfellner M[1], Zeier M[1], Pahernik S[1], Roethke M[2]
[1]University Hospital Heidelberg, Heidelberg, Germany; [2]German Cancer Research Center, Heidelberg, Germany

Introduction and Objectives: To investigate the impact of tumor volumetry on preoperative imaging in predicting post-operative renal function. Nephron sparing surgery (NSS) in renal cell carcinoma (RCC) is the standard treatment for T1 kidney tumors. Resection of kidney tumors in solidary kidneys needs precise preoperative counseling of patients regarding post-operative renal function.
Materials and Methods: Patients planned for renal tumor surgery who underwent prior nephrectomy on the contralateral side were included. We identified 35 patients in our database that underwent NSS in solitary kidneys and met the inclusion criteria. Tumor volumetry was performed on computer tomography (CT) or magnetic resonance imaging (MRI) with the Medical Imaging Interaction Toolkit (MITK). Clinical and pathological data were assessed. Follow-up data included renal function over 3 years.
Results: Mean age was 64±8.1 years. Mean tumor size on imaging was 27.5±48.6cc. Mean kidney size was 195.2±62.8cc and mean residual kidney volume was 173.4±65.3cc. We found a correlation between renal function (MDRD) and residual kidney volume on imaging 1-week post-surgery (p=0.038). Mid- and long-term renal function was not associated with residual kidney volume.
Conclusion: Tumor volumetry can predict early renal function after NSS.

RF-04.03
Rethinking pT3 Renal Cell Carcinoma Staging: External Validation of Previously Proposed TNM Updates
Ramos R[1], Rolim N[2], João R[3], Lúcio R[4], Carneiro R[1], Lencastre J[1], da Silva J[1], Silva E[1]
[1]Instituto Portugês de Oncologia de Lisboa, Lisbon, Portugal; [2]Centro Hospitalar Lisboa Ocidental, Lisbon, Portugal; [3]Centro Hospitalar Lisboa Central, Lisbon, Portugal; [4]Fundação Champalimaud, Lisbon, Portugal

Introduction and Objectives: TNM pathological classification, last updated in 2009, is the cornerstone for establishing renal cell carcinoma prognosis. Areas of potential improvement for the current TNM system concerning pT3 tumors have been identified and a restaging proposal has been published by Ficarra et al in 2007. Our objective was to compare the prognostic analysis using the present and proposed TNM systems aiming at a better stratification for patients with vascular invasion.
Materials and Methods: Multicenter retrospective study. Inclusion criteria: patients with renal cell carcinoma and venous involvement (pT3a-c) who underwent radical nephrectomy between 2008 and 2012. Venous thrombus presence was classified according to 0-IV Neves and Zincke classification (level 0 meaning renal vein thrombus). Patients with isolated fat invasion were excluded. A comparative analysis of Kaplan-Meier survival curves was performed both for the current TNM system pT3a-c tumors and for previously proposed reclassifications: Group A – infradiaphragmatic venous invasion (pT3a (n) by Ficarra et al) or Group B - infradiaphragmatic venous and fat invasion (pT3b (n) by Ficarra et al).
Results: Sixty one patients with venous invasive renal cell carcinomas were included, 68.9% men, with mean age of 63.7 years (interquartile range: 53.4-72.8). Median follow-up time was 13.3 months (interquartile range: 5.2-26.3 months). Cancer specific survival at twelve months was 58.1%, 85.7% and 50.0% for pT3a (isolated fat invasion not included), pT3b and pT3c, respectively. Survival differences between tumor thrombus levels 0-III were not significant both for isolated venous involvement and with concomitant fat invasion. Survival between isolated level I-III thrombus and concomitant level 0 thrombus with fat invasion was also not statistically different. At the present follow-up, Kaplan-Meier survival

curve for the current TNM system failed to reach significant differences for the overall pT3 group, pT3a versus pT3b and pT3b versus pT3c tumors. In contrast, comparison between Group A (infradiaphragmatic venous invasion) and B (infradiaphragmatic venous and fat invasion) was significantly different (p=0.04).
Conclusion: The current TNM system pT3 tumor is apparently composed of heterogeneous patient groups. At short follow-up, reclassification in isolated venous or concomitant venous and fat invasion may enable superior prognostic accuracy.

RF-04.04
Outcomes of Radical Nephrectomy for End Stage Renal Failure (ESRF) Patients with Renal Cell Carcinoma (RCC)
Lu J, Tay M, Wu F, Raman L, Tiong H
National University Hospital, Singapore

Introduction and Objectives: Patients with ESRF have an increased risk of developing RCC, yet at the same time they are at increased risk of perioperative complications due to their comorbidities. We aim to review and evaluate the outcomes of ESRF patients undergoing radical nephrectomy for RCC.
Materials and Methods: From our approved institutional database of patients who underwent radical nephrectomies (n=171) at the National University Hospital from Jan 2010 to Mar 2014, 13 patients with ESRF were identified. Clinical review data as well as outcome data were analyzed retrospectively.
Results: A total of 77% of the patients were diagnosed incidentally on cross-sectional imaging. Mean age at surgery was 55 (range 24 to 75) years; 54% of the patients had renal transplants; 85% of the patients had ASA status of 3 or more and 85% had 2 or more cardiovascular co-morbidities. The majority of the cases were performed laparoscopically (4 transperitoneal, 7 retroperitoneal). Mean operative time was 161±49 mins and median length of stay was 6 (range 3 to 16) days. Three patients developed post-op (Clavien 1 and 2) complications. All cancers removed had clear margins with the majority of tumors having clear cell histology (n=5), Furhman grade 2 and below (n=6). Mean tumor size was 2.6±2.2 cm. Over a median follow-up period of 18 (range 1 to 38) months, overall survival was 92%; disease free survival was 85% with 2 patients developing distant metastases on follow-up imaging. None of the patients developed local recurrence.
Conclusion: In selected patients, minimally invasive radical nephrectomy for ESRF patients with multiple co-morbidities is feasible and with good short-term cancer and patient survival rates.

RF-04.05
MRI/Ultrasound-Fusion Biopsy Detects Significantly More Prostate Cancer as a Standard TRUS-Biopsy in Patients with Prior Negative Prostate Biopsy
Borkowetz A, Zastrow S, Froehner M, Koch R, Wirth M
TU Dresden, Dresden, Germany

Introduction and Objectives: Multiparametric prostate magnetic resonance imaging (mpMRI) combined with ultrasound targeted fusion biopsy has been presented as a promising method in detection of prostate cancer (PC). We compared MRI/Ultrasound-fusion biopsy to standard TRUS-biopsy in patients with previous negative prostate biopsy and first biopsy.
Materials and Methods: We enrolled 133 patients (110 with repeat and 23 with first prostate biopsy) from October 2012 and December 2013. Patients undergoing repeat biopsy had at least one prior biopsy (mean 2 prior biopsies). All patients were evaluated by 3T mpMRI, applying the Prostate Imaging-Reporting and Data System (PI-RADS). All patients received MRI/Ultrasound-fusion biopsy transperineally (mean 9 cores) and, additionally, a standard TRUS-guided biopsy (mean 13 cores). Study design: patients serve as their control.
Results: PC was detected in 54% (59/110) of the patients with repeat biopsy (mean age 65 years, mean PSA-level 13ng/ml). In repeat biopsy, PC was proven in 47% (52/110) of the cases by MRI/Ultrasound-fusion biopsy and in 27% (29/110) of the cases by standard biopsy (p=0.0002). In 56% (13/23) of patients with first biopsy, PC was detected (mean age 62 years, mean PSA-level 8ng/ml). In first biopsy, PC was detected in 52% (12/23) of the cases by MRI/Ultrasound-fusion biopsy and in 43% (10/23) of the cases by standard biopsy (p=0.371). Regarding total number of cores, a significantly higher proportion of positive cores prove PC by MRI/Ultrasound fusion biopsy in repeat biopsy (16% (172/1051) vs. 5% (74/1384); p<0.0001), but not in first biopsy (20% (40/21) vs. 17% (48/277); p=0.6423).
Conclusion: The MRI-targeted TRUS-guided fusion biopsy is associated with a high detection rate of clinically significant prostate cancer while taking fewer cores both in primary and repeat biopsies. Especially patients with prior negative biopsy and requiring repeat biopsy benefit from MRI/Ultrasound-fusion biopsy.

RF-04.06
Quality of Life and Late Urinary Morbidity in Patients Submitted to Prostatic Brachytherapy for Localized Prostate Cancer
Baltazar P, Patena Forte J, Campos Pinheiro L
Hospital de São José, Lisbon, Portugal

Introduction and Objectives: Brachytherapy is a valid treatment option for localized prostate cancer, frequently associated whit low morbidity and good health related quality of life (HR-QoL) levels. There are few randomized studies relating the late urinary morbidity and HR-QoL in patients submitted to prostatic brachytherapy. The aims of this study are: to study the late urinary morbidity and HR-QoL in patients submitted to prostatic brachytherapy; to assess the impact of pre-treatment IPSS score in the development of urinary morbidity; to assess and characterize late urinary morbidity and HR-QoL in patients submitted to prostatic brachytherapy; to assess the impact of urinary incontinence in HR-QoL and patient global satisfaction.
Materials and Methods: All patients submitted to prostatic brachytherapy between October 2003 and October 2013 in Hospital de São José (Lisbon) were asked to answer the EPIC, AUA-SS and ICIQ-SF questionnaires. The results were treated in function on pre-treatment IPSS score, patient's age and time since the brachytherapy date.
Results: From 410 patients, 11 died and 133 (32.4%) validly answered the questionnaires. The median follow-up was 4.32 years (SD=2.5 years). The development of specific low urinary tract symptoms was independent of pre-treatment IPSS score. Nocturia was the main developed symptom. 30.82% of patients suffer from some degree of urinary incontinence, but only 13 patients (9.77%) said it was a severe problem. The development of urinary incontinence has an important impact on global satisfaction. There was a possible relation between pre-treatment IPSS score and the development of LUTS, urinary incontinence and urinary bother.
Conclusion: The presence of pre-treatment LUTS does not significantly influence the development of specific LUTS but has an impact in global urinary morbidity development in patients submitted to prostatic brachytherapy; The most prevalent symptom was nocturia; Incontinence appears to be a sub estimated problem and has an important impact in patients' satisfaction and HR-QoL; The development of late urinary morbidity is independent of patients' age at time of brachytherapy; Brachytherapy patients satisfaction and HR-QoL are high and it is a well-accepted treatment.

RF-04.07
Extraperitoneal Robotic-Assisted Radical Prostatectomy: A United Kingdom Experience
Pai A, Nair R, Mahesan T, Tsavalas P, Ayres B, Perry M, Anderson C, Issa R
St. Georges Healthcare NHS Trust, London, UK

Introduction and Objectives: Robotic assisted radical prostatectomy is increasingly performed worldwide, primarily using a transperitoneal approach. There are however theoretical advantages to the extraperitoneal technique including

prevention of potential intraperitoneal morbidity, reduced operative times and reduced intraoperative ventilation requirments. We report our experience of extraperitoneal prostatectomy, including safety and oncological outcomes.
Materials and Methods: A prospective single-centre study of 239 extraperitoneal robot-assisted radical prostatectomy (eRARP) was undertaken between February 2010 and February 2014. Using an ethically-approved prospective database, we collected demographic, surgical and oncological outcomes.
Results: The mean age of the patients was 63 years and mean preoperative prostate-specific antigen was 7.3 µg/L. Clinical stages were T1 in 41%, T2 in 47% and T3 in 12% of patients. Median operating time was 155 (63-420) minutes and median blood loss was 500 (50-2500) mL. Overall, the positive margin rate (PMR) was 24.2%. In addition, 61/239 eRARP cases had a drain inserted. The complication rate was 9.2% and there were no conversions to an open procedure. Median length of hospital stay was 1 day (range 1 to 8). eRARP required several technical modifications: development of Retzius' space by balloon insufflation, laparoscopic dissection of lateral extensions of this area; caudal port positioning; and lodging the bagged prostate specimen adjacent to the lateral assistant port to permit space for urethro-vesical anastomosis.
Conclusion: eRARP has favourable outcomes with respect to operative time and length of stay. eRARP mimics the standard open retropubic technique and avoids the potential morbidity of opening the abdominal cavity. As robotic prostatectomy experience increases, eRARP has the potential to become the favoured option.

RF-04.08
Prostate Cancer Oncologic Characterization Depending of the Volume Assess in Multiparametric 3T Magnetic Resonance
Piotrowicz S, Dobruch J, Muśko N, Nyk Ł, Kawecki S, Borówka A
Dept. of Urology, Centre of Postgraduate Medical Education, European Health Center, Otwock, Poland

Introduction and Objectives: Cancer of the prostate (PCa) is now recognized as one of the most important medical problems facing the male population. Radical prostatectomy (RP) is a mainstay therapy for prostate cancer. The extension of this procedure depends of the local staging of the tumor lesion which enable multiparametric 3T magnetic resonance (mpMRI). Aim: To assess oncologic characterization of PCa depending of the volume measures in 3T mpMRI.
Materials and Methods: Retrospective analysis date of men subjected to RP due to PCa who had undergone diffusion weighted magnetic resonance imaging before radical prostatectomy between 2011 and 2013. The volume of the suspicious tumor lesion on diffusion weighted magnetic resonance imaging was measured and stratified the cohort into 2 groups. Group 1 included patients with normal magnetic resonance imaging or a suspicious tumor lesion volume smaller or equal 0,52 ml and Group 2 included patients with a suspicious tumor lesion volume larger than 0,52 ml.
Results: In this period 200 men were subjected to RP. Among them, 60 had undergone mpMRI before the procedure. Tumor lesion volume was ≤ 0.52 ml in 21 (35%) men, in one of them mpMRI was normal. PCa organ confined was found in 18 (86%) of men. None of them had positive surgical margins (PSM), seminal vesicle invasion (SVI) or lymph node involvement (N+). Mean concentration of PSA and Gleason score were 7.4 ng/ml and 6.2 respectively. Tumor lesion volume was > 0.52 ml in 39 (65%) men. PCa organ confined was found in 23 (59%). Mean concentration of PSA and Gleason score were 13 ng/ml and 7.1 respectively. PSM, SVI and N+ were found in 5 (13%), 7 (18%) and 3 (8%) men, respectively.
Conclusions: Tumor lesion measures on 3T mpMRI correlate with negative pathological feature of PCa. The simple assessment of tumor volume lesion before RP could improve the quality of the procedure.

Unmoderated ePosters
Monday, October 13 -
Tuesday, October 14
0900-1600
Wednesday, October 15
0900-1500

UP.001

Estimation of Mortality and Morbidity Risk in the Radical Cystectomy Using POSSUM and the Portsmouth Predictor Equation

Masago T[1], Iwamoto H[1], Morizane S[1], Yao A[1], Isoyama T[2], Honda M[1], Sejima T[1], Takenaka A[1], **Hikita K**[1]
[1]Tottori University Faculty of Medicine, Yonago, Japan; [2]Tottori Prefectural Central Hospital, Yonago, Japan

Introduction and Objectives: Radical cystectomy is associated with appreciable postoperative morbidity and mortality. POSSUM (Physiological and Operative Severity Score for the enumeration of Mortality and Morbidity) is a simple scoring system previously validated in general surgical patients which enables estimation of the risk of complications and death after operation. The Portsmouth predictor equation (P-POSSUM) is a modification that may result in more accurate prediction of death than POSSUM. The aim of this study was to test the validity of POSSUM and P-POSSUM in patients undergoing radical cystectomy.
Materials and Methods: The institutional review board approved our analysis of patients who underwent RC for bladder cancer between January 2003 and December 2011. Physiological and operative severity scores in 280 patients undergoing radical cystectomy were reviewed retrospectively. Predicted morbidity and were calculated using the POSSUM and Portsmouth POSSUM equations. Patients were stratified into risk groups, and observed and predicted outcomes were compared. The accuracy of predictions was assessed using binomial and chi-square analysis.
Results: The data were obtained on 280 patients with radical cystectomy. Observed morbidity and mortality rates were 56.6% and 1.8%, respectively. Predicted morbidity using POSSUM analysis was 138 compared to the 165 observed in our study ($p<0.0001$). Compared to 5 observed deaths predicted mortality using POSSUM and Portsmouth POSSUM analysis was 34 and 11 ($p<0.0001$ and $p=0.205$, respectively). There was significant lack of fit for the POSSUM model to predict morbidity and mortality. The mortality risk estimated by Portsmouth POSSUM was not significantly different from observed mortality rate.
Conclusions: In our study the POSSUM equation over predicted morbidity and mortality, and was unsuitable for the patients undergoing radical cystectomy. The Portsmouth POSSUM equation allowed satisfactory prediction of mortality. We should evaluate further in larger series.

UP.002

Prospective Non-Randomized Comparison of Surgical Invasiveness of Transvaginal Natural Orifice Translumenal Endoscopic Surgery (NOTES)-Assisted and Conventional Laparoscopic Radical Nephrectomy

Zou X, Xue Y, Zhang G, Yuan Y, Xiao R
First Affiliated Hospital of Gannan Medical University, Ganzhou, China

Introduction and Objectives: Natural orifice translumenal endoscopic surgery (NOTES) has been developed in an attempt to further reduce the morbidity and scarring associated with surgical intervention, and it has been proposed to result in less induced surgical trauma than conventional laparoscopy. This study aimed to investigate the surgical trauma after transvaginal NOTES-assisted radical nephrectomy (NOTES-RN) and laparoscopic radical nephrectomy (LRN).
Materials and Methods: A total of 73 female patients were enrolled in this prospective, non-randomized study. Blood samples were collected preoperatively (T0), intraoperatively (T1), and 12 (T2), 24 (T3), 48 (T4), and 72 h (T5) postoperatively. Serum concentrations of acute-phase markers, C-reactive protein (CRP), serum amyloid A (SAA) antibody, and interleukin 6 (IL-6) and interleukin 1 (IL-1) were measured at each time point by means of ELISA. Clinical data were collected and analysed. NOTES-RN was performed in 35 patients (Group I), LRN in 38 patients (Group II).
Results: Baseline levels (T0) of CRP, IL-6, SAA and IL-1 were comparable in both groups. CRP, IL-6 and SAA levels increased during both kinds of surgery. The mean IL-6 and CPR values were significantly higher in the LRN group than in the NOTES-RN group at T1 ($P = 0.02$ and 0.001), T2 ($P = 0.001$ and <0.001), T3 ($P = 0.002$ and <0.001), T4 ($P < 0.001$ and 0.02), and T5 ($P < 0.001$ and 0.03), respectively. Also, the serum levels of the SAA was higher for LRN at T2 ($P < 0.001$), T3 ($P = 0.001$), T4 ($P = 0.001$) and T5 ($P = 0.003$). IL-1 did not change at the different sample times.
Conclusion: NOTES-RN was associated with lesser extend of IL-6, CPR and SAA release indicating a smaller degree of surgical insult and the minimal-invasive nature of this procedure.

UP.003

Randomized Controlled Trial Comparing Transvaginal Natural Orifice Transluminal Endoscopic Surgery (NOTES)-Assisted Adrenalectomy and Conventional Laparoscopic Adrenalectomy

Zhang G, Xue Y, **Zou X**, Yuan Y, Xiao R
First Affiliated Hospital of Gannan Medical University, Ganzhou, China

Introduction and Objectives: Our previous studies have suggested that transvaginal natural orifice transluminal endoscopic surgery (NOTES)-assisted adrenalectomy (NOTES-A) is a feasible alternative to conventional laparoscopic adrenalectomy (LA). However, there is a lack of data from randomized studies validating any benefit over LA. The aim of the trial was to compare NOTES-A with LA regarding short-term pain, health-related quality of life (HRQoL), recovery, and complications.
Materials and Methods: Eligible patients were randomized to receive NOTES-A or LA. Primary end points were pain until the morning of postoperative day (POD) 3 and cosmetic result. Secondary end points were intra- and postoperative complications, operative time, length of postoperative hospital stay, time to full recovery, and HRQoL up to 4 weeks.
Results: Female patients were recruited between February 2011 and September 2013. Of 51 randomized patients, 42 received intervention: 19 NOTES-A and 23 LA. Operative times for NOTES-A were greater than LA (98.5 minutes vs. 74.6 minutes, $P < 0.05$). Length of postoperative hospital stay and the rate of intra- and postoperative complications were similar in the 2 groups. However, significant advantages were found for the NOTES-A regarding pain until POD 3 (all $P < 0.05$). In the NOTES-A group, patients were significantly more satisfied with the cosmetic result ($P < 0.05$). Time to full recovery was shorter in the NOTES-A group. HRQoL as determined by the SF-36 survey was not significantly different between groups.
Conclusion: NOTES-A requires a longer operative time than LA but may result in less pain, faster recovery, and increased satisfaction with the cosmetic result. Larger randomized trials performed later may identify more subtle advantages of one method over another.

UP.004

Suprapubic-Assisted Laparoendoscopic Single-Site Surgery Nephrectomy with Report of 110 Cases

Zhang G, **Zou X**, Xue Y, Yuan Y, Xiao R, Wu G, Wang X, Liu F, Xu H, Liu M, Zhong X
First Affiliated Hospital of Gannan Medical University, Ganzhou, China

Introduction and Objectives: To describe the initial clinical experience of suprapubic-assisted laparoendoscopic single-site surgery nephrectomy (SA-LESS-N) in Urology, and evaluate its safety, feasibility and efficacy.
Materials and Methods: One hundred and ten consecutive patients including 86 males and 24 females, with a mean age of 52.6 yeas (range 20 to 78), were subjected to SA-LESS-N in our center. There were 83 non-functioning kidneys, 24 renal carcinomas, and 3 tuberculosis kidneys in our study. Under general anesthesia, the patients were positioned in lateral decubitus

with affected side elevated 70°. One 5- and 10-mm (or two 5-mm) trocars were inserted into the umbilical edge. A 10-or 5-mm trocar was inserted into the abdominal cavity below the pubic hairline, through which a 10-mm 30° or 5-mm 0° laparoscope was placed. The operation was the same as that of standard laparoscopy. The specimens were removed after the incisions below the pubic hairline were enlarged or they were crashed and removed from the incision at the umbilicus.
Results: SA-LESS-N was successfully completed in 110 patients. Seven patients required conversion to standard laparoscopy because of intraoperative bleeding (n=6), and failure to progress (n=1). One patient underwent open conversion because of gradual bleeding during the dissection of dense adhesive renal pedicle due to infection and fibrosis. The mean operative time for simple nephrectomy was 115 (range 95 to 175) mins, radical nephrectomy 85 (range 75 to 160) mins. The mean blood loss was 150 (range 55 to 300) ml. Hospitalization duration was between 5 and 8 days with a mean postoperative stay of 7.1 days. The mean follow-up of 23.1 months (range 2 to 42) showed hidden umbilicus scar. The suprapubic scar was not detectable because of the pubic hairs.
Conclusion: SA-LESS-N appears to be feasible, safe and effective. It would not only lead to improved cosmetic results, but lead to little postoperative pain.

UP.005
Floating Kidney: A Rare Presentation of a Common Ailment
Yarmohamadi A, Tarjoman N, Saeedi P
Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: Floating Kidney is the name given to subcapsular perinephric accumulation of fluid, which can sometimes become as huge as to cause midline displacement of the kidney and also compression of the renal cortex. This condition can be a result of a number of diseases, and is rarely seen as a representation of renal parenchymal diseases. Proteinuria may be present in the nephrotic or subnephrotic range. Although treating the underlying renal condition will reduce the fluid collection in most cases, fenestration of Gerota's fascia to drain the fluid into the peritoneal cavity is used in persistent cases.
Materials and Methods: In this case report, we present a 15 years-old girl with subnephrotic proteinuria presenting with bilateral flank mass and abdominal pain. Computed tomography scans showed bilateral perinephric fluid collection, which was compatible with transudation. Results: After being unsuccessfully treated by a percutaneous nephrostomy and later placement of bilateral Double J Intraureteral Catheters, the patient underwent a surgery to obtain a kidney biopsy and to fenestrate Gerota's Fascia, draining the perinephric collection into the periotoneal cavity. Biopsy results were compatible with Membranous Glomerulonephritis (MGN). A follow-up ultrasonography 9 months later showed no fluid accumulation.
Conclusion: This report illustrates the successful application of surgery to treat a case of subcapsular perinephric fluid collection as a result of parenchymal renal diseases. By fenestrating Gerota's fascia, we provided sufficient drainage of the fluid to reduce the pressure on the kidney and eliminate the patient's symptoms.

UP.007
The Potential of Diffusion-Weighted Magnetic Resonance Imaging as an Imaging Biomarker Reflecting the Metastatic Propensity of Upper Urinary Tract Cancer
Uchida Y[1], Yoshida S[1], **Moriyama S**[1], Kobayashi S[1], Koga F[1], Ishioka J[1], Satoh S[2], Ishiii C[2], Tanaka H[2], Matsuoka Y[1], Saito K[1], Masuda H[1], Fujii Y[1], Kihara K[1]
[1]Tokyo Medical and Dental University, Tokyo, Japan; [2]Ochanomizu Surugadai Clinic, Tokyo, Japan

Introduction and Objectives: Upper urinary tract cancer (UUTC) that is localized at the initial diagnosis but will develop metastasis soon after radical nephroureterectomy (RNU) can be a candidate for neoadjuvant chemotherapy. However, identifying these occult metastases preoperatively remains a challenge. Diffusion-weighted MRI (DW-MRI) is a functional imaging technique that reveals physiological information by quantifying the diffusion of water molecules in tissues. The extent of water diffusion is quantified as the apparent diffusion coefficient (ADC). We examine whether ADC can be a biological marker indicating the metastatic potential of UUTC.
Materials and Methods: At a single center between January 2007 and February 2012, 123 consecutive patients suspected of having UUTC were enrolled in an institutional prospective study. Multi-sequence MRI including DW-MRI was performed prior to any interventions. Fifty eight patients, who were clinically diagnosed with UUTC, were eligible for the present analysis.
Results: The ADC of UUTC ranged from 0.65 to 1.58 × 10^{-3} mm^2/s (median, 0.94 × 10^{-3} mm^2/s), and the median follow-up period was 954 days. Of the 58 patients, twelve had some metastases at initial diagnosis (categorized as 'macroscopic metastasis'). Eleven patients developed metastases during the follow-up period (categorized as 'microscopic metastasis'). The remaining 35 patients were categorized as 'localized disease'. ADC was significantly lower in 'macroscopic/microscopic metastasis' than in 'localized disease' (P = 0.0002). Multivariate analysis of preoperative variables identified ADC and clinical T stage based on T2W-MRI as an independent predictive factor of metastatic UUTC. The metastasis-free survival in 'microscopic metastasis/localized disease' was significantly shorter in patients with lower ADC (n = 38) compared to those with higher ADC (n = 20) (P = 0.0026; three-year metastasis-free survival rate, 61% vs. 100%). We stratified 'microscopic metastasis/localized disease' into a high-risk group (27 patients with lower ADC and clinical T3-4) and a low-risk group (31 patients with higher ADC or clinical Ta-2). The three-year metastasis-free survival rates of the high and low-risk groups were 45% and 93%, respectively (P = 0.0002).
Conclusion: UUTC with lower ADC is more likely to have metastatic potential. Incorporating ADC into clinical T stage helps to differentiate metastatic UUTC at the initial diagnosis.

UP.008
Is Second-Transurethral Resection Really Needed for T1 Bladder Cancer? Systematic Review, Metaanalysis of the Literature and of a Contemporary Cases Series
Hurle R[1], Castaldo L[1], Taverna G[1], Pasini L[1], **Ferro M**[2], Bottero D[2], Naselli A[3], Puppo P[4], de Cobelli O[2], Graziotti P[1]
[1]Division of Urology, Istituto Clinico Humanitas (IRCCS), Milan, Italy; [2]Division of Urology, European Institute of Oncology, Milan, Italy; [3]Division of Urology, Istituto Clinico Humanitas Mater Domini, Castellanza, Italy; [4]Division of Urology, Ospedale Civile, Sanremo, Italy

Introduction and Objectives: To assess the impact of second transurethral resection (reTUR) in T1 bladder cancer by means of a systematic review of literature and meta-analysis of available datasets to find out potential discrepancies and support guidelines commitment.
Materials and Methods: After definition of the population and of the outcome a systematic search of available literature in English from 1980 to 2012 was performed. Pooled prevalence of residual tumor of any stage and grade and of upstage at reTUR was assessed and computed by means of random effects model to take into account the extreme variability showed by I squared and Cochran's Q values. A sensitivity analysis was further conducted to exclude excessive influence by a single study.
Results: Among papers identified, only 24 matched inclusion and exclusion criteria. Unpublished prospective data from a series of Humanitas Gavezzini hospital were included in the analysis. A total of 2399 and 2328 T1 cases formed the study population to assess the prevalence of residual tumor and upstaging respectively. After reTUR, 1330/2399 (55%) patients were found with residual disease. The incidence of residual disease was divided in lower stage (Ta or Cis), same stage (T1) and upstage (> T1) and was respectively 429/2208

(19%), 486/2208 (23%) and 348/2328 (16%). In the series including only cases with muscle in the specimen of the previous TUR [13, 19, 22, 24, 25] the rate of residual disease and of upstaging after reTUR was respectively 166/448 (37%) and 42/448 (9%). In conclusion pooled residual tumor prevalence at reTUR was 0.49 (95% CI 0.41 – 0.57). Pooled T2 prevalence at reTUR was 0.09 (95% CI 0.05 – 0.14). Sensitivity analysis excluded excessive influence from each of the study examined.
Conclusion: Pooled prevalence of residual tumor and of upstaging to invasive disease at reTUR is really high and stable among studies belonging to different decades in T1 cases, also in prospective series of procedures performed by experienced surgeons. Therefore reTUR remains a fundamental procedure.

UP.009
Pre-Surgical Sunitinib Treatment for Renal Cell Carcinoma: A Case Series
Tokuda N, Uchino H, Morokuma F
Saga-Ken Medical Centre Koseikan, Saga, Japan

Introduction and Objectives: We assessed the efficacy and safety of using sunitinib as a pre-surgical therapy for renal cell carcinoma (RCC).
Materials and Methods: Seven patients (four males and three females; mean age, 61.4 years; on nine renal units and one liver) underwent pre-surgical sunitinib treatment to preserve their renal function by reducing the tumor volume, to downstage and prevent the progression of the RCC while waiting for surgery. Sunitinib treatment was started at a dose of 12.5 mg or 25.0 mg daily, in six-week cycles consisting of four weeks on and two weeks off. Dose escalation was performed if no significant adverse events were observed.
Results: Of the seven patients, six patients had localized disease and one had metastatic disease (liver). Two patients had bilateral RCC and one had RCC in a solitary kidney. None of the patients discontinued sunitinib due to toxicity. The duration of sunitinib treatment ranged from one to 19 cycles. The treatment with sunitinib was stopped three to seven days before surgery. Eight of the nine RCC tumors showed no progression during the treatment period. One of the seven patients experienced grade 3 thrombocytopenia before surgery. He also experienced severe perioperative complications, such as intraoperative hemorrhaging, deep vein thrombosis, and cellulitis. Due to the downsizing of the primary tumor, one patient with bilateral renal tumors and one patient with renal tumor in a solitary kidney were able to undergo nephron-sparing surgery (NSS). One patient with bilateral renal tumors and liver metastases underwent left NSS after two cycles of sunitinib, and thereafter underwent right radical nephrectomy and concurrent liver metastasectomy. In one patient, three cycles of the treatment reduced the inferior vena cava tumor involvement to the level of the renal vein and the tumor was downstaged from T3b to T3a. A surgical specimen showed a clear cell phenotype and negative surgical margins in all seven patients.
Conclusion: Using sunitinib as pre-surgical therapy may be an option for clear cell RCC patients who need to preserve their renal function and reduce the tumor burden and/or who must wait more than a month before undergoing surgery.

UP.010
Hypometabolism: A Novel Strategy to Extend Warm Ischemia Time during Partial Nephrectomy
Alexander B, Fishman A, Grasso M, Dorai T
New York Medical College, Valhalla, USA

Introduction and Objectives: Hibernating animals go through repetitive metabolic cycles in which their metabolic rate and body temperature drop briefly before entering a longer state of true hibernation. Their heart rate and blood flow may decrease to 1/30 and oxygen (O2) consumption to 1/100 of their respective euthermic levels. As a result of this hypometabolic preconditioning, their organs do not show any detrimental effects of ischemia. Several novel strategies to induce a hibernation-like state in non-hibernator model systems like mice have been reported. We investigated the preconditioning effect of administering 5'-Adenosyl monophosphate (5'-AMP) to mice to create a hypometabolic state and its protective effect on a subsequent renal ischemic episode.
Materials and Methods: C57BL/6 mice were randomized into 3 groups of 8: sham, ischemia only, and hypometabolism + ischemia. A hypometabolic state was induced by intra-peritoneal injection of a solution of 5'-AMP. The animals enter into a hibernation-like state within minutes. The O2 consumption rate and the core body temperature (CBT) were followed for a period of 6 hrs. CBT dropped to near ambient temperature and was maintained for nearly 4.5 hrs. Two hours after 5'-AMP injection, which accounted for a hypometabolic preconditioning, left renal ischemia was induced by clamping the renal pedicle for 40, 50 and 60 minutes. After a reperfusion period of 24 hours, the animals were sacrificed and their ischemic and contra-lateral kidney were harvested and processed for both immunohistochemistry and protein chemistry.
Results: The pre-conditioned left kidneys showed significantly reduced morphological changes as evidenced by the H&E and Periodic Acid Schiff stains. Immunoblotting analysis showed a reduction in the ischemia specific markers as compared to ischemic controls. A reduction in the ischemia specific marker Cystatin-C was shown on the immunoblots as a result of hypometabolic preconditioning indicating markedly reduced ischemic damage even after a 60-minute ischemia time.
Conclusions: These results show that inducing a hypometabolic state in non-hibernators such as mice can be used as a novel strategy to reduce the severity of renal ischemic damage as measured by several accepted parameters. Perfecting this renal ischemia technique in higher animals such as dogs and pigs may pave the way to test this novel concept in man.

UP.011
Laparoscopic Transmesocolic Pyeloplasty: Our 5-Year Experience
Guliev B, Komyakov B, Aliev R
Dept. of Urology, Mechnikov's Medical University, Saint-Petersburg, Russia

Introduction and Objectives: In the last few years laparoscopic surgery has become the gold standard for the treatment of ureteropelvic junction obstruction (UPJO). The aim of the present study is to describe the advantages of the transmesenteric approach for laparoscopic pyeloplasty.
Materials and Methods: Between October 2009 and December 2013, 84 patients underwent transperitoneal laparoscopic dismembered pyeloplasty. All patients presented a primary UPJO. The mean age was 32 years (range 20 to 58), and of the 40 women and 44 man, 46 presented UPJO on the right side and 38 on the left side. Eighteen patients with left UPJO underwent laparoscopic pyeloplasty via transmesenteric approach. All patients underwent Anderson-Hynes pyeloplasty by a single surgeon. Tree of them had horse- shoe kidney. All cases were stented for period of four or five weeks post-operatively.
Results: No conversions or intraoperative complications were observed. No blood transfusions were required. The mean operative time was 96 min, with range 80–126 min. The mean hospital stay was 3.2 days with a range of 2.4 to 5 days. The mean follow- up period was 13 months (range, 6 to 22 months). After stent removal all patients were underwent renal scans and renal ultrasound. Sixteen patients had improved function on the scan, while in two patients, the function remained the same. In all patients renal ultrasound showed a decrease in the severity of hydronephrosis.
Conclusions: The laparoscopic pyeloplasty by transmesenteric approach in patients for left-sided UPJO is safe and feasible, and has technical advantages.

UP.013
Robotic Assisted Laparoscopic Partial Adrenalectomy
Kamalakannan R, Bhat A, Kanekar S
Apollo Hospitals, Chennai, India

Introduction and Objectives: For patients

requiring bilateral adrenalectomy, adrenal sparing surgery may reduce the risk of lifelong hormonal supplementation and reduce associated risks such as osteoporosis and hypoandrogenism. Indications for partial adrenalectomy include bilateral hereditary adrenal tumours, as well as tumours in a solitary adrenal gland. There has been an increasing trend toward partial adrenalectomy worldwide in the last 20 years. Partial adrenalectomy is most commonly done for Conn's syndrome and pheochromocytoma. Partial adrenalectomy has the advantage of tumour control while preserving the adrenocortical function. The recurrence rate is only 3% and more than 90% of patients remain steroid independent. A minimally invasive approach to adrenalectomy is now considered the standard of care for most adrenal surgeries due to the reduced morbidity and improved outcomes. The robotic approach has several potential advantages when compared to laparoscopy. The robot may be useful for the delicate dissection of large blood vessels, such as the aorta, vena cava, and renal vessels, and of organs such as the liver and spleen. We report two cases of robotic partial adrenelectomy, one for bilateral pheochromocytoma with right total adrenalectomy and left partial adrenalectomy and other for a solitary adrenal gland.

Materials and Methods: Fifteen years old female presented with bilateral pheochromocytoma, right larger than the left. She underwent robotic assisted laparoscopic right total adrenelectomy and left partial adrenalectomy. Fifty years old male patient presented with right adrenal mass. He had left radical nephrectomy for his left renal tumour 5 years back. He underwent right partial adrenalectomy.

Results: Patient's postoperative period was uneventful. Serum cortisol and urinary metanephrine excretion went back to normal postoperatively. Histopathological examination confirmed bilateral pheochromocytoma and renal cell carcinoma.

Conclusions: Cortical sparing adrenalectomy should be attempted where possible especially in bilateral condition to avoid lifelong steroid replacement. A clear differentiation between normal and neoplastic adrenal tissue is often possible, which permits a planned partial resection of the gland in selected cases. Partial adrenalectomy is safe and can be considered as first line treatment for small adrenal masses.

UP.014

The Comparison of Diameter-Axial-Polar Nephrometry with R.E.N.A.L Nephrometry Score in Patients with cT1a Renal Cell Carcinoma for Decision-Making of Laparoscopic Partial Nephrectomy

Naya Y, Oishi M, Ueda T, Nakanishi H, Naitoh Y, Nakamura T, Hongo F, Kamoi K, Okihara K, Miki T
Kyoto Prefectural University of Medicine, Kyoto, Japan

Introduction and Objectives: In the NCCN Guidelines on Renal Cell Carcinoma, partial nephrectomy (PN) is appropriate for cT1a renal tumors, and radical nephrectomy is also recommended if PN is not feasible or there is a central tumor location. Recently, Kutikov and Uzzo proposed R.E.N.A.L-nephrometry score (R.E.N.A.L-NS), and Simmons et al reported that DAP (diameter-axial-polar) nephrometry. These scoring systems were developed in an attempt to standardize the description and reporting of tumor anatomy, as well as to provide a construct to objectively assess the treatment decision-making process for partial nephrectomy.

Materials and Methods: A retrospective review of our institution's prospectively maintained and Institutional Review Board-approved database (January 2003 to February 2010) was performed. A total of 142 patients with cT1aN0M0 lesions who underwent treatment were identified. Treatment methods were 68 laparoscopic nephrectomies (LRN), 74 laparoscopic partial nephrectomies (LPN). The clinicopathological characteristics including R.E.N.A.L-NS and DAP were retrospectively analyzed for the entire cohort. Statistical analyses were calculated using SAS.

Results: In the LRN group, the tumor size was larger than that in LPN (30mm vs. 20mm, p<0.0001). The R.E.N.A.L-NS and DAP in the LRN group was significantly higher than that in the PN group (R.E.N.A.L.-NS; 9 vs. 7, DAP; 7 vs. 5, p<0.0001 respectively). A multivariate logistic regression analysis for election of PN showed that tumor size (≤2cm), R.E.N.A.L-NS, DAP, and imperative condition (solitary kidney) were independent factors. DAP is a strongest independent factor for decision-making for performing LPN. The ROC-AUC of DAP and R.E.N.A.L NS for performing LPN were 0.897 and 0.825, respectively.

Conclusion: Based on ROC analysis, when DAP was 6 or less, or R.E.N.A.L.-NS was 8 or less, LPN should be considered and when DAP was 7 or more, or R.E.N.A.L-NS was 9 or more, OPN should be considered. Both R.E.N.A.L-NS and DAP are useful for decision-making for performing LPN. DAP is a strongest independent factor for LPN.

UP.015

Is Laparoscopic Pyeloplasty a Comparable Option to Treat Ureteropelvic Junction Obstruction (UPJO)? A Comparative Study

Ali M, Biyabani S, Ghirano R, Siddiqui K
The Aga Khan University, Karachi, Pakistan

Introduction and Objectives: Established treatment options for Ureteropelvic junction obstruction (UPJO) include pyeloplasty by open or laparoscopic approaches or endopyelotomy. Laparoscopic pyeloplasty is minimally invasive technique to perform Anderson-Hynes dismembered pyeloplasty. Several large case series and nonrandomized comparisons have shown success rates exceeding 90%, which are similar to that of open dismembered pyeloplasty. This study aimed to compare laparoscopic with open pyeloplasty in our series.

Materials and Methods: Records of patients undergoing pyeloplasty form January 2008 to December 2012 were reviewed. We compared the operative time, hospital stay, perioperative complications, blood loss, and duration of surgery, outcome and follow-up of the two groups. Statistical analysis was done by using SPSS version 19. Continuous variables were analyzed by using student t –test and p value of 0.05 was taking statistically significant.

Results: Records of 73 patients were available for study. Out of these, 29 had laparoscopic pyeloplasty (group1) and 44 patients underwent open pyeloplasty (Group 2). The demographic data were similar in the two groups with a female predominance. A crossing vessel could be identified in 86.2% (25/29) in Group 1 vs. 75% (33/44) in Group 2. Three patients required conversion from laparoscopic to open pyeloplasty (3/32=29). Laparoscopic procedures were associated with a longer mean operating time (178 vs. 153 min p=0.04), median estimated blood loss (54 vs. 110 ml p=<0.001), and a shorter mean hospital stay (2.7 vs. 4.5 days, p=<.001). Pre-operative MAG-3 was done in laparoscopic vs. open preoperatively (27/29=93% vs. 32/44=72%) and on follow-up MAG-3 was done in (21/29=74.5% in Group 1 vs. 23/44=52.2%) in Group 2 respectively. Only 2 patients had poor response on MAG-3 in both groups. The JJ stent was removed after 02 months. The incidence of postoperative complications for laparoscopic vs. open (5 of 29, 13% vs. 9 of 44, 20%, p=0.141) and success rates was comparable in the 2 groups. Mean follow-up (2.71±1.2).

Conclusion: Laparoscopic pyeloplasty is associated with shorter hospital stay, less pain and less blood loss. The efficacy (in term of success rate and perioperative complications) of laparoscopic pyeloplasty is comparable to that of open pyeloplasty.

UP.016

Major Cardiovascular Events in Short-Term Following after Genitourinary Tract Surgery in Patients with Ischemic Heart Disease

Fanni Z[1], **Nikoobakht M**[1], Bozorgi A[2], Karbalaee Saleh S[2], Sharifi A[1]
[1]Urology Research Center, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran; [2]Dept. of Cardiology, Sina Hospital, Tehran, Iran

Introduction and Objectives: Despite development of minimally invasive therapies, surgery has remained the standard treatment for elderly patients with lower genitourinary tract problems. Concurrency of this disorder with

increased prevalence of cardiovascular diseases in this age group can put patients at risk of cardiovascular morbidity and mortality after surgery. So our aim was to investigate incidence of major cardiovascular events in short term following after prostate surgery in patients with Ischemic Heart Disease (IHD).
Materials and Methods: This retrospective cohort study was run as census on all patients hospitalized in Sina Hospital from March 2010 to August 2012 and who underwent prostate surgery. An inclusion criterion was prostate operation, and an exclusion criterion was history of major surgery within the three last months. A list of all patients candidate for surgery operation was extracted. Using their medical records, occurrence of cardiac events in the postoperative period until end of hospitalization was recorded in specially designed forms. Data were analyzed using SPSS software (significance level set as p value=0.05).
Results: Finally 206 medical records were studied. Incidence of UA was significantly higher (P=0.04) in patients with IHD compared to patients without IHD and increased risk in them were 4.63 (95% CI: 1.10, 19.40). Patients with IHD faced risk of postoperative cardiac complications 5 times higher (95% CI: 1.76, 14.42). Existence of diabetes mellitus and blood hypertension caused increased risk of cardiovascular complications in patients by 3 times.
Conclusion: According to findings in the current study, risk of cardiac complications after prostate surgery in patients with IHD was higher and it should be done with caution.

UP.017

Primary Renal Tumor Burden with Its Necrosis and Its Tumor Vascularity Are Independent Prognostic Factors in Patients with Metastatic Renal Cell Carcinoma Treated with VEGF-Targeted Therapy

KIM S, Joung J, Seo H, Lee K**, Chung J**
Dept. of Urology, National Cancer Center, Goyang, Gyeonggi, South Korea

Introduction and Objectives: The many important prognostic factors for survival in patients with metastatic renal cell carcinoma (mRCC) were evaluated in the era of cytokine therapy, and only recently were revalidating in patients receiving VEGF-targeted therapy (TTs). This study is aimed to investigate the possible prognostic role of primary renal tumor size with necrosis and its vascularity in terms of progression-free survival (PFS) and overall survival (OS), in patients with mRCC treated with TTs.
Materials and Methods: A consecutive 38 patients with mRCC treated with TTs without history of previous neither cytokine nor surgical treatments during the period 2006-2011 were selected. The Response Evaluation Criteria in Solid Tumors criteria were used to assess TB as well as primary renal tumor necrosis (TN) between baseline CT and best therapeutic CT before progression during TT. Additionally, the Housefield unit (HU) in enhancing phase of baseline CT was also evaluated referring to the vascularity within tumor with other clinicopathological parameters. The patients were divided into response group (RG) with partial response and non-response group (NRG) with either stable or progression disease in RECIST criteria. The PFS and OS rates with its associated prognostic factors were also evaluated using statistical hazards model.
Results: The median follow-up was 16 months with 7.0 (±5.8) months of mean treatment duration. The median OS and PFS of total patients were 8.0 and 4.5 months. The baseline characteristics of two groups (12 RG vs. 26 NR) were significantly different for baseline body surface area, hemoglobin, platelet count, HU, and tumor size and its necrotic size. The OS and PFS of RG and of NRG were also significantly different (14/10 months vs. 10/3 months, respectively). Compared to best therapeutic CT, baseline tumor size (HR 8.17, 95%CI 1.780-3.519; p=0.007) with necrotic size (HR 14.59, CI 2.265-9.403; p=0.005) and its HU of primary renal tumor (HR 0.884, CI 0.815-0.959; p=0.003) were independently significant prognostic factors in multivariate analysis.
Conclusions: TB and its HU are easy to calculate at baseline CT and significantly relates to prognosis in patients with mRCC without any previous treatments. We believe that this information could be translated into clinical practice.

UP.018

Endoscopic Management of a Chronic Ureterocutaneous Fistula Using Cyanoacrylic Glue

Omar M[1], Ahmed Abdelwahab A[2], **Elmahdey A[1]**
[1]Dept. of Urology, Menofya University, Menofya, Egypt; [2]UDUTH, Sokoto, Nigeria

Introduction and Objectives: Ureterocutaneous fistula is a rare complication of renal surgery. A minimally invasive approach may be a favorable substitution for many challenging surgeries. Cyanoacrylate glues is one of the tissue adhesives, used primarily for endoscopic control of bleeding from gastric varices and less commonly for hemostasis of other bleeding lesions.
Materials and Methods: We present a 33 year old female, complaining of left loin, ureterocutaneous fistula, following a series of uro-gynecological operations. We used an open-end ureteral catheter through a retrograde endoscopic approach for instillation 2ml of the sealant (1ml lipidol+1ml cyanoacrylate mixture into the ureteral lumen to seal the ureter and fistulous tract.
Results: With a follow-up of 5 months, the fistulous opening healed spontaneously a week after procedure, she remained dry and symptoms free 5 months after the procedure.
Conclusion: In carefully selected patients, endoscopic delivery of cyanoacrylate sealant is feasible and effective in treating ureterocutaneous fistula especially in surgically adventurousness cases.

UP.019

Evaluation of Microvascular Density in Clear Cell Renal Cell Carcinoma and Normal Kidney Tissue

Veselaj F[1], Manxhuka-Kerliu S[2], Dervishi L[1], Shahini L[2], Selmani L[1], Gashi H[1]
[1]Dept. of Urology, UCC of Kosovo, Prishtina, Kosovo; [2]Dept. of Patology, UCC of Kosovo, Prishtina, Kosovo

Introduction and Objectives: Angiogenesis can be quantified in solid tumors by means of immunohistochemistry (IHC) in terms of microvascular density (MVD), defined as the number of small vessels in a specific tumoral area. The aim of this study was to evaluate the expressions of CD31 in clear cell Renal Cell Carcinoma (ccRCC) and normal kidney tissue and as well the relationship between MVD and clinicopathological factors.
Materials and Methods: Formalin-fixed and paraffin-embedded tissue blocks from 38 patients with ccRCC were studied. The control group was tissue sections from 20 cases with normal kidney tissue surgically removed because of other than malignant disease. There were 18 men and 20 women, with a median age of 60.2 years (mean 60.2; range 36 – 81 years). The situations of tumor angiogenesis were evaluated by assessing MVD through CD31 immunostaining.
Results: The value of MVD marked by CD31 (ranged from 5.0 to 292.0 with a median of 109.1), in the ccRCC and were significantly higher than those in control group (ranged from 0.0 to 55.0 with a median of 23.2). Statistical analysis the MVD values marked by CD31 there were no significant association between higher VEGF expression and high tumor stage (P=0.05) in ccRCC. Statistical analysis higher MVD was not associated with high tumor size (P=0.05), high tumor grade (P=0.05) and high tumor stage (P=0.05) in ccRCC.
Conclusions: The degree of angiogenesis in ccRCC is higher than in normal kidney tissue. The MVD of ccRCC is significantly higher than that in non-tumor kidney tissue. The expressions of CD31 not correlated with tumor size, tumor grade and tumor stage in ccRCC.

UP.020

Expression of Vascular Endothelial Growth Factor in Clear Cell Renal Cell Carcinoma and Normal Kidney Tissue

Veselaj F[1], Manxhuka-Kerliu S[2], Dervishi L[1], Shahini L[2], Selmani L[1], Gashi H[1]

[1]Dept. of Urology, UCC of Kosovo, Prishtina, Kosovo; [2]Dept. of Patology, UCC of Kosovo, Prishtina, Kosovo

Introduction and Objectives: Angiogenesis has a critical role in tumor growth and metastasis. The aim of this study was to evaluate the expression of vascular endothelial growth factor (VEGF) in clear cell Renal Cell Carcinoma (ccRCC) and normal kidney tissue, and as well the relationship between VEGF and clinicopathological factors.
Materials and Methods: The study included 38 patients with histopathologically verified ccRCC and 20 tissue sections from normal kidney tissue surgically removed because of other than malignant disease as control group. Parafin sections were stained by H&E for standard histological analysis. The expression of VEGF was done by immunohistochemical (IHC) staining.
Results: There were 18 men and 20 women, with a median age of 60.2 years (range 36 – 81 years). The expression of VEGF in ccRCC and was higher than in control group (55.6: 47.5). Statistical analysis higher VEGF was associated with high tumor grade (P=0.05) and high tumor size (P=0.05) in RCC. There were no significant association between higher VEGF expression and high tumor stage (P=0.05) in ccRCC.
Conclusion: The degree of angiogenesis in ccRCC is higher than in normal kidney tissue. The expression of VEGF may be responsible for angiogenesis in RCC and VEGF expression may function as tumor associated angiogenic factors in RCC.

UP.021

Laparoscopic Adrenalectomy: A Multi-Centre Review on the Operative Data and Complications and a Systematic Review of the Literature

Bondad J[1], Aboumarzouk O[2,3], Matłok M[4], Budzyski P[4], Soczawa M[5], Korzelik I[6], Jaskulski J[6], Szydełko T[7], Slojewski M[5], Budzynski A[4], Chlosta P[4,6]
[1]Princess Alexandra Hospital, Harlow, UK; [2]Wales Deanery, Cardiff, UK; [3]Islamic University of Gaza, Gaza, Palestine; [4]Jagiellonian University, Krakow, Poland; [5]Pommeranian Medical University, Szczecin, Poland; [6]Institute of Oncology, Kielce, Poland; [7]Medical University, Wroclaw, Poland

Introduction and Objectives: Laparoscopic adrenalectomy (LA) is the recommended treatment for benign adrenal disease. Although it is widely used worldwide, there has only been one systematic review carried out in 2006 in spite of the procedure being around for over twenty years. We review the current literature on LA as well as data from four centres performing LA.
Materials and Methods: We carried out a systematic literature search review using PubMed for studies reporting on 100 or more LA. We also carried out a retrospective study on 4 centres carrying out LA between March 2003 and January 2013. We've compared our results with the data from the systematic review.
Results: A total of 142 male and 279 female patients underwent LA from the 4 centres during the 9-year study period. The mean operative time was 85.56±34.61 minutes, with a conversion rate of 1.43%. The blood transfusion rate was 3% and the average blood loss was 68.51 millilitres. There was no mortality recorded from the series. The literature search collated 65 studies, involving 28,751 cases. Our systematic review revealed an average operating time of 125 minutes with a conversion rate of 1.55%. The average intra-operative blood loss was 44 millilitres and the average complication rate was 5.20%. Overall, our data is comparable to the results from the literature search.
Conclusion: LA is a safe procedure for benign adrenal disease with low mortality and conversion rate, and acceptable complication rate. Evolution of the original technique described by Gagner et al is inevitable and robotic adrenalectomy, partial adrenalectomy and single port adrenalectomy will no doubt be widely accepted in the future pending further evaluation.

UP.022

Tubularized Buccal Mucosa for Long Segment Ureteral Replacement: An Experimental Study in Dogs

Elbakry A[1], Mohamed M[2], Samir I[1], Zalata K[3], Rashwan H[1]
[1]Dept. of Urology, Suez Canal University, Ismailia, Egypt; [2]Dept. of Veterinary Surgery, Suez Canal University, Ismailia, Egypt; [3]Dept. of Pathology, Mansoura University, Mansoura, Egypt

Introduction and Objectives: Replacement of a long segment of the ureter due to long stricture or severe ureteral trauma is a challenging problem. We tried to evaluate the feasibility and outcome of the use of tabularized buccal mucosal graft for replacement of a long segment of the ureter in dogs.
Materials and Methods: Twelve female mongrel dogs weighing 15-25 kg were used. A buccal mucosal strip 10-12 cm long and 1.2 cm width was harvested from the lower cheek. The buccal mucosal graft was cleaned from any underlying tissues. The graft was tabularized around 4 French ureteral catheter, using 6/0 polygalactin sutures except 1cm at each end. A segment of the same length was excised from the iliac ureter. The tabularized buccal graft was anastomosed to a spatulated ureteral ends using interrupted 6/0 polygalactin sutures. An omental flap was mobilized and wrapped around the graft. The omental wrapping was secured by chromic catgut sutures and fixed proximally and distally to the psoas muscle. The ureteral stent was left for three weeks. The animals were followed-up for 12 weeks. Intravenous pyelography was done then the animals were sacrificed and the graft was examined grossly and histologically.
Results: Intravenous pyelography revealed that tabularized buccal mucosal graft was patent and permitted adequate and free passage of urine without obstruction. The graft was found to be viable elastic and well vascularized. Histological examination revealed new vasculature and new capillary formation in the buccal mucosal tube. Few myofibroplasts were detected under graft epithelium.
Conclusion: The use of tubularized buccal mucosa for replacement of a long segment ureteral defect is feasible and allowed free urine transport without obstruction. Omental wrapping is necessary for revascularization of the graft. The technique may be a considerable option for the management of long segment ureteral defects.

UP.023

Instillation of Intra-Renal Mitomycin C following Ureteroscopic Treatment of Large Volume, Multifocal Upper Tract Urothelial Tumors

Alexander B, Fishman A, Cohen J, Grasso M
New York Medical College, Valhalla, USA

Introduction and Objectives: The role of intra-renal mitomycin C (IR-MMC) following ureteroscopic treatment of upper tract urothelial tumors (UTT) has not been well established. We present our experience and long-term outcomes in a subset of patients who received IR-MMC following ureteroscopic treatment of large volume, multifocal UTT.
Materials and Methods: We performed a retrospective review of all patients who underwent ureteroscopic treatment of UTT between December 2001 and October 2010. High risk patients (poor surgical candidates for nephrouretectomy) with large volume, multifocal UTT that received IR-MMC were included in our analysis. These patients underwent endoscopic biopsy and ablation to clear initial tumor burden usually in a two stage procedure. Patients received postoperative IR-MMC (20mg in 50ml 0.9% normal saline) via a single pigtail stent in the recovery room over one hour by gravity. Patients were followed with serial endoscopy and ureteroscopic treatment of recurrent urothelial tumors every 3-6 months.
Results: Out of 82 patients with UTT treated ureteroscopically, a total of 13 high risk patients (6 men and 7 women) underwent ureteroscopic treatment of large volume, multifocal disease with IR-MMC therapy. The mean age was 71.5 years. 46.2% of patients had solitary kidney and 30.8% had bilateral tumors. On initial endoscopy, 11(84.6%) patients had low-grade disease, and 2 (15.4%) patients had high-grade

disease. The overall tumor recurrence rate was 60.5%. IR-MMC was instilled 40 times without side effects or complications. Out of the 11 patients with low-grade disease; 4 (36.4%) patients had no tumor on most recent endoscopy, 6 (54.5%) patients had significantly less tumor volume in subsequent treatments and 1 (9.1%) patient progressed to high-grade disease. All patients with high-grade disease progressed to metastatic disease at a mean of 14.2 months. There was no statistically significant difference between pretreatment creatinine (1.6 mg/dL) and post-treatment creatinine (1.9 mg/dL) at a mean follow-up time of 31.5 months.
Conclusion: Instillation of IR-MMC is safe and may aid in the ureteroscopic treatment of large volume, multifocal UTT in high risk patients that are poor surgical candidates for nephroureterectomy. Our series underscores the need for strict tumor surveillance and long-term patient commitment given the moderate risk of recurrence and small risk of progression.

UP.024
Retroperitoneal Laparoscopic Adrenalectomy: Single Center Experience
Wang J[1,2], Huan S[1,3], Chiu A[4]
[1]Dept. of Urology, Chi Mei Medical Center, Tainan, Taiwan; [2]Dept. of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan; [3]Graduate Institute of Medical Research, Taipei Medical University, Taipei, Taiwan; [4]College of Medicine, National Yang Ming University, Taipei, Taiwan

Introduction and Objectives: Laparoscopic adrenalectomy is an attractive alternative to the traditional open approach in the surgical excision of an adrenal gland. It has replaced open adrenalectomy in our institution since 2001. In our institution, retroperitoneal method has replaced transperitoneal method in recently years. So we review our experience about retroperitoneal laparoscopic adrenalectomy to date.
Materials and Methods: All cases of retroperitoneal laparoscopic adrenalectomies in our hospital over six years (from 2007 to May 2011) were retrospectively reviewed. Patient demographics (Age, BMI, gender), pathology, histology, length of hospital stay, post-surgery anesthetic dosage and all operative and post-operative details were evaluated.
Results: One hundred and five retroperitoneal laparospcopic adrenalectomies (LA) were performed on 102 patients over 4 years. The mean age was 52 years old (Range 23-81 years) with male to female ratio 1:1. Forty four cases had a right adrenalectomy, 55 had a left adrenalectomy and the remaining three patients had bilateral adrenalectomies. A hundred percent were successfully completed laparoscopically with one post operation re-check bleeding. Adenomas (functional and nonfunctional) were the leading indication for LA, followed by pheochromocytomas. Other indications for LA included Cushing's disease, adrenal malignancies and rare pathologies.
Conclusions: Retroperitoneal laparoscopic adrenalectomy is effective for the treatment of adrenal tumors, fulfilling the criteria for the ideal minimally invasive procedure. It has replaced the traditional open approach and transperitoneal method in our center and is a safe and effective alternative.

UP.025
Long-Term Results of Laparoscopic Partial Nephrectomy with Radiofrequency Ablation
Kalpinskiy A**, Alekseev B**, Andrianov A, Nyushko K, Vorobyev N, Polyakov V, Kaprin A
Moscow Hertzen Oncology Institute, Moscow, Russia

Introduction and Objectives: Laparoscopic partial nephrectomy (LPN) has shown to be technically feasible and oncologically safe with better functional results. The aim of the study was to assess long-term functional and oncologic results of a new technique of LPN with radiofrequency ablation (RFA).
Materials and Methods: A total of 179 patients with small renal masses after 180 LPN were included in the study. Standard LPN was performed in 87 (48.3%) and LPN+RFA – in 93 (51.7%) cases. Mean age was 54.6±11.4 (27-75) and 55.3±11.7 (16-79) (p=0.8), in the groups of standard LPN and LPN+RFA, respectively. Mean tumor size was 33.4±11.6mm (10.0-70.0mm) in the standard LPN group and 27.9±10.5mm (11.0-80.0mm) in LPN+RFA group (p=0.0003). Mean preoperative eGFR was 76.5±19.3ml/min (38.7-142.9ml/min) in standard LPN group and 78.1±19.8 ml/min (34.1-146.3 ml/min) in LRP+RFA group (p=0.4). Monopolar Cool-tip® RF system (Covidien) with one-needle probe was used for RFA. Neither cold nor warm renal ischemia was performed in LRP+RFA group.
Results: Median follow-up time was 30 (4-129) months and 49 (4-90) months in the groups of standard LPN and LPN+RFA, respectively (p=0.02). Median blood loss and mean operating time in LPN+RFA group were 100 ml (50-200ml) and 116.9±31.1 min (75-210min) and in standard LPN group - 200ml (50-40ml) and 130.3±43.1min (60-240min), respectively (p<0.05). Long-term functional outcomes were evaluated regarding changes in eGFR. Mean eGFR decrease after 3 months after surgery was comparable and normalization of renal function was observed in both groups. In standard LPN group mean reduction of eGFR was -0.02±9.8%, in LPN+RFA group -0.36±12.8%, (p=0.9). 5-year recurrent-free survival in standard LPN group was 92.9±4.4%, in LPN+RFA group 94.5±2.9% (p=0.11); cancer-specific and overall survival in standard LPN group was 93.6±4.3% and 93.6±4.3%, in LPN+RFA group 93.6±3.2% and 94.4±3% (p=0.63), respectively.
Conclusions: LPN with RFA is a feasible and effective treatment option for small renal masses, which eliminates the need renal ischemia. Performed in selected patients it shows good long-term results, comparable to standard LPN.

UP.026
Long-Term Results and Prognostic Factors in Patients with Locally-Advanced Renal Cell Carcinoma
Kalpinskiy A**, Alekseev B**, Nyushko K, Vorobiev N, Priadilova E, Kaprin A
Moscow Hertzen Oncology Institute, Moscow, Russia

Introduction and Objectives: Despite the increasing incidence of localized renal cell carcinoma (RCC) up to 20-25% of patients are still diagnosed with locally-advanced RCC. The aim of the study was to compare long-term results of surgical treatment of pT3a and pT3b RCC patients and to assess influence of pathomorphological factors on recurrent-free (RFS) and cancer-specific survival (CSS).
Materials and Methods: Database of 1029 RCC patients undergone surgical treatment at Moscow Hertzen Oncology Institute since 1993 till 2012 was analyzed. In the study 115 (13.4%) pT3a and 37 (3.6%) pT3b patients were included. Statistical analysis was performed with Statistica 8 software.
Results: Median follow-up time was 42.5 months (2-225) in pT3a group and 41 months (2-206) in pT3b group, respectively. Disease recurrence was identified in 29 (21.0%) pT3a patients and in 17 (45.9%) pT3b patients (p=0.02). 16 (11.6%) pT3a and 8 (21.6%) pT3b patients died due to disease progression (p=0.3). Five-year RFS in pT3a and in pT3b group was 69.8% and 49.8%, respectively (p=0.04). Five-year CSS in pT3a and in pT3b group was and 83.5% and 72.9%, respectively (p>0.05). In patients with pT3b disease tumor size (R=0.26), presence of sarcomatoid differentiation (R=0.23), presence of necrosis (R=0.3) were predictors of recurrence and death due to disease progression (p<0.05). Cox analysis revealed that presence of necrosis and sarcomatoid differentiation were predictors of RFS and CSS in pT3a patients. No significant correlation was found between vascular invasion, pN+ stage, Fuhrman grade, number of tumors and histological type of tumor (p>0.05).
Conclusions: Five-year RFS in pT3a patients was 69.8% and in pT3b patients – 49.8% respectively (p=0.04). Five-year CSS were similar in both groups (p=0.26). Presence of necrosis and sarcomatoid differentiation were predictors of outcome in pT3a patients.

UP.027

Long-Term Results of Treatment of Patients with Brain Metastases of Renal Cell Carcinoma

Kalpinskiy A**, Alekseev B**, Zaitsev A, Kurzhupov M, Nyushko K, Kirsanova O, Kaprin A
Moscow Hertzen Oncology Institute, Moscow, Russia

Introduction and Objectives: Among patients (pts) with renal cell carcinoma (RCC) intracranial metastases (mts) are diagnosed in 2-17%. Target therapy is not usually effective in this case. Surgery is the most frequent method to be applied. The aim of our study was to evaluate overall (OS), cancer-specific (CSS) and progression-free survival (PFS) of RCC pts with brain mts and assess prognostic factors of survival.
Materials and Methods: We included in the study 28 pts with metastatic RCC after surgery for brain mts since 2009 till 2013. Mean age was 56.4±8.6 years (43-75). Subtentorial localization of mts was observed in 6 (21.4%) pts, in 22 (78.6%) pts lesions were diagnosed in hemisphere of the brain. Extracranial mts were diagnosed in 18 (64.3%) pts. Single intracranial mts were diagnosed in 22 (78.6%), two mts were found in 5 (17.8%) and 1 (3.6%) - with 4 intracranial mts. Median Karnofsky performance status was 70% (60-80%) pts. Statistical analysis was performed with Statistica 8 software.
Results: Target therapy was administered in 18 (64.3%) pts, whole brain irradiation or stereotactic radiosurgery was applied in 4 (14.3%) pts. No additional treatment was done in 4 (14.3%) pts. Median follow-up time was 8 (2-71) months. PD was diagnosed in 7 (25%) pts. Death was observed in 11 (39.3%) pts; death due to PD was diagnosed in 9 (32.1%) pts. Reoperations for intracranial tumor progression were performed in 5 (17.8%) cases due to appearance of new lesions. Only 2 (7.1%) pts died due to intracranial PD. Median PFS was 6 (2–58) months. Median OS and CSS were 8 (2-71) months. Cox regression analysis revealed statistically significant correlation between extracranial mts (p=0.038), completeness of brain mts removed (p=0.048); number of brain mts (p=0.05) and CSS. A trend to improving of OS was found in pts with absence of extracranial mts (p=0.09).
Conclusions: Surgical treatment of metastatic RCC with solitary brain mts improves quality of life in this poor prognostic group of pts and creates conditions for further treatment.

UP.028

The Neoplasic Retroperitoneal Fibrosis: About 21 Cases

Fourati M, Hadj Slimen M, Chaabouni A, Rebai N**, Touaiti T**, Bouacida M, Mhiri M
CHU Habib Bourguiba, Sfax, Tunisia

Introduction and Objectives: The neoplasic retroperitoneal fibrosis (NRPF) is a metastatic invasion of the retroperitoneum by a fibrous tissue containing malignant cells. The object of our study is to analyse clinical features and different therapy application and evaluate the prognosis of this pathology.
Materials and Methods: Our study is retrospective, about 21 patients who were treated for NRPF during a period of 28 years (1985–2013).
Results: The average age was 52 years (38 to 72 years). There was slight women predominance with a sex ratio of 0.63. The causal neoplasia was cervical neoplasia in 9 cases, ovary neoplasia in 2 cases, digestive neoplasia in 8 cases and breast neoplasia in 2 cases. Clinical symptoms were lumbar pain in 14 cases, obstructive anuria in 5 cases, and macroscopic hematuria in 2 cases. Imaging made diagnosis in all cases. Drainage of urine was realized by percutaneous nephrostomy (9 cases), surgical nephrostomy (4 cases), and retrograde catheterization by double J stent (8 cases). Palliative treatment was indicated for 14 patients. 12 patients were surviving after a mean follow-up of 6 months.
Conclusion: NRPF is a severe disease with no specific symptoms. Imaging makes the diagnosis, localizes a possible primitive neoplasia and evaluates the effect on the upper urinary tract. Treatment is palliative in the most of the cases.

UP.029

The Extra-Adrenal Pheochromocytoma: About Four Cases

Fourati M, Hadj Slimen M, Rebai N, Touaiti T, Hamza M, Bouacida M, Smaoui W, Mhiri M
CHU Habib Bourguiba, Sfax, Tunisia

Introduction and Objectives: The extra-adrenal pheochromocytoma is a neuroendocrine tumor of ectodermal origin, arising from chromaffin tissue. In 90% of cases pheochromocytoma is located at the suprarenal gland and in 10% it is extra-adrenal. In the latter case, it can be located at the paravertebral sympathetic ganglion chain. Through this report, we propose to show the clinical, radiological and therapeutic aspects of these tumors.
Methods and Materials: Our study is retrospective. We have collected four patients operated in our department for ectopic pheochromocytoma.
Results: All patients were female with an average age of 34 years (17-71 years). The tumor was precaval in two cases, lateroaortic in one case and at the right renal pedicle in one case. The average tumor diameter was 65mm (30-120mm). The revelation was typical in all cases, with headaches, paroxysmal flushing and hypertension. The diagnosis was suggested by the Metanephrine assay and the CT which showed a retroperitoneal tissue-density tumor, enhanced early and heterogeneously after injection of contrast dye. A MRI performed in one case had objectified a retroperitoneal lesion of the renal pedicle which was T1 isointense and T2 hyperintense, enhanced after gadolinium injection. The hormone assays revealed an increase of methoxylated derivatives in all cases. The diagnosis was confirmed by histological examination of the surgical specimen. After medical preparation, all patients were operated and a complete excision of the tumor was performed without incident, excepting some hypertensive peak and tachycardia during the handling of the tumor. The outcome was favorable in all cases with no complication or recurrence, for a mean period of 25months of follow-up (11-49 months).
Conclusion: Extra-adrenal pheochromocytomas are rare. Diagnosis should be considered when we have a clinical and biological pheochromocytoma with no adrenal tumor. CT and MRI can often locate these tumors; otherwise, MIBG scintigraphy is indicated. The treatment is surgical, the long-term follow-up is mandatory.

UP.030

Open Partial Nephrectomy versus Laparoscopic Radical Nephrectomy: A Matched Pair Analysis of Peri-Operative Complications, Mid-Term Morbidity and Oncological Outcomes

Gallagher K[1,2], Grossart C[2], McClean K[2], O'Connor K[1], Riddick T[1], McNeill A[1], Stewart G[1,2]
[1]Dept. of Urology, Western General Hospital, Edinburgh, UK; [2]University of Edinburgh, Edinburgh, UK

Introduction and Objectives: Open partial nephrectomy (OPN) and laparoscopic radical nephrectomy (LRN) have never to our knowledge been directly compared. We aimed to determine if there were differences in peri-operative complications, long-term morbidity, survival and oncological outcomes between OPN and LRN by way of a matched pair analysis.
Materials and Methods: We retrospectively reviewed all partial nephrectomies performed at a single institution. We then matched T1a-b OPNs with elective/relative indication to T1a-b LRNs for age, gender, tumour size, T, N and M stage, histological subtype and pre-operative CKD, then compared outcomes.
Results: Results are summarized in Table 1. From 113 OPNs and 1124 LRNs performed between 1996 and 2013, 36 OPNs were matched to 36 LRNs. OPN was associated with more clavien grade 1 (but not grade 2 or more) complications, significantly higher blood loss, significantly higher positive margin rate, significantly longer length of stay and significantly higher non-renal mid-term morbidity. The rate of 1 stage CKD advancement was significantly higher in the LRN group (17 vs. 4 RR4.0 95%

CI1.5-10.8 p=0.001). Zero OPNs and 5 LRNs had 2-stage CKD advancement. There was no significant difference in mid-term mortality or recurrence although at one-year follow-up, 2 LRNs had recurrence versus 0 OPNs.
Conclusion: In otherwise identical patients with T1 RCC managed with OPN or LRN there are more minor peri-operative complications, longer length of stay and significantly higher risk of mid-term morbidity with OPN. Whilst LRN has 4-fold higher rates of long-term CKD this did not correspond to reported morbidity. In the face of equivalent oncological outcomes, the balance of NSS versus RN may move towards RN in some cases of T1 RCC when the two options available are *open* nephron surgery (NSS) versus *laparoscopic* radical nephrectomy (RN) as opposed to the two open approaches examined in the only RCT of NSS versus RN.

UP.030, Table 1.

	Matched OPNs (% or Median+IQR)	Matched LRNs (% or median+IQR)	p-value for matched pairs
All	36	36	
Operative			
Operation time	142.5 (100 – 210)	140.0 (70 – 210)	NS
Blood loss	346.4 (50-800)	145 (50–100)	0.02
Transfusion	0	0	-
Positive margins	5 (13.9)	0	0.02
Complications			
None	13 (36.1)	22 (61.1)	0.04
Clavien I	9 (25.0)	4 (11.1)	0.06
Clavien II	12 (33.3)	10 (27.8)	NS
Clavien III	1 (2.8) (urine leak)	0	NS
Clavien IV	0	0	-
Clavien V	0	0	-
Long term morbidity	12 (33.3)	1 (2.8)	0.003
Median length of stay day	7 (5-7.25)	4 (3-5)	0.01
Recurrence			
Median follow-up (months)	38 (2, 136)	61.7 (8, 132)	0.002
Rate	1 (2.8)	3 (8.3)	0.63
Time to recurrence	39 months	7,7 and 47 months	-
Mortality			
All cause	2 (5.6)	4 (11.1)	0.38
Cancer specific mortality	0	0	-
Post-op survival (months, each case)	45,57	25,42,8,64	-
CKD			
Pre op	4 (11.1)	4 (11.1)	NS
≥1 stage advancement	4 (11)	17 (47)	0.001
2 stage advancement	0	5 (13.9)	0.06

UP.031
Establishment of Andrological Services in Remote Regions of the Russian Federation
Aliev R[1], Neimark A[2], Subbotin E[2], Nasedkina T[1]
[1]Andrology Center of Altai Region, Barnaul, Russia; [2]Dept. of Urology, Altai State Medical University, Barnaul, Russia

Introduction and Objectives: The profession of "an andrologist" has no legal recognition in Russia and most other foreign countries, there are no unified standard of teaching concerning this profession, there is no clear definition of an andrologist's competence, that is why it is urgent to organize a system of measures aimed at creation and development of an andrological service. As a result of orderly andrological service system absence, the occurrence of andrological diseases in Siberia is 1.5 times higher than the average in Russia.

Materials and Methods: Medical (physical examination of patients, clinical and biochemical investigation of blood, urine, ejaculate examination, estimation of antioxidant system status, transrectal ultrasound of prostate, Doppler ultrasonography of penis with an intracavernous pharmacological test, laser Doppler fluometry of prostate and penis); sociological (questioning, expert poll); statistical.
Results: Unfavorable demographic situation in Siberia, Russia, during the last 6 years has resulted in decrease in male population by 60,000 people, and occurrence of andrological diseases in this region is 91.3% higher than the average in Russia. All that demands to establish an andrological service. Under the conditions of a new andrological service based on a modular approach, it has been proved that: 1) the most effective treatment of vasculargenetic erectile disorder was based on pelotherapy and pharmacotherapy by minute doses of antibodies to nitric oxide synthase, the results appeared in normalization of penis haemodynamics rates and increase in male copulative function rate by 1.5 times; 2) maximum effect was reached when the scheme was supplemented with a complex treatment of chronic abacterial prostatitis by pelotherapy, vibrothermomagnetic therapy and minute doses of antibodies to PSA (haemodynamics rates and antioxidant prostate status normalized, life quality according to SOS-HP scale improved 5.5 times); 3) the use of pelotherapy for male sterility treatment normalized the ejaculate antioxidant status and increased its fertility 4.1 times. The establishment of the andrological center was followed by increase in aid appealability by 3.6 times during the last 4 years, the number of examinations increased 3.7 times, detectability of andrological diseases increased 4.2 times, treatment efficiency increased 1.9 times, therapists' andrological suspicion rose 2.5 times. All that shows higher effectiveness of andrological help under the conditions of the new model based on a modular approach in Siberia, Russia. To optimize the work of andrological service an original software product has been created – A Computer-aided Work Place of an Andrologist, some recommendations have been also put forward to establish a telemedical andrological net in Siberia adjusted for its peculiarities.
Conclusions: Andrological diseases prevalence in Siberia, Russia, has been studied, modern approaches to their treatment have been worked out under conditions of modular componentry of andrological service.

UP.032
Efficacy of Fesoterodine on Nocturia and Quality of Sleep in Patients with Overactive Bladder
Takeda H, Nakano Y, Narita H
Dept. of Urology, Tosei General Hospital, Aichi, Japan

Introduction and Objectives: To examine the effect of Fesoterodine for not only overactive bladder symptoms but also sleep disturbance. Nocturia and urgency are independent factors for sleep disturbance.
Materials and Methods: A total of 38 patients with overactive bladder symptoms and sleep disturbance were enrolled in this study. The overactive bladder symptoms score (OABSS), Athens insomnia scale (AIS) KHQ, N-QOL and Bother Index:VAS were used as a subjective questionnaire for overactive bladder symptoms and insomnia. We evaluated the changes of each parameter before and 2 to 4 to 12 weeks after the administration of fesoterodine 4 mg per day. Statistical comparisons before and after the administration were made using the Wilcoxon signed-rank test. To examine the relation between OABSS and AIS, Spearman's testing was used for correlations between independent variables and P<0.05 was considered statistically significant.
Results: Total OABSS and total IPSS were significantly improved and obtained an early effect after administration of Fesoterodine (OABSS: 8.4±2.9 → 6.3±2.7 → 5.9±2.7; IPSS: 17.6±7.1 → 13.2±6.6 → 11.8±6.1). Seventy nine percent of patients were under sleep disturbance before treatment in AIS. The categories of urgency and nocturia in OABSS and the categories of awakening during the night and sleep quality in AIS were also significantly improved. The AIS showed that total sleep time and Functioning (physical and mental) during the day were significantly improved. Hours of undisturbed sleep was significantly longer with fesoterodine 4 mg, improvement in King's Health Questionnaire Sleep/Energy scores was significantly greater.
Conclusion: These results suggest that fesoterodine may reduce nocturnal micturitions and improve sleep quality and QoL in overactive bladder patients with nocturia.

UP.034
Comparison Regarding Nocturia between Data from Questionnaire and Frequency-Volume Charts
Muraoka K[1], Honda M[1], Hirano S[1], Kawamoto B[1], Shimizu S[2], Panagiota T[1], Hikita K[1], Saito M[2], Sejima T[1], Takenaka A[1]
[1]Tottori University, Yonago, Japan; [2]Kochi University, Kochi, Japan

Introduction and Objectives: In addition to the International Prostate Symptom Score (IPSS), the patient-completed frequency-volume chart (FVC) is also commonly used in clinical trials as a primary tool for measuring subjective signs related to the lower urinary tract. It has been noted that there are relevant differences in questionnaire-based estimates of nocturia and nocturia values derived from FVCs. Therefore, the present study was conducted to compare nocturia, as estimated by the IPSS and a 3-day FVC, and identify factors that correlate with nocturia.
Materials and Methods: A total of 210 patients, referred for the evaluation of lower urinary tract symptom (LUTS) to our hospital, were analysed. At the initial visit, all patients answered IPSS questionnaire and subsequently were requested to complete a 3-day FV chart. IPSS-FVC was defined as IPSS calculated from the FVC. Patients were categorized into three groups: Group A patients, who underestimated the nocturia number in the IPSS; Group B patients, who estimated the nocturia number in the IPSS and IPSS-FVC equally; and Group C patients, who overestimated the nocturia number in the IPSS.
Results: In total, 64 patients (37 men, 27 women; mean age 67.9 years, range 26-87 years) were eligible for evaluation. In Groups A, B, and C, the mean nocturia scores of IPSS Q7 and IPSS-FVC Q7 were 2.4 ± 1.3 and 3.5 ± 1.5, 3.2 ± 1.5 and 3.2 ± 1.5, and 2.8 ± 1.4 and 1.3 ± 1.1, respectively. Group C patients had significantly lower nocturnal urine volume (NUV) (P 0.006) and nocturnal polyuria index (NPi) (P 0.013) than Group B patients. A significant correlation was found between the score of IPSS Q7 minus IPSS-FVC Q7 and NUV (r = -0.304, p .014), and between the score of IPSS Q7 minus IPSS-FVC Q7 and NPi (r = -0.344, p = 0.005).
Conclusion: The present results suggest that the FVC should be included as an integral part of the evaluation for nocturia, and the IPSS questionnaire and FVC may complement each other to obtain more accurate evaluation of nocturia.

UP.035
Is Type 2 Diabetes Mellitus Associated with Overactive Bladder Symptoms in Men with Lower Urinary Tract Symptoms?
Bang W[1], Yoo C[1], Cho J[1], Han J[1], Lee Y[1], Ko K[1], Yang D[1], Lee W[1], Cho K[2]
[1]College of Medicine, Hallym University, Chuncheon, South Korea; [2]Yonsei University College of Medicine, Seoul, South Korea

Introduction and Objectives: To elucidate the relationship between type 2 diabetes mellitus (DM) and overactive bladder symptoms in men with lower urinary tract symptoms (LUTS), after adjusting for the impact of age and prostate volume.
Materials and Methods: Data were obtained from a prospectively maintained database of 905 first-visit patients with LUTS/BPH. After excluding those with comorbidities that may affect urinary symptom, we selected 139 patients with type 2 DM and 139 non-diabetic controls, matched by propensity scoring for age and prostate volume.
Results: There were no differences in voided volume and maximal flow rate between the two groups, whereas residual urine volume was significantly higher in DM patients than controls (29.34±26.99 mL vs. 22.45±23.25 mL, p=0.028). The total International Prostatic Symptom Score was significantly higher in DM patients than controls (17.80±7.60, 15.88±7.05, p=0.031). Storage (7.45±3.21 vs. 6.58±3.11, p=0.024) and post-micturition (2.57±1.49 vs. 2.19±1.59, p=0.045) symptom scores were higher in DM patients than controls, whereas the groups had similar voiding symptom scores (p=0.104). Among storage symptoms, DM patients had higher frequency (p=0.010) and nocturia (p=0.003) scores, but similar urgency scores. The Overactive Bladder

UP.035, Table 1. Differences in IPSS questionnaire results between the diabetic and control groups

	Diabetic group	Control group	P-value
Number of patients	139	139	-
Total IPSS score	17.80±7.60	15.88±7.05	0.031
Voiding symptom score	7.90±4.17	7.11±3.84	0.104
Interruption	2.49±1.64	2.14±1.64	0.082
Weak stream	3.21±1.54	3.04±1.50	0.339
Hesitancy	2.20±1.65	1.93±1.56	0.167
Storage symptom score	7.45±3.21	6.58±3.11	0.024
Frequency	2.71±1.47	2.27±1.34	0.010
Urgency	2.25±1.45	2.26±1.46	0.951
Nocturia	2.49±1.18	2.06±1.20	0.003
Post-micturition symptom score	2.57±1.49	2.19±1.59	0.045
Quality of life	3.88±1.13	3.64±1.13	0.087

Data are mean ± standard deviation
IPSS, International Prostate Symptom Score
P-value for Student or Welch two sample t-test

UP.035, Table 2. Differences in OABSS questionnaire results between the diabetic and control groups

	Diabetic group	Control group	P-value
Number of patients	139	139	-
Diagnosis of OAB	71 (53.0%)	65 (47.8%)	0.394*
Total OABSS score	5.62±3.40	4.54±3.06	0.006†
Daytime frequency	0.60±0.56	0.52±0.54	0.240†
Nocturia	2.14±0.91	1.71±0.93	<0.001†
Urgency	1.94±1.62	1.60±1.50	0.077†
Urge incontinence 0.94±1.47 0.71±1.21 0.155†			

OABSS, Overactive Bladder Symptom Score
* P-value by chi-square test, † P-value by Student or Welch two sample t-test

Symptom Score was also significantly higher in DM patients; this difference was due to a higher nocturia (but not urgency) score.
Conclusion: DM patients with LUTS/BPH had greater storage and post-micturition symptoms than age and prostate volume-matched controls. The disparity in storage symptoms was mainly due to frequency and nocturia, rather than urgency.

UP.036
Health Care Service Utilization among Patients with Bladder Pain Syndrome/ Interstitial Cystitis in Taiwan
Wu W[1], Chung S[1], Li H[2], Lin H[2]
[1]Dept. of Surgery, Div. of Urology, Far Eastern Memorial Hospital, Ban Ciao, Taipei, Taiwan; [2]School of Health Care Administration, Taipei Medical University, Taipei, Taiwan

Introduction and Objectives: This study aims to investigate the differences in the utilization of healthcare services between patients with bladder pain syndrome/interstitial cystitis (BPS/IC) and patients without using a population-based database in Taiwan.
Materials and Methods: This study comprised of 350 patients with BPS/IC and 1,750 age-matched controls. Healthcare resource utilization was evaluated in the one-year follow-up period as follows: number of outpatient visits and inpatient days, and the mean costs of outpatient and inpatient treatment. A multivariate regression analysis was used to evaluate the relationship between BPS/IC and total costs of health care services.
Results: For urological services, patients with BPS/IC had a significantly higher number of outpatient visits (2.5 vs. 0.2, p<0.001) as well as significantly higher outpatient costs ($US166 vs. $US6.8, p<0.001) than the controls. For non-urologic services, patients with BPS/IC had a significantly high number of outpatient visits (35.0 vs. 21.3, p<0.001) as well as significantly higher outpatient cots ($US912 vs. $US675, p<0.001) as compared to the controls. Overall, patients with BPS/IC had 174% more outpatient visits and 150% higher total costs than the controls. Multiple-regression-analyses also showed that the patients with BPS/IC had significantly higher total costs for all healthcare services than the controls.
Conclusion: This study found that patients with BPS/IC have a significantly higher number of healthcare related visits, and have significantly higher healthcare related costs than age-matched controls. The high level of healthcare services utilization accrued with BPS/IC was not necessarily exclusive for BPS/IC, but may have also been associated with medical co-morbidities.

UP.037
The Correlation Postmicturition Dribbling between LUTS and Prostatic Parameter
Kim H[1], Kim J[1], **Chang Y**[1], Kim H[1], Kim H[2]
[1]Dept. of Urology, Konyang University College of Medicine, Daejeon, South Korea; [2]Dept. of Urology, Dankook University College of Medicine, Cheonan, South Korea

Introduction and Objectives: Postmicturition dribbling is one of the bothersome symptoms for men with benign prostatic hyperplasia. They soak clothes. Kegel exercises and bulbar massage would improve their symptom or take a long time lasting. Ever the reason for the postmicturition dribbling, and yet the point is not enough research. In one complained of lower urinary tract symptoms in patients with prostate transrectal ultrasound of the measured parameters were analyzed for correlation between the symptoms and parameter.
Materials and Methods: The records were obtained from a prospectively maintained database for first-visit men with lower urinary tract symptoms in our hospital. International Prostate Symptom Score, terminal dribbling and postmicturition dribbling were assessed. The prostate-related parameters, including prostate volume, PUA, and intravesical prostatic protrusion, were measured using transrectal ultrasonography.
Results: From December 2013 to February 2014, 27 male patients with LUTS were

UP.037, Table 1. Mean of IPSS and Terminal Dribbling and Post-Micturition Dribbling

IPSS	Q1	Q2	Q3	Q4	Q5	Q6	Q7	QoL	Terminal dribbling	Postmicturition dribbling
Mean	2.1±1.7	2.3±1.5	2.0±1.5	1.7±0.9	3.0±1.6	1.8±1.6	1.9±1.2	3.4±1.6	2.2±1.4	1.4±1.2

UP.037, Table 2. Questionnaire of Terminal Dribbling and Postmicturition Dribbling

In the past month	Not at All	Less than 1 in 5 Times	Less than Half the Time	About Half the Time	More than Half the Time	Almost Always
Terminal dribbling How often have you found urine dribbles slowly towards an end?	0	1	2	3	4	5
Postmicturition dribbling How often have you found urine continues to leak after micturition?	0	1	2	3	4	5

enrolled. Mean age of LUTS patients was 61.1±10.3 years old. Mean of postmicturition dribble score was 1.4±1.2 point. The results of mean score of IPSS were described (Table 1). If postmicturition defined as 1 more point, the prevalence of postmicturition dribbling was 77.8%. If postmicturition dribbling was defined as less than 1 in 5 times, prevalence of postmicturition dribbling was 40.7%. On student t-test analysis, the terminal dribbing (p=0.01) and prostatic width (P=0.04) was correlated with postmicturition dribbling.
Conclusions: Postmicturition dribbling was common symptom. It was correlated with prostatic parameter and urinary symptoms as terminal dribbling. It is needed further large-scale study for the prevalence and corelations of symptoms and prostatic parameter in the LUTS patients.

UP.038
Effect of Double-J Stent during 3 Days after Ureteroscopic Lithotripsy
Seo Y, Lee K**, Kim K**
Dept. of Urology, Dongguk University Medical Center, Gyeongju, South Korea

Introduction and Objectives: Ureteroscopic lithotripsy (UL), for renal or ureteral stones, is a standard technique for every urologist. However, the length of time the double J (DJ) stent needs to be kept in postoperatively is still controversial. This study investigated double-J stenting during 3 days after UL affects postoperative adverse events, especially infection and pain, compared with D-J stenting during 7 days.
Materials and Methods: Sixty patients were enrolled in this study and data were analyzed prospectively between Aug. 2012 and Jan. 2013. Patients were classified into two groups: patients with D-J stenting during 3 days after UL were assigned to Group 1, and those with during 7 days were assigned to Group 2 in terms of IPSS, visual analog pain score, febrile complications, urinalysis, and the need to give antibiotics at the time of DJ stent removal.
Results: There were no statistically significant differences between the two groups in preoperative variables (mean age: 55.82±11.67 years vs. 50.58±14.25 year, p=0.149, preOP IPSS: 9.80±7.42 vs. 10.42±6.78, p=0.749, VAPS: 2.40±2.43 vs. 2.84±3.07, p=0.58). And also, there were no statistically significant differences in preoperative voiding symptom and storage symptom (6.22±5.46 vs. 4.08±3.27, p=0.651, 4.44±3.76 vs. 4.75±3.18, p=0.137, respectively). However, postoperative storage symptom scores were lower in Group 1 than Group 2 (4.00±2.17 vs. 6.40±3.62, p=0.047). And frequency and urgency were lower in Group 1 than Group 2 (1.57±1.65 vs. 2.90±1.65, p=0.023, 0.29±0.73 vs. 1.90±1.62, p=0.001). In addition, the cases with D-J stenting during 3 days after UL had no statistically significant difference in complications, compared with those during 7 days after UL (p=0.327).
Conclusions: This study investigated D-J stenting during 3 days after transurethral UL decreased IPSS, such as storage symptom score, compared with during 7 days after UL. Our results demonstrated that a shorter duration (3 days) of stenting was better than longer duration (7 days) of stenting after UL.

UP.040
Influence of Unilateral Orchiectomy on Contralateral Testis in Rat, Prepubertal and Postpubertal
Ahmadnia H[1], Dolati M[2], Khaje Daluee M[3], Kamalati A[4], Imani M[2], Younesi Rostami M[5]
[1]Dept. of Urology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; [2]Dept. of Urology, Ghaem Hospital, Mashhad University of Medical Sciences, Mashhad, Iran; [3]Dept. of Community Medicine, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; [4]Dept. of Urology, Faculty of Medicine, Kerman University of Medical Sciences, Kerman, Iran; [5]Dept. of Urology, Faculty of Medicine, Mazandaran University of Medical Sciences, Sari, Iran

Introduction and Objectives: The present study was conducted to investigate the influence of unilateral orchiectomy and age of orchiectomy on the subsequent contralateral testis.
Materials and Methods: A total of 64 Wistar-derived male rats were divided randomly in 4 groups. Group 1 named immature intervention, Group 2 immature control, Group 3 mature intervention and Group 4 mature control. In Group 1, rats castrated unilateral at 30 days of age (prepubertal). In Group 2 sham surgery (midscrotal incision) was done at same age. In Group 3, rats castrated unilateral at 70 days of age (postpubertal) and in Group 4 sham surgery was done at same age. Twenty days after first surgery, in intervention groups, contralateral orchiectomy was done and in control groups random orchiectomy (left or right) was done. Blood sampling for evaluation of serum testosterone was performed just before the second surgery.
Results: Testis weight and the mean testicular weight per 100 gr of body weight were greater in groups 1 and 3. These parameters were greater in prepubertal group (Group 1) than postpubertal group (Group 3). There was no appreciable difference in serum testosterone levels in 4 groups.
Conclusion: Our research demonstrated that unilateral orchiectomy resulted in compensatory hypertrophy of the remaining testis and it decreased as the animals become older. Unilateral orchiectomy doesn't lead to reduction in serum testosterone levels and remaining testis can retrieve a normal serum testosterone level.

UP.041
Bladder Function Changes according to the Dosage of Tamsulosin among the Spinal Cord Injured Rats Model
Han D[1], Lee M[2]
[1]Gun-San Medical Center, Gun-San, South Korea; [2]Wonkwang University, Iksan, South Korea

Introduction and Objectives: Studies regarding the mechanism or the dosage of Alpha blocker used for neurogenic bladder after spinal cord injury are needed. In this study, change in urination and bladder contractility of spinal cord injured rats (SCIR) according to tamsulosin dosage was observed.
Methods: A total of 55 female Sprague-Dawley rats were used for the study and they were randomly divided into 4 groups: Group 1 (n=10)-normal ones, Group 2 (n=15)-SCIR+vehicle, Group 3 (n=15)-SCIR+0.1mg/kg of tamsulosin, Group 4 (n=15)-SCIR+1mg/kg of tamsulosin. Spinal cord was surgically transected during the T10 level. Tamsulosin was intraperitoneally injected two times a day (at 9 AM and 6 PM) and for a week. Awaken cystometry and the organ bath study were performed after 7 days. Medicinal reactions of the change in bladder contractility according to following factors were comparatively analyzed: acetylcholine (Ach, 10-9~10-4 M) alone, Ach with AQ-RA 741 (M2 blocker) or 4-DAMP (M3 blocker) 10-7 M pretreated.).
Results: All spinal cord injured rats showed significant decrease in the bladder function regarding awaken cystometry, compared to the control group. Micturation duration was increased with considerable amount only in the Group 3, compared to other two experimented groups ($p<0.05$). Other parameters showed no significant difference. In the organ bath study, acetylcholineinduced contractility in the SCIR groups was significantly higher than the control group. Only Group 3 showed considerable decrease in contractility by acetylcholine with 4-DAMP pretreated, among the SCIR groups.
Conclusions: These results suggest that neourogenic detrusor overactivity caused by denervation hypersensitivity after spinal injury can be decreased by adequate amount of tamsulosin injection (0.1 mg/kg), not high dose (1 mg/kg).

UP.042
Is Urine Bactericidal for Uropathogens (M. Tuberculosis and E. Coli)?
Kulchavenya E[1], Alhovik O[2], Cherednichenko A[2]
[1]Novosibirsk Research TB Institute, Medical University, Novosibirsk, Russia; [2]Novosibirsk Research TB Institute, Novosibirsk, Russia

Introduction and Objectives: Urogenital tract infections are widespread. But the most common infection agent – *E. Coli* – does not obligatorily cause the disease. We supposed the presence of natural protective factors, and

to verify this hypothesis, estimated if urine has bactericidal activity for *E. Coli*, as most common infection agent for cystitis, and for *M. Tuberculosis* (Mtb), as in Siberia there is an epidemic of tuberculosis, and urogenital tuberculosis is topical problem.
Materials and Methods: We investigated urine of 4 groups: young healthy non-pregnant women without sexual activity (urine 1), young healthy non-pregnant women with sexual activity (urine 2), menopausal women (urine 3) and young healthy men (urine 4) with automated BACTEC MGIT 960 system. We studied influence of urine on 2 strains of Mtb and 2 strains of *E. Coli*.
Results: All urinalyses were normal, with 1-3 leucocytes and none erythrocytes in the field of view in microscopy as well as by deep-stick. None of the people had any urological complaints. After the exposure for 60 minutes and 24 hours the growth of *E. Coli* was obtained on blood agar in all samples. Thus, the bactericidal effect of urine of healthy persons on the *E. Coli* in concentrations of $3x10^8$, $1,5x10^8$, $1x0^8$ and $0.75x0^8$ microbial bodies / ml was not observed. Also there was no bactericidal effect of urine concerning Mtb and H_{37} Rv.
Conclusion: Our hypothesis on potential bactericidal activity of health urine for *E. Coli* and Mtb *in vitro* was not confirmed. There are some other protective factors and we plan to estimate them in the future.

UP.043
The Effects of Cynodon Dactylon L. Decoction on Calcium Oxalate Kidney Stones in Rat
Feizzadeh K. B[1], Hajzadeh M[2], Mohammadian N[3], Ayatollahi H[3], Behbudi E[4]
[1]Endoscopic and Minimally Invasive Surgery Research Center, Kidney Transplantation Complications Research Center, Ghaem Medical Hospital, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; [2]Dept. of Physiology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; [3]Dept. of Pathology, Ghaem Medical Hospital, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; [4]Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: Urinary stone prevalence is estimated at 2-3% and different therapeutic methods are used in patients with urolithiasis such as altered nutritional habits and life style or medical and surgical interventions. Herbal medications have been used in several diseases from a long time ago and herein we have studied the role of Cynodon Dactylon boiled concentrate on calcium oxalate urinary stones in the rat.
Materials and Methods: A total of 50 rats were divided in to 5 groups. One percent distilled water was added to the beverage water of the healthy control group. Ethylene Glycol 1% was added to the beverage water of all other groups for 4 weeks. Concentrations of 12/8 and 3/2 of boiled root extract of were used from the beginning in CI and C2 groups and from the second week in Dl and D2 groups. A concentration of 12/8 of boiled leaf extract of Cynodon Dactylon was used from the second week in Group E. Blood and urine specimens were analyzed at the beginning and the end of study and kidneys were sent for pathological studies.
Results: Ethylene Glycole caused significant oxalate calcium crystal formation in urine of male rats but not in female rats so female rats were excluded from our study. Decreased crystal formation was observed in all treatment and prophylaxis groups compare to negative control group. Serum Citrate was increased in almost all case groups but Oxalate wasn't decreased significantly.
Conclusion: Cynodon Dactylon extract in therapeutic or prophylactic doses can significantly decrease Oxalate crystal formation in urine.

UP.044
Do On Demand Irrigation Warmers Provide an Adequate Intraoperative Rate of Irrigation for Holmium Enucleation of Prostate?
Chapman R, Halliday P
Ninewells Hospital, Dundee, UK

Introduction and Objectives: On demand irrigation warmers are widely used to provide a convenient way of irrating warmed fluids for endoscopic procedure. However, concern has been raised that flow rates via these devices are inadequate for safe operating. Holmium enucleation of prostate (HoLEP) requires significant volume and flow rate of irrigation. Poiseuille's Law states the resistance of a tube will result in reduced flow and a reduction in pressure across the tube. The aim of this study was to compare the flow rates provided by one such warming device as compared to a standard giving set whilst simulating HoLEP and to assess the drop in pressure across both giving sets.
Materials and Methods: Simulated apparatus was set up to replicate HoLEP surgery. Simulated design rather than "real life" apparatus was used to allow for repeated testing in a more controlled environment and to avoid adding other variables due to operative and patients differences. Comparison of flow rate and pressure difference was measured whilst using a standard twin bottle irrigation set with wide bore latex free tubing (Fresenius Kabi) with pre warmed fluid and the Ranger Irrigation warming system (3M) with room temperature fluid. Pressure was measured using a pressure line passed via the working channel of the laser resectoscope.
Results: Standard giving set demonstrated lower resistance and higher flow rates. The flow rate was 31% higher (7.2ml/s vs. 5.5 ml/s) and a lower change in pressure across the giving set during irrigation (20 cmH_2O vs. 38 cmH_2O). The resistance therefore is much higher in the Ranger irrigation system which had a much slower flow and greater drop in pressure.
Conclusion: This unique demonstration has lead to a quantitative assessment of commonly used giving sets and has shown that flow rates via a standard giving set is 31% greater than through the Ranger Irrigation warming system. This is felt to result in poor intraoperative vision and poses a potential risk to patient safety during HoLEP and other urological procedures requiring high fluid volumes.

UP.045
The Function of Glycine N-Methyltransferase in the Proliferation of Renal Cell Carcinoma
Song Y, Shiota M, Yokomizo A, Tatsugami K, Naito S
Kyushu University, Fukuoka, Japan

Introduction and Objectives: Glycine N-methyltransferase (GNMT) plays a role in the metabolism of methionine as well as in gluconeogenesis. We have recently reported that the GNMT gene acts as an oncogene. However, little is known about the specific function of GNMT in carcinogenesis and progression in renal cell carcinoma (RCC).
Materials and Methods: To better our understanding of the function of GNMT in RCC, we used siRNAs to examine the effects of GNMT knockdown on cell proliferation and the cell cycle. In addition, the expression of GNMT protein in renal cell carcinoma tissues was evaluated.
Results: We performed Western blotting analysis using normal kidney cells and a panel of RCC cells. GNMT proteins were expressed in normal kidney cell and most RCC cells. GNMT expressions were upregulated in some RCC cells, especially in SKR1 which is high grade RCC cells, compared with normal kidney cells (HEK293) and other RCC cells, especially in ACHN. In immunohistochemistry, GNMT protein was expressed in the cytoplasm of RCC cells. We found that cell proliferations of HEK293 and ACHN cells were slightly decreased by knockdown of GNMT expression transfected with GNMT-specific siRNAs, while the knockdown of GNMT expression induced apparently effect on SKR1 cell proliferation. Furthermore, the knockdown of GNMT expression transfected with GNMT-specific siRNAs in HEK293 cells led to slight increases in the G1 fraction. In contrast, GNMT knockdown in SKR1 induced prominent increases in the sub-G1 fraction, indicating cellular death. To investigate the mechanism of cellular death by GNMT knockdown, Western blotting using an antibody against cleaved PARP, which indicates the presence of degradation products from the

caspase cascade, was employed. GNMT knockdown induced cleavage of PARP in SKR1 cells.
Conclusion: This is the first investigation to reveal the novel finding that GNMT may play an important role in promoting cell growth via the regulation of apoptosis of RCC, especially high grade RCC. The modulation of GNMT expression or function may be a strategy for developing novel therapeutics for RCC.

UP.046

Effect of Allogenic Periurethral Injection Adipose-Derived Stem Cells on Urethral Tissue Regeneration and Voiding Frequency for the Treatment of Stress Urinary Incontinence in a Rat Model

Rizaldi F[1], Yudiana W[1], Mahadi E[1], Alif S[1], Sandhika W[2], Purwati[3], Hardjowijoto S[1]
[1]Dept. of Urology, Airlangga University, Soetomo Hospital, Surabaya, Indonesia; [2]Dept. of Pathology Anatomy, Airlangga University, Soetomo Hospital, Surabaya, Indonesia; [3]Institute of Tropical Disease Center, Airlangga University, Soetomo Hospital, Surabaya, Indonesia

Introduction and Objectives: We investigate the effects of allogenic adipose-derived stem cells (ADSCs) transplantation on urethral tissue regeneration (nerve regeneration, microvessel density, muscle-collagen ratio, muscle-urethral ratio and voiding frequency) after vaginal distension in a rat model.
Materials and Methods: Twenty Four female rats underwent vaginal distension (VD) for 4 hours to establish an animal model of stress incontinence. PKH2-labeled ADSCs from peri-ovary fat ($2x10^5$ in 200 µl PBS, ADSC group, n=12, C groups) or PBS (200 µl, placebo group, n=12, B groups) were injected into periurethral tissue. Six rats without vaginal distension and periurethral injection as control [A]. Periurethral nerve, muscle-collagen ratio, microvessel density and voiding frequency were measured 14 [B1,C1] and 28 [B2,C2] days after injection.
Results: The mean number of nerve regeneration by PGP 9.5 immunohistochemical staining was 5.33±1.15 in A, 7.33±2.94 in B1, 9.17±2.22 in B2, 6.0 in C1, 13±2.36 in C2. This data revealed significant nerve regeneration increase in 28 days ADSCs [C2] compared to placebo [B2] ($p<0.05$). The mean number of microvessel density by Factor VII immunohistochemical was 12.0±0.82 in A, 9.17±1.72 in B1, 9.50±1.64 in B2, 8.67±1.03 in C1, 12.86±2.5 in C2, there was a statistically significant higher microvessel density in 28 days ADSCs group [C2] compared to placebo [B2] ($p<0.05$). Masson's trichome staining revealed significant difference muscle-collagen (0.75[A] vs. 0.5[B1], 0.56[B2], $p<0.05$) or muscle-urethral ratio (0.43[A] vs. 0.33[B1], 0.35[B2]; $p<0.05$) between control and placebo group and no significant difference between control and ADSCs group ($p>0.05$). Voided Stain on Paper showed significant improvement of voiding frequency in 14 days ADSCs group (1.67[B1] vs. 3.43[C1], $p<0.0001$) with insignificant result in 28 days ADSCs group (1.67[B2] vs. 2.00[C2], $p=0.448$) compare to placebo.
Conclusions: ADSCs injection periurethra improve nerve regeneration, microvessel density, muscle-collagen ratio, muscle-urethral ratio, and voiding frequency. This treatment could be an alternative for Stress Urinary Incontinence treatment in animal SUI model.

UP.047

The New Orthotopic Locally Advanced Animal Model of Prostate Cancer

Tavares da Silva E[1], Mamede A[2], Castelo D[1], Guerra S[3], Simões P[1], Mota A[1], Abrantes A[2], Botelho M[2]
[1]Coimbra's Hospital and University Centre, Coimbra, Portugal; [2]University of Coimbra, Coimbra, Portugal; [3]University of Beira Interior, Covilhã, Portugal

Introduction and Objectives: Prostate cancer (PCa) is one of the most common cancers in men and is one of the leading causes of cancer related death worldwide. The development of animal models able to reproduce PCa behaviour to study the mechanisms involved in its progression is essential to improve of the strategies of diagnosis and therapy. The orthotopic transplantation of human cancer cells in rodents, compared with the heterotopic option, leads to the development of PCa in animals with more similar behaviour to human cancer. However, one of the major problems with these models is the lack of metastatic capacity.
Materials and Methods: This study was performed with PC3, a PCa cell line androgen and estrogen independent, obtained from ATCC. For orthotopic inoculation of PCa cell line, Balb/c nu/nu nude male mice (6-8 weeks) were used. After anesthesia, animals underwent surgery in order to inoculate 15x106 cells/animal. Two different types of inoculation were made: in the dorso-lateral portion of the prostate gland (completely orthotopic) and in the seminal vesicles (locally advanced model). It was performed a daily behavioral evaluation of the rats and a weekly body weight measurement.
Results: In the completely orthotopic animals there was no macroscopic tumor formation after 1, 4 or 8 months. However, in locally advanced model, a macroscopic tumor was observed in the seminal vesicles 3 weeks after surgery, as well as secondary liver lesions.
Conclusion: Through this study it is confirmed that the microenvironment is critical for *in vivo* PCa development. In fact, it appears that seminal vesicles microenvironment, which is rich in mitogenic factors, is favorable to the development of this type of cancer. The development of this variant of orthotopic model, which simulates a locally advanced stage, resulted in local disease as well as a metastatic process. This behavior resembles what we know from the human cancer. Further studies are necessary to better characterize this animal model.

UP.048

Micro RNA 100, 145 and 373 in Prostate Cancer: From Gene Regulation to Apoptosis

Iscaife A, Morais D, Reis S, Viana N, Katz B, Moura C, Dip N, Srougi M, Leite K
University of Sao Paulo School of Medicine, Sao Paulo, Brazil

Introduction and Objectives: Micro RNA (miRNA) is a class of non-coding RNA responsible for the expression control of at least 30% of human genes. They regulate important cell processes such as proliferation, migration and apoptosis and have been related to the development and progression of cancer. Recent studies by our laboratory imply some miRNAs in the progression and biochemical recurrence of prostate cancer (PCa). Our aim is to study target genes of miRNAs 100, 145 and 373 and its role in apoptosis in PCa cell lines.
Materials and Methods: miRNAs 100, 145 and 373 and their respective anti-miRNA were transfected in cell lines DU145 and LNCaP using lipid based assay. RT-PCR was used for the analysis of the expression of genes mTOR, SMARCA5, KRAS, cMYC, MMP9 and CD44. Apoptosis was assessed by flow cytometry. The Student t test was use with a significance level of 5%.
Results: miR100 significantly increased apoptosis in LNCaP ($p=0.020$). In contrast, there was an inhibition of apoptosis in DU145 ($p=0.004$) and a reduction in the expression SMARCA5 ($p=0.024$). Mir145 has not affected apoptosis in LNCaP but increased apoptosis in DU145 ($p=0.008$). This microRNA leading to a reduction in the expression of KRAS ($p=0.015$) and cMYC ($p=0.001$) in DU145 and LNCaP ($p=0.004$ and 0.015 respectively). miR373 promoted inhibition in apoptosis in DU145 ($p=0.041$), increased the expression of MMP9 in DU145 ($p=0.016$) and LNCaP (0.004) and reduced CD44 in DU145 ($p=0.031$).
Conclusion: miR100 could be considered a context dependent miRNA while acts as a tumor suppressor in LNCaP (castration-sensitive), and as an oncomiR in DU145 (castration-resistant). miR145 is a tumor suppressor miRNA negatively regulating KRAS and cMYC, increasing apoptosis. miR373 acts as an oncomiR, through the induction of MMP9 and inhibition of CD44, also inhibiting apoptosis in androgen-independent cell line. The understanding of the role of these miRNAs in PCa might bring the possibility to use them as tumor markers and inspire the development of target drugs.

UP.049

Evaluation of Oxidative Stress in Patients with Prostate Cancer, Benign Prostatic Hyperplasia and Asymptomatic Inflammatory Prostatitis Diagnosed

Kaya E, Ozgok I, Eken A, Bedir S, Erdem O, Ebiloglu T, Ergin G
Gulhane Military Medical Academy, Ankara, Turkey

Introductiona and Objectives: Prostate cancer is the most common type of cancer in man. As a result of prostate biopsy or transurethral resection of the prostate in addition to prostate cancer, benign prostatic hyperplasia (BPH) or asymptomatic inflammatory prostatitis (AIP) is often seen as pathological diagnoses.
Materials and Methods: It is known that, severe oxidative stress start with the carcinogenesis initiated by DNA damage. The change in antioxidant enzymes, contributes to this process. In our study, prostate cancer, BPH, AIP and in control group peripheral blood samples were collected to evaluate the oxidant-antioxidant balance. For the evaluation of oxidative stress, malonyldialdehit (MDA) levels were measured. For evaluation of the antioxidant capacity, copper and zinc-dependent superoxide dismutase (CuZn-SOD), selenium-dependent glutathione peroxidase (Se-GPX), catalase enzyme and cofactors of these enzymes copper (Cu), zinc (Zn), selenium (Se) were evaluated.
Results: Prostate cancer group, due to increased oxidative stress MDA, and in response to the increase in the level of antioxidant enzymes catalase, were statistically significant. Se-GPX, CuZn-SOD, Se, Cu, Zn levels were the lowest in the BPH group and were significantly different to control group but there were no significant difference in the prostat cancer group. As a result lipid peroxidation increase in prostat cancer was significant.
Conclusion: Antioxidant enzyme increase is expected to clean radicals such as hydrogen peroxide. The only significant increase was at katalaz levels. Low levels of CuZn-SOD were thought to be relevant to hydrogen peroxide increase and low levels of Se-GPX due to over-consumption.

UP.052

Collagen Scaffold in Urethral Regeneration

Acevedo C[1], Aguilar E[1], Leon B[2], Piña C[3], Molina L[4], Sanchez J[4], Garcia J[2], Gutierrez-Reyes G[1]
[1]Laboratory of Liver, Pancreas and Motility, School of Medicine, UNAM, General Hospital of Mexico, Mexico City, Mexico; [2]Dept. of Surgery, School of Medicine, UNAM, Mexico City, Mexico; [3]Laboratory of Biomaterials, Institute of Research in Biomaterials, UNAM, Mexico City, Mexico; [4]Laboratory of Arrhythmia and Electrophysiology, School of Medicine, UNAM, General Hospital of Mexico, Mexico City, Mexico

Introduction and Objectives: Evaluate a biomaterial obtained of condyle (bone) bovine (Urocoll) as acellular scaffold in the urethral of male dog mongrel.
Materials and Methods: The procedure was performed in 7 healthy male dogs mongrel 15-25 Kg., average ages of 5-10 years. Prior to the surgical procedure was performed retrograde urethrography. During the proceedings were kept under general anesthesia prior aseptic technique and antiseptic. The resection 3 cm of healthy urethra at 45º in the extremes to 2 cm from the meatus of the penis. Urocoll was placed (same geometric shape and size segment urethral resection). For anastomosis by 6 points using vicryl 5-0 at each end. The animals were splinted with a transurethral catheter, cystostomy and drainage. The postoperative care was based in antibiotic, urinary antiseptic. The lifetime is assigned to each dog at random, the periods ranging from 10, 30 (2 dogs), 60 (2 dogs), 90 and 150 days. Retrograde urethrography was performed, prior to the sacrifice of the dog. Subsequently Urocoll implanted segment was resected for histological analysis, the fragment was fixed in formalin and embedded in paraffin, the sample was staining with Hematoxilin and Eosin (H & E), Masson reaction and Citokeratine 7 and 20.
Results: Proliferation urothelial was observed in the surface of Urocoll in all animals. The number of cell layers was directly proportional to the Xenoimplantation days. We showed the presence of normal urothelium cells with staining cytokeratin 7 and 20. A longer time of xenoimplantation, we found fewer residual collagen and minimal fibrosis, was evaluated by Masson staining. The adequate permeability of Urocoll was observed by lumen urethral, the inner diameter was maintaining permeable. The results demonstrated proliferation of normal urothelium, with a progressive reabsorption of xenoimplant and decrease of regenerative nodules, while the form and function of the healthy urethra was conserved.
Conclusion: Urocoll showed biocompatibility, cell regeneration and reabsorption characteristics in Urethral dog. We consider that Urocoll is likely a possible therapeutic option fordiseases such as urethral stenosis, hypospadias and/or epispadias.

UP.053

Can ^{18}F-Fluorodeoxyglucose and ^{18}F-Sodium Fluoride Positron Emission Tomography/ Computed Tomography Be Used to Visualize Kidney and Vascular Changes in a Diabetic Rat Model? A Preliminary Report

Salling M[1], Baun C[2], Thisgaard H[2], Marcussen N[3], Højlund-Carlsen P[2], Lund L[1]
[1]Dept. of Urology, OUH, Odense, Denmark; [2]Dept. of Nuclear Medicine, OUH, Odense, Demark; [3]Dept. of Pathology, OUH, Odense, Denmark

Introduction and Objectives: Diabetes mellitus (DM) is a group of metabolic disorders associated with a number of complications including nephropathy and the formation of atherosclerotic plaques, which involves inflammation and microcalcifications. The aim of the current study was to evaluate the effect of ^{18}F-fluorodeoxyglucose ([18F]FDG) and ^{18}F-Sodium Fluoride ([18F]NaF) positron emission tomography (PET)/computed tomography (CT) on imaging changes in kidney function and vascular alterations in diabetic rats and lean control rats.
Materials and Methods: Thirty weeks old Zucker Diabetic Fatty (ZDF) rats (fa/fa) (n = 4) and Zucker lean (ZL, (?/+)) control rats (n = 2) were followed for 12 weeks and included in this study. Prior to the PET/CT scans urine and blood samples were collected from all animals. For the PET/CT-studies the rats were anesthetised using isoflurane in 100% oxygen prior to injection of either [18F]FDG or [18F] NaF via the tail vein (approx. 15 MBq/100g body weight). At 90 min. p.i. the rats were PET/CT-scanned using a Siemens Inveon Small Animal scanner for 90 min. The dynamic PET scans were reconstructed using the MAP3D reconstruction algorithm and analysed using the Inveon Research Workplace. Afterwards the rats were sacrificed and the kidneys and vascular tissue sent to histochemical and histological examinations.
Results: In both groups it was possible to show [18F]FDG uptake in the kidneys and in the case of two rats (one ZDF rat, one ZL rat) one of the kidneys were shown to be dysfunctional. The insufficient kidney function could not be visualized by [18F]NaF uptake. There was no difference in [18F]FDG uptake in the aortic wall between the two groups. There was a difference between the two groups regarding blood – and urine examinations.
Conclusions: These findings indicate that [18F]FDG is a suitable tool to detect malformation in the kidneys but in the present dose is not able to detect vascular changes.

UP.055

Perspectives for Young Patients with Urothelial Bladder Carcinoma

Pricop C[1], Ciuta C[1], **Suditu N**[1], Miron A[2], Brad A[3], Martha O[3]
[1]Dept. of Urology, University of Medicine and Pharmacy Grigore T. Popa, Iasi, Romania; [2]Clinic of Urology and Renal Transplantation, Clinical Hospital Dr. CI. Parhon, Iasi, Romania; [3]Dept. of Urology, University of Medicine and Pharmacy, Tg. Mures, Romania

Introduction and Objectives: Urothelial bladder carcinoma is a rare condition among young patients but the need of answers regarding their perspectives is obvious. By evaluating clinical characteristics, tumor recurrence and

progression in patients aged below 40 years, our retrospective multicenter study tried to clarify some of them.
Materials and Methods: We retrospectively evaluated the files of 77 patients less than 40 years old from our two centers who were firstly managed with urothelial bladder carcinoma between January 2004 and December 2013. Data were extracted on patients' characteristics, risk factors, tumor characteristics (number, diameter, location, pathological result), intravesical instillation therapy, number of recurrences, time till first recurrence, disease progression.
Results: Age ranged between 18 and 40, with a mean of 33.0 years. Mean follow-up was 42.54 months (12-118 months). Nineteen patients (24.7%) had multifocal tumors. Nine patients (11.7%) had high-grade bladder cancer, and sixty-eight had low-grade disease. Seventy-one patients (92.2%) had non invasive bladder cancer, only 6 (7.79%) suffering of muscle invasive bladder cancer, 3 of them with advanced disease for which they underwent cystectomy and adjuvant chemotherapy. Fifteen (19.5%) patients recurred during follow-up with a good correlation with the high-grade and multifocal tumors at first diagnosis ($p<0.05$). No patient died during follow-up.
Conclusions: Our results showed that urothelial bladder carcinoma in young patients is usually low stage and low grade, mostly non-invasive papillary carcinomas and they have an excellent prognosis; however, a small number of patients may present with high-grade invasive urothelial carcinomas that result in poor clinical outcomes and need aggresive treatment.

UP.056
Chronic Inflammation and Bladder Cancer: How Hot Is the Link?
Kontos S, Nalagatla S
Monklands Hospital, NHS Lanarkshire, Airdrie, Scotland, UK

Introduction and Objectives: Nuclear Factor κ-B (NFκB) is the 'supervisor' protein of chronic inflammation and malignant transformation. NFκB remains in the cytoplasm transcriptionally silent. Activation of NFκB in response to extracellular stimuli leads to translocation to the nucleus and activation of transcription of a plethora of genes, involved in tumor promotion and proliferation. Our objective was to evaluate the expression of NFκB in Transitional Cell Carcinoma of the bladder and its correlation with histological Grade and clinicopathological parameters.
Materials and Methods: Immunohistochemical methodology was performed on formalin-fixed, paraffin-embedded sections from urinary bladder carcinomas of 140 patients (94 males (67.1%) and 46 females (32.9%)), who underwent curative transurethral resection. The patients' age ranged from 23 to 90 years, (mean age =70 years). Their diagnoses were reported as follows: Grade I n=27 (19.3%), Grade II n=30 (21.4%), and Grade III n=54 (38.6%). Twenty nine (20.7%) cases of normal bladder epithelium were selected from patients that underwent diagnostic biopsies. Monoclonal antibody against NFκB was used. Relationship between NFκB and Grades of carcinogenesis were evaluated by Spearman's rank correlation coefficient and validated by Fisher's exact test.
Results: NFκB signal was both cytoplasmatic and nuclear. Cytoplasmatic expression of NFκB was undetectable in 6.9% (2/29) of speciments of normal epithelium and overexpressed in 38.9% (7/29). On the other hand, none of the well differentiated tumor and only 3.3% (1/30) of moderate and 1.8% (1/54) of poor differentiated specimens showed negative NFκB cytoplasmic staining. Statistical analysis revealed a negative correlation between cytoplasmatic molecular expression and Grades of differentiation. As normal cells progressively gained atypical characteristics the cytoplasmic expression of NFκB has been downregulated. No association with age or gender was observed.
Conclusions: Our results indicate an induction of this key molecule along the carcinogenesis path and the level of differentiation. Although inflammation has long been known as a localized protective reaction of tissue, there has been a new realization about its role in cancer. These observations imply that anti-inflammatory agents that suppress NFκB should have a potential role in bladder cancer chemoprevention.

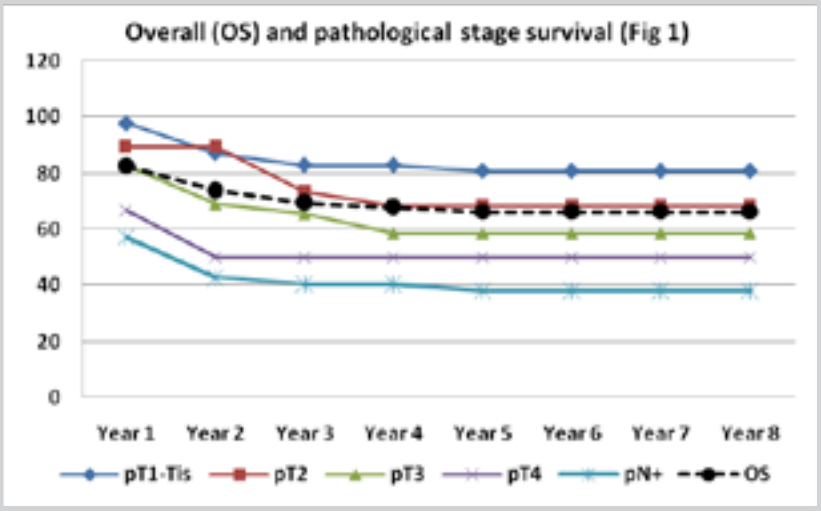
UP.057
Inhibition of Cyclooxygenase-2 (Cox-2): An Opportunity for Bladder Cancer Control
Kontos S[1], Tsafrakidis P[2], Nalagatla S[1]
[1]Monklands Hospital, NHS Lanarkshire, Airdrie, Scotland, UK; [2]Broomfield Hospital, Essex, UK

Introduction and Objectives: Cyclooxygenase-2 (Cox-2), an enzyme that catalyzes the synthesis of prostaglandins, is overexpressed in a variety of premalignant and malignant conditions, including urinary bladder cancer. Our objective was to evaluate the expression of Cox-2 in transitional cell carcinoma of the bladder and we extended our investigation along the entire scale of histologic types and clinicopathological parameters, in order to exert from this key molecule its chemoprophylactic properties.
Materials and Methods: Immunohistichemical methodology was performed on formalin-fixed, paraffin-embedded section from 140 patients (94 male (67.1%) and 46 female (32.9%), the patients' age ranged from 23 to 90, mean age = 70 years), who underwent curative transurethral resection urothelial carcinoma and their diagnoses were reported as follows: grade I n=27 (19.3%), grade II n=30 (21.4%), and grade III n=54 (38.6%). Twenty nine (20.7%) cases of normal bladder epithelium were selected from patient that underwent diagnostic biopsies. Monoclonal antibody against the human Cox-2 molecule was used. A molecular profile was created for each patient and the induction or downregulation of Cox-2 expression was evaluated and documented. Relationships between Cox-2 and stages of carcinogenesis were evaluated by Spearman's rho correlation coefficient and validated by Fisher's exact test.
Results: Statistical analysis of the data on Cox-2 showed a statistically significant relationship between histological stage and expression. 20.7% (14/29) of normal transitional epithelium presented with weak expression of Cox-2, whereas grade III specimen the prevailing group is that of strong expression. The Spearman rank correlation coefficient (r_s) determined a positive direction of correlation ($r_s = 0.15$, p-value = 0.03), meaning that histological stage from normal to a more severe level is characterized by an increase in Cox-2 expression, and revealed a significant trend in Cox-2 expression across the ordered levels of histological stage (p-value =0.04). The expression of Cox-2 was independent of age and gender.
Conclusions: Excessive and prolonged activation of Cox-2 has been linked to numerous human diseases, especially cancer. Identification of the presence and overexpression of the protein in badder tumorgenesis, warrants target specific chemopreventive strategies, such as celecoxib, a widely known selective Cox-2 inhibitor.

UP.058
To Prospectively Assess the Morbidity, Using the Clavien-Dindo Classification and the Medium-Term Outcomes of a Contemporary Radical Cystectomy Series from a Specialist Referral Centre
Nandwani G, Addla S, Singh R, Chahal R
Bradford Teaching Hospital NHS Trust, Bradford, UK

Introduction and Objectives: Radical cystectomy is the standard of care in the management of muscle invasive bladder cancer. There is a lack of reporting complications in a standardised way. We prospectively assessed procedure related complications by using the Clavien-Dindo grading system and the medium-term outcomes.
Materials and Methods: The data was collected from Jan 2006 to December 2013 on 184 patients from our prospectively maintained database. Median follow-up was 48 months (1-96).
Results: The mean age was 67 (31-83). Neoadjuvant chemotherapy and prior radiotherapy was given in 23.6% and 8.15%, respectively. Recurrences developed in 56 (30.43%); of these, local and systemic recurrences occurred in 21 (11.4%) and 35 (19.02%), respectively. Cancer specific and overall survivals at 8 years were 78.8% and 65.76%, respectively. Stage specific overall survivals are shown in Figure 1.

UP.058, Figure 1.



UP.058, Table 1. Details of Major Complications (Clavien-Dindo Grade 3-5)

	Grade 3	Grade 4	Grade 5
Myocardial infarction	1	4	-
CVA	-	-	1
Respiratory failure	-	9	2
Bowel leakage	-	1	2
Ischaemia of conduit	-	1	2
Urinary leakage	3	-	-
Burst abdomen	5	-	-
Toxic mega-colon	-	1	-
Bowel obstruction	1	1	1
Intra-abdominal abscess	-	1	-
Renal failure	1	3	2

Complications were observed in 67 (36.41%) patients; of these, Clavien-Dindo Grade 1 in 7 (3.8%), Grade 2 in 27 (14.67%), Grade 3 in 15 (8.15%), Grade 4 in 10 (5.43%) and Grade 5 in 9 (4.89%). Thirty and 60 day mortalities were 9 (4.89%) and 10 (5.43%). Salvage cystectomy patients had higher grade 3-5 complications but there were no deaths. Bowel related complications included anastomosis leak in 3 (1.63%), obstruction in 3 (1.63%), toxic mega-colon in 1 (0.54%), conduit ischaemia in 3 (1.63%) and uretero-ileal leak in 5 (2.71%). The details of grade 3-5 complications are shown in Table1.

Conclusions: Low grade Clavien-Dindo (1-2) complications occurred in 18.7% and high grade (3-5) in 18.57%. Bowel related complications carried high mortality. Overall survival was related to the final pathological stage.

UP.059

Explorative Study of Urinary Cytokine/ Chemokine Response in the Bladder after Combined Chemohyperthermia for Non-Muscle Invasive Bladder Cancer

Arends T, van der Heijden A, Witjes A
Radboudumc, Nijmegen, The Netherlands

Introduction and Objectives: Bladder wall hyperthermia and intravesical chemotherapy (chemohyperthermia (C-HT)) is a safe and effective treatment option for non-muscle invasive bladder cancer (NMIBC). The molecular pathway explaining the efficacy of C-HT has not been unraveled. To shed light on the molecular mechanism of C-HT induced cell destruction, urinary cytokine & chemokine (CK) levels were determined. The objectives were to explore CK differences between cold Mitomycin (cMMC) and C-HT, and C-HT responders vs. C-HT non-responders.

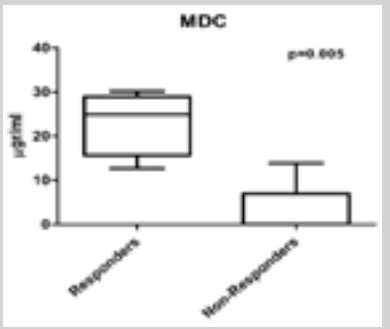
Materials and Methods: Twelve NMIBC-patients were included. Nine received six times C-HT and three received 4 sessions cMMC. Urine was collected on 8-12 time points before and after every treatment, resulting in 624 urines. MDC, IL-2, IL-6, IL-8, IP-10, MCP-1 and RANTES were determined by Luminex®-analysis.

Results: CK-peaks after treatment were clearly visible, in both groups. The majority of cMMC CK-peak levels were lower than peak levels in C-HT treatment. Significant cumulative effects were observed for IP-10 (p<0.001. Table 1) and IL-2 (p=0.023. Table 1). Significant higher concentrations during treatment in the C-HT group were observed for MCP-1 and IL-6 (p=0.049 and p=0.032, respectively. Table 1). Stratifying by C-HT responders and non-responders, MDC levels during the first week

UP.059, Table 1. Estimated Cumulative Effects and Estimated Concentration Differences between C-HT and Cmmc Groups by Linear Mixed Models for Repeated Measurements

Variable	Cumulative effect during treatment; C-HT vs. cold-MMC; [95% CI]	p-value	Concentrations differences; C-HT vs. cold-MMC; µgr/ml. [95% CI]	p-value
MDC	2.966 [-0.958-6.889]	0.133	10.747 [-1.920-23.413]	0.092
MCP-1	10.558 [-31.385-52.502]	0.615	121.265 [0.580-241.950]	0.049
IL-2	0.087 [0.013-0.161]	0.023	0.118 [-0.063-0.301]	0.184
IL-6	0.002 [-1.863-1.866]	0.998	6.810 [0.641-12.979]	0.032
IL-8	-13.374 [-106.500-79.752]	0.776	314.539 [-17.45-646.529]	0.062
IP-10	193.958 [109.961-277.955]	<0.001	100.287 [-121.200-321.773]	0.348
RANTES	-3.292 [-9.533-2.950]	0.285	37.528 [-0.133-75.187]	0.051

UP.059, Figure 1. MDC Peak-Concentration after the First C-HT Instillation, Stratified by C-HT Responders (N=4) and C-HT Non-Responders (N=5)



were significantly higher in the responding C-HT group (p=0.005. Figure 1).
Conclusion: Urinary CK can be detected after MMC-treatment. Significant higher concentrations in the C-HT group were observed in MCP-1 and IL-6. MDC increase after the first C-HT instillation seems related to good clinical outcome, and might be of additional value to personalize treatment. Studies involving more patients and longer follow-up are needed to substantiate this observation.

UP.060
Effect of PTEN Gene Mutations and Environmental Risk Factors on the Progression and Prognosis of Bladder Cancer
Mashhadi R[1], **Pourmand G**[1], Mehrsai A[1], Pakdel S[2], Dialameh H[1], Ahmadi A[3], Salem S[1], Salimi E[3], Mahboubi R[3], Beladi L[1], Alizadeh F[1]
[1]Urology Research Center, Tehran University of Medical Sciences, Tehran, Iran; [2]Dept. of Urology, Kermanshah University of Medical Sciences, Kermanshah, Iran; [3]Dept. of Pathobiology, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran

Introduction and Objectives: Bladder cancer is the most frequent genitourinary malignancy in Iran. Environmental and genetic factors are the two factors linked with bladder cancer expansion. The aim of this study was to investigate the role of PTEN gene and environmental risk factors on the progression and prognosis of bladder cancer.
Materials and Methods: We evaluated 55 tumor specimens and 66 bladder mucosa samples of non-cancerous patients between 2011 and 2013. All samples were analyzed for PTEN mutations using PCR and direct DNA sequencing methods. Demographic data collected, were analyzed using SPSS version 19.0 software and a P value of < 0.05 was considered statistically significant.
Results: Of the 55 patients examined, tumor stage was T1, T2 (T2a, T2b) in 34 (61.8%) and 21 (38.2%) and tumor grade was high, low in 34 (61.8%) and 21 (38.2%), respectively. No mutations in the PTEN gene were found in patients with bladder cancer and control. Among the risk factors studied, only the occupation and history of urinary tract stones, were significantly associated with bladder cancer (P value<0.05). However, other risk factors did not show such a relationship.
Conclusion: No mutation was found in PTEN gene of patients with bladder cancer. Therefore, mutations in this gene cannot predict the prognosis and progression of urothelial bladder cancer. On the other hand, a significant relationship was found between occupation and urinary stones with bladder cancer. This communication reflects the impact of these factors on the risk of bladder cancer.

UP.061
Clinical Application of Prostaglandin Axis in Urothelial Carcinoma of Urinary Bladder: Is There a Role of COX Inhibitor?
Lu K, Lin V, Yu T
E-Da Hospital and I-Shou University, Kaohsiung City, Taiwan

Introduction and Objectives: The aim of study was to analyze the protein expression patterns of EP (prostanoid receptors) subtypes, vascular endothelial growth factore-C (VEGF-C), VEGF-D and vascular endothelial growth factor receptor (VEGFR3) in urothelial cancer of urinary bladder (UB-UC), to identify potential clinical predictors and develop promising chemoprevention strategies.
Materials and Methods: From October 2004 to August 2008, thirty patients with UB-UC were enrolled in this study. The expression patterns of EPs, COX-2, VEGF-C, VEGF-D and VEGF-R3 were examined by immunohistochemical analysis. The results were correlated with clinico-pathological parameters.
Results: The demographic characteristics of enrolled patients were as in Table 1. All subtypes of prostaglandin E receptors were expressed in urothelial cancer tissues, but not in normal bladder tissues. Prostaglandin E receptors were highly expressed in high grade urothelial cancer. Expression of prostaglandin axis was significantly correlated with expression of VEGF-D and VEGFR-3 (p<0.05, chi-square test), but not with that of VEGF-C (not statistically significant).
Conclusion: Expression levels of prostaglandin axis in urothelial cancers were correlated with lymphangiogenesis and involved in tumor progression. Prostaglandin axis appears to be a promising therapeutic modulator in bladder cancer, especially lymphangiogenic pathways. Further prospective study needs to be conducted to investigate how prostaglandin axis was implicated in homeostasis of lymphatic vessels in tumor microenvironment and to verify its role in clinical outcome in bladder cancer.

UP.061, Table1. Patients and clinico-pathological characteristic profile

Number of patients	40
Age	36-83
Average age	64.38±12.06
Gender	
Male	24 (60%)
Female	16 (40%)
T classification	
pT1	24%
pT2	28%
pT3	40%
pT4	8%
Grade	
Low	22.9%
High	77.1%

UP.062
Heme Oxygenase-1 Expression Is Associated with Tumour Aggressiveness and Survival in Patients with Bladder Cancer: Correlation with Smoking Intensity
Asai A, Miyata Y, Mitsunari K, Matsuo T, Ohba K, Sakai H
Nagasaki University, Nagasaki, Japan

Introduction and Objectives: Heme oxygenase (HO)-1 is up-regulated in various cancers, and its function is modulated by cigarette smoking. The aim of this study is to clarify relationships between HO-1 expression and clinicopathological features, survival, and various cancer-related factors that depended on smoking intensity in bladder cancer patients.
Materials and Methods: HO-1 expression was assessed in 215 formalin-fixed specimens by immunohistochemistry. Microvessel density (MVD), lymph-vessel density (LVD), proliferation index (PI), and expression of vascular endothelial growth factors (VEGF)-A, -C, -D, cyclooxygenase (COX)-2, matrix metalloproteinase (MMP)-2, and -9 were also evaluated. Multi-variate logistic regression analyses and Kaplan-Meier survival curves were used.
Results: HO-1 expression was positively associated with T stage, lymph node metastasis, and grade. Multivariate analyses showed that HO-1 expression was positively correlated with smoking intensity. HO-1 expression was also positively associated with PI, LVD, and expression of VEGF-D, COX-2, MMP-2, and MMP-9 ($p < 0.001$). Positive expression of HO-1 was identified to be a significant worse predictor of cause-specific survival by multi-variate analysis. HO-1-related pathological changes were dependent on smoking intensity. The study is limited by its retrospective nature.
Conclusion: HO-1 expression was up-regulated by smoking and it was associated with malignant behavior of bladder cancer. Cancer cell proliferation, lymphangiogenesis, and

expressions of VEGF-D, COX-2, and MMP-2 played important roles in these HO-1-related effects, and they were regulated by complex mechanisms that depended on smoking intensity. Smoking status is important to discuss observation and treatment strategies used HO-1 in patients with bladder cancer.

UP.063

Synergistic Antitumor Effect of SAHA and Cisplatin in Cisplatin Resistant Bladder Cancer Cell Line

Lee Y, Jo J, Lee H, Kim K, Oh J, Lee S, Jeong S, Hong S, Byun S, Lee E, Lee S
Seoul National University Bundang Hospital, Seongnam-si, South Korea

Introduction and Objectives: Cisplatin-based chemotherapy remains first-line treatment for advanced bladder cancer. No standard chemotherapeutic agent has been established for patients with cisplatin resistant bladder cancer. We investigated the synergistic antitumor effect of suberoylanilide hydroxamic acid (SAHA) and cisplatin in cisplatin resistant bladder cancer cells (T24R2).

Materials and Methods: The cisplatin resistant human bladder cancer cell line (T24R2) was treated with cisplatin and/or SAHA. Tumor cell proliferation was assessed by cell counting kit-8 assay and clonogenic assay. Synergism was determined by combination index. Changes in cell cycle were determined by flow cytometry. Expression of caspase-3, 8 and 9, PARP, cytochrome c, p21, Bcl-2, Bad, p27, cyclin A, cyclin D1, and cyclin E were analyzed by Western blotting.

Results: Synergistic antitumor effect between cisplatin and SAHA was observed by cell counting kit-8 assay, clonogenic assay and confirmed with combination index less than 1.0. The underlying mechanism could be synergistic cell cycle arrest, activation of apoptotic pathway including capase-3, -8, -9 and fragmented PARP or decreased expression in anti-apoptotic Bcl-2 and increased expression in pro-apoptotic BAD.

Conclusions: SAHA may synergistically enhance the antitumor effect of cisplatin and resensitize cisplatin resistant bladder cancer cells. These findings suggest the potential use of SAHA as a combination agent to enhance the antitumor effect of cisplatin in patients with advanced bladder cancer.

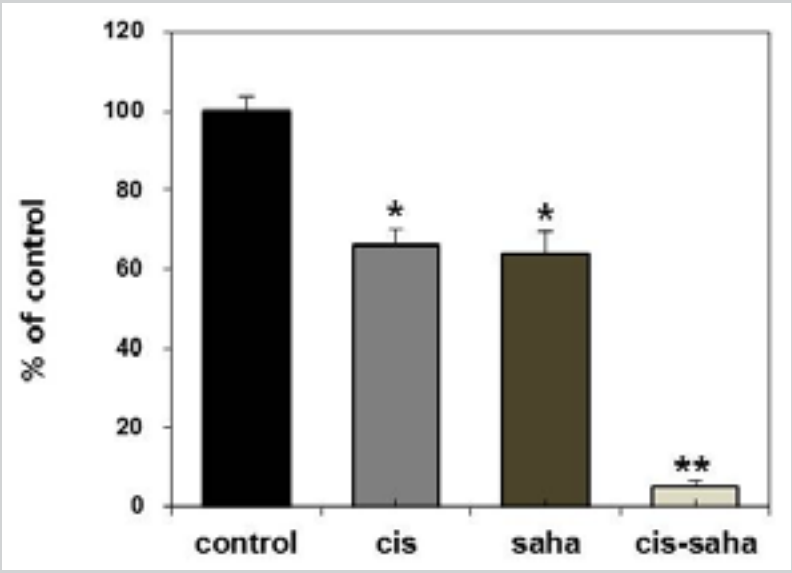
UP.064

Synergistic Antitumor Effect of Ginsenoside Rg3 and Cisplatin in Cisplatin Resistant Bladder Cancer Cell Line

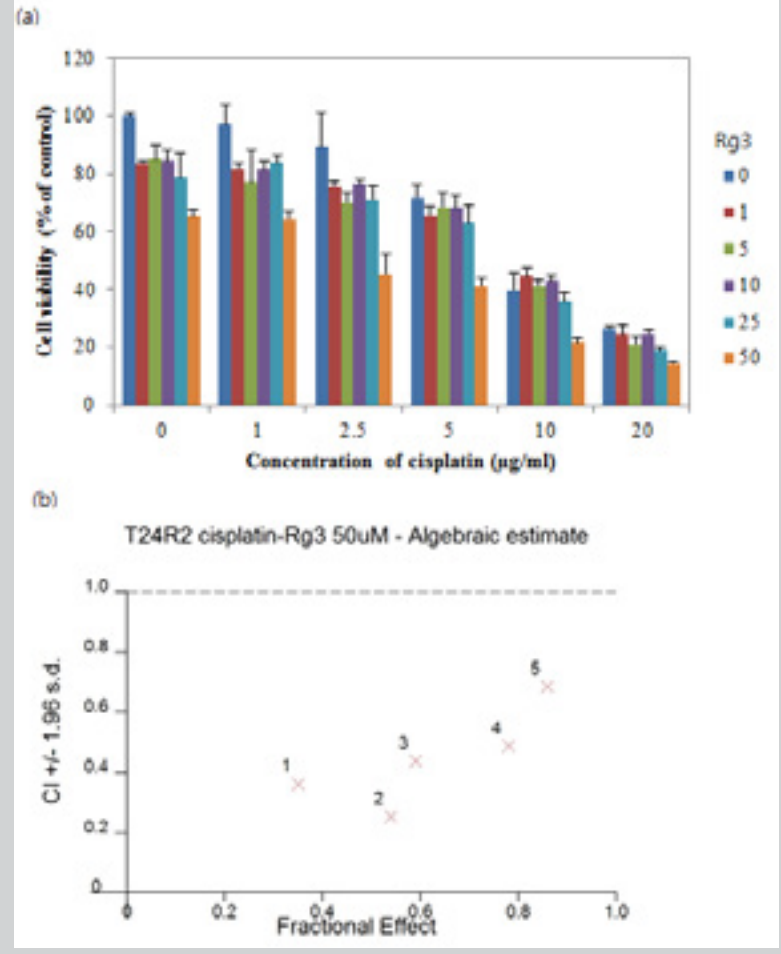
Lee Y, Jo J, Lee H, Kim K, Oh J, Lee S, Jeong S, Hong S, Byun S, Lee E, Lee S
Seoul National University Bundang Hospital, Seongnam-si, South Korea

Introduction and Objectives: Cisplatin-based chemotherapy remains first-line treatment for

UP.063, Figure 1. Clonogenic assay of SAHA and cisplatin in T24R2 cell after 48 hours (CT:control, Cis:Cisplatin)



UP.064, Figure 1. CCK-8 assay of combined treatment of ginsenoside Rg3 and cisplatin in T24R2 cell after 48 hours (a), combination index (b)



metastatic urothelial cell carcinoma. For cisplatin resistant cases, no chemotherapeutic agent has been established as a standard of treatment. We investigated the synergistic antitumor effect of cisplatin and ginsenoside Rg3 in cisplatin resistant bladder cancer cells (T24R2).

Materials and Methods: The cisplatin resistant human bladder cancer cell line T24R2 was treated with cisplatin and/or ginsenoside Rg3. Tumor cell proliferation was assessed by cell counting kit-8 assay (Figure 1) and clonogenic assay. Synergism was determined by combination index. Cell cycle distribution was determined by flow cytometry. Western blot and densitometric assay was performed for caspase-3, 8 and 9, cyclin B1, Bcl-2, Bad, p21, cytochrome C, p-Akt and Akt to evaluate the changes in cell cycle and apoptosis.

Results: Synergistic antitumor effect between cisplatin and ginsenoside Rg3 was observed by cell counting kit-8 assay, clonogenic assay and confirmed with combination index less than 1.0. The underlying mechanism could be in decreased expression in Bcl-2 and activation of intrinsic apoptotic pathway including cytochrome C and caspase-3.

Conclusions: Ginsenoside Rg3 may synergistically enhance the antitumor effect of cisplatin in cisplatin resistant bladder cancer cells and intrinsic apoptotic pathway might be the reason for it.

UP.065, Table 1. Mean percentage of hypermethylated DNA in mock and psiRNA-MeCP2 transfected HTB-5 cells using tumor suppressor genes promoter methylation array (MeAH-551)

S.no	Symbol	RefSeq	Mock Plasmid	psiRNA- hMeCP2
1	APC	NM_000038	50%	1%
2	CDH13	NM_001257	90%	82%
3	CDKN2A	NM_058195	50%	7.32%
4	DAPK1	NM_004938	50%	0.50%
5	FHIT	NM_002012	50%	0.56%
6	GSTP1	NM_000852	50%	63%
7	HOXA1	NM_005522	50%	3%
8	IGF2	NM_000612	82%	50%
9	MGMT	NM_002412	50%	4%
10	MLH1	NM_000249	50%	1.80%
11	NEUROG1	NM_006161	82%	12%
12	PDLIM4	NM_003687	90%	89%
13	PTEN	NM_000314	50%	2.40%
14	RARB	NM_000965	50%	17%
15	RASSF1	NM_007182	80%	76%
16	SOCS1	NM_003745	50%	4%
17	TIMP3	NM_000362	50%	25%
18	TP73	NM_005427	96%	96.08%
19	VHL	NM_000551	50%	0.39%
20	WIF1	NM_007191	50%	5.66%

UP.065

MeCP2 Silencing in High Grade Bladder Cancer Derived HTB-5 Cell Line Affects Promoter Methylation in Tumor Suppressor Genes

Abbas F, Bilgrami S

Aga Khan University Hospital, Karachi, Pakistan

Introduction and Objectives: DNA methylation negatively influences transcription and plays a critical role in shaping the epigenome to establish accurate temporal and spatial expression of genes. Silencing of tumor suppressor genes due to promoter hypermethylation has been well documented in different types of cancers but the role played by different methyl binding proteins remains to be elucidated. Methyl-CpG binding proteins act as translators of the DNA methylation signal. These proteins bind to DNA in a sequence specific manner and bring about chromatin condensation by recruiting repressor complexes. Currently, there are five known methyl-binding proteins in mammals namely MeCP2, MBD1, MBD2, MBD4 and kaiso. We studied the effect of MeCP2 silencing on the promoter methylation status of a panel of tumor suppressor genes, using EpiTect® Methyl qPCR Array.

Materials and Methods: The HTB-5 cell line was obtained from American Type Culture Collection (ATCC, Manassas, VA) and was maintained in Eagle's minimum essential medium. Cells were transfected with a mock plasmid and a silencing plasmid psi-RNA MeCP2. Human tumor suppressor genes promoter Methylation array (EpiTect® Methyl qPCR array-Signature 24-Gene Panel, 96-well array-Qiagen) was employed to determine any difference in the promoter Methylation status of MeCP2 silenced HTB-5 cells and control transfected HTB-5 cells.

Results: Out of the 24 tumor suppressor genes studied, twenty genes were included in the analysis excluding *BRCA1*, *CDH1*, *ESR1* and *RUNX3*. When the percentage of hypermethylated promoter was compared between the two cell types, most of the genes show higher percentage of hypermethylated promoters in the mock transfected HTB5 cells as compared to MeCP2 silenced cells (see Table 1).

Conclusion: The results of our study suggest that MeCP2 protein appears to be involved in cellular processes and its silencing affects the promoter methylation status of a distinct set of tumor suppressor genes in the HTB-5 cell line.

UP.066

CYR61/CCN1 and CTGF/CCN2 Confer Resistance to Cisplatinum Chemotherapy in Muscle Invasive Bladder Cancer

Brown M[1], Robinson R[1], Hart C[1], Ramani V[2,3], Lau M[2,4], Sangar V[2,3], **Clarke N**[2,4]

[1]Genito Urinary Cancer Research Group, University of Manchester, Manchester, UK; [2]The Christie NHS Trust, Manchester, UK; [3]South Manchester University Hospital, Manchester, UK; [4]Salford Royal NHS Trust, Salford, UK

Introduction and Objectives: CYR61/CCN1 (cysteine rich angiogenic inducer 61) and CTFG/CCN2 (connective tissue growth factor) have been shown to confer resistance to chemotherapy in cancers, including breast and ovarian cancer. Muscle invasive bladder cancer (MIBC) resistance to cisplatinum remains a significant issue both in the neo-adjuvant and palliative setting. Little is currently known about the role of CYR61 and CTGF in MIBC. This study assesses the role of these proteins in MIBC cisplatinum resistance.

Materials and Methods: The high-grade invasive J82 and T24 bladder cancer cell-lines were treated with cisplatinum (IC_{50}) during 72 hour SRB (sulforhodamine B) cell proliferation assays. The effect of siRNA knockdown of CYR61 and CTGF on cell proliferation and chemosensitivity, compared to treatment with a non-targeting (NT) siRNA control, was evaluated.

Results: Knockdown of CYR61 caused a 30% reduction in J82 cell proliferation (p=0.0003) but had no significant effect on T24 cells. CTGF knockdown caused a 51% and 86% reduction in J82 ad T24 proliferation respectively (p<0.0001). Knockdown of either CYR61 or

CTGF combined with IC_{50} cisplatinum treatment reduced cell proliferation significantly compared to either IC_{50} ciplatinum alone or CYR61/CTGF knockdown alone in both cell lines ($p<0.05$). The combined effect of IC_{50} cisplatinum and CYR61 or CTGF knockdown significantly reduced cell proliferation, measured as fold change from baseline, to 1.77 and 1.2 compared with 4.98 for NTsiRNA alone in the J82 line; and 1.40 and 1.04 compared with 15.75 for NTsiRNA alone in the T24 line respectively ($p<0.0001$).

Conclusions: Knockdown of CYR61 or CTGF increases MIBC sensitivity to cisplatinum significantly and both are potential treatment targets. These findings warrant further investigation as chemotherapeutic options are very limited in this disease.

UP.067

CYR61/CCN1 Mediates HGF Linked Migration/Invasion and Promotes Phenotypic Aggression and Poor Prognosis in MIBC

Brown M[1], Robinson R[1,2], Hart C[1], Ramani V[3,4], Lau M[2,3], Sangar V[3,4], **Clarke N**[2,3]

[1]Genito Urinary Cancer Research Group, University of Manchester, Manchester, UK; [2]Salford Royal NHS Trust, Salford, UK; [3]The Christie NHS Trust, Manchester, UK; [4]South Manchester University Hospital, Manchester, UK

Introduction and Objectives: CYR61/CCN1 (Cysteine rich angiogenic inducer 61) has been implicated in aggressive cancer cell behaviour in various tumours. It plays a role in cell proliferation, adhesion, migration and it mediates hepatocyte growth factor (HGF) dependent migration. Little is known about its role in muscle invasive bladder cancer (MIBC). We used novel marker approaches, correlating bladder cancer cell line models with a large scale outcome linked MIBC tissue microarray (TMA), to evaluate the role of CYR61 in MIBC.

Materials and Methods: siRNA knockdown of CYR61 in the, high-grade invasive, J82 and T24 bladder cancer cell-lines was performed during proliferation, migration and Boyden chamber Matrigel® invasion assays, in response to stimulation with both HGF and foetal calf serum (FCS). A TMA was constructed using cystectomy specimens of 567 MIBC patients with comprehensively documented outcomes and >5 years follow-up. Cellular expression of CYR61 and cMET (HGF receptor) was then quantified by IHC staining and automated image-analysis using Definiens® software.

Results: J82 and T24 cells both overexpressed CYR61. CYR61 knockdown significantly reduced HGF induced migration in both T24 ($p<0.05$) and J82 ($p<0.001$) cells. During Boyden chamber Matrigel® invasion assays CYR61 knockdown produced a 5 and 4.6 fold reduction in invasion ($p<0.0001$) of J82 cells towards HGF and FCS respectively and 7.6 ($p<0.0001$) and 1.9 ($p<0.01$) fold reduction in the T24 line. CYR61 knockdown also led to loss of expression of the mesenchymal marker vimentin in the J82 line. Increased expression of CYR61 significantly reduced cancer specific survival following cystectomy (median survival 33 vs. 72 months ($p=0.0264$), high and low expression respectively). Increased expression of CYR61 was shown to be an independent predictor of overall survival HR 1.393, 95%CI 1.063-1.826, $p=0.0160$ in a multivariate Cox regression analysis.

Conclusions: CYR61 is an important component of the HGF-cMET axis in MIBC. CYR61, independent of HGF-cMET, promotes a more aggressive MIBC phenotype and knockdown reverses features of EMT. Clinical cohort correlation confirms CYR61 to be a promising treatment target in MIBC either alone or in combination with cMET targeting therapy.

UP.068

The Effect of Morphine and Its Inhibitors on RT112 Bladder Cancer Cell Growth

Giatsidou I[1], Cooper A[1], Lwaleed B[2], Birch B[3]

[1]University of Portsmouth, Portsmouth, UK; [2]University of Southampton, Southampton, UK; [3]University Hospital Southsmpton NHS Foundation Trust, Southampton, UK

Introduction and Objectives: Clinical studies suggest opioid use as postoperative analgesia affects rates of metastasis in breast and prostate cancer, with additional evidence from xenograft models. Morphine has been shown to induce apoptosis in human tumour cell lines at mM concentrations. Antagonists are used clinically to minimise side effects and it is suggested that they might be complementary to chemotherapy. Dietary casomorphines and endogenous opioids are complicating factors *in vivo.* Cell signalling by morphine, through micro-opioid receptors, may affect angiogenesis, and both migration and proliferation of cancer cells. Little published work relates to bladder cancer. The objective here was to investigate any regulatory effect that morphine has on urothelial cells *in vitro* and whether the receptor blockers naloxone and naltrexone modify any such effect.

Materials and Methods: Residual viable biomass of adherent RT112 transitional cell carcinoma cells was measured in a 96-well plate tetrazolium-based assay, following exposure over three days to serial dilutions of morphine (as sulphate), naloxone and naltrexone (as hydrochlorides), including two-way titrations of drug and blocker to form a matrix of reagent proportions.

Results: Morphine elicited a non-monotonic growth response, starting by reducing residual biomass at very high concentration (~1mM), reaching a peak of significant growth stimulation ($P<0.001$ using pairwise tests or analysis of variance) at ~25μM, thereafter dropping to control (untreated) levels by 1nM. Naltrexone and naloxone used alone had an insignificant effect on cell growth. Titrating morphine four hours after treatment with standard naltrexone caused stimulation of growth at high concentrations, but the effect was blocked in lower concentrations. Some reversal of stimulated growth could also be achieved when the treatment order was reversed, suggesting a competitive binding mechanism. Two-way titrations gave results where the greatest growth is seen in the corner of the plate where the ratio of morphine to blocker is highest.

Conclusion: Morphine has a stimulatory effect on the growth of RT112 cells *in vitro*, can be at least partially reversed with the receptor blockers naloxone and naltrexone. These phenomenological results invite further mechanistic studies and clinical audits in bladder as much as in breast cancer.

UP.069

Inhibition of Autophagy: A Novel Window for Overcoming Therapeutic Resistance in Carcinoma of Urinary Bladder

Ojha R**, Singh S**, Jha V, Bhattacharyya S, Mandal A

Post Graduate Institute of Medical Education and Research, Chandigarh, India

Introduction and Objectives: To determine the effect of autophagy modulation on resistant bladder cancer cell survival and to investigate whether autophagy modulation can potentiate the efficacy of anticancer therapeutic agents.

Materials and Methods: The study was conducted on T24 and UM-UC-3 bladder cancer cell lines. Cisplatin resistant T24 cell (RT24) line was established by intermittent exposure to cisplatin and stepwise increasing the concentration (0.1-3μg/ml) of cisplatin. The therapeutic implication of autophagy was studied by using mitomycin and gemcitabine alone or in combination with autophagy inhibitors, chloroquine. Autophagy was studied by acridine orange staining. Cell viability was measured by annexin-V/7-AAD staining. Expression of resistant markers *mdr1, abcg2*, h-RAS, c-myc and PI3K were also measured.

Results: Cells treated with mitomycin or gemcitabine showed increase in autophagosome formation as compared to untreated cells (Figure 1A). Treatment with mitomycin and gemcitabine showed only 18% and 19% cells death in T24 and 8% and 10% cell death in RT24 cells respectively. Addition of chloroquine further increased cell death significantly in both T24 and RT24 cells (Figure 1B). Inhibition of mitomycin and gemcitabine-induced autophagy increased caspase-9 and-3 activation (Figure 1C). Cell treated with specific caspase inhibitor blocked the cell death (Figure 1D). Chloroquine along with mitomycin/ gemcitabine

UP.069, Figure 1.

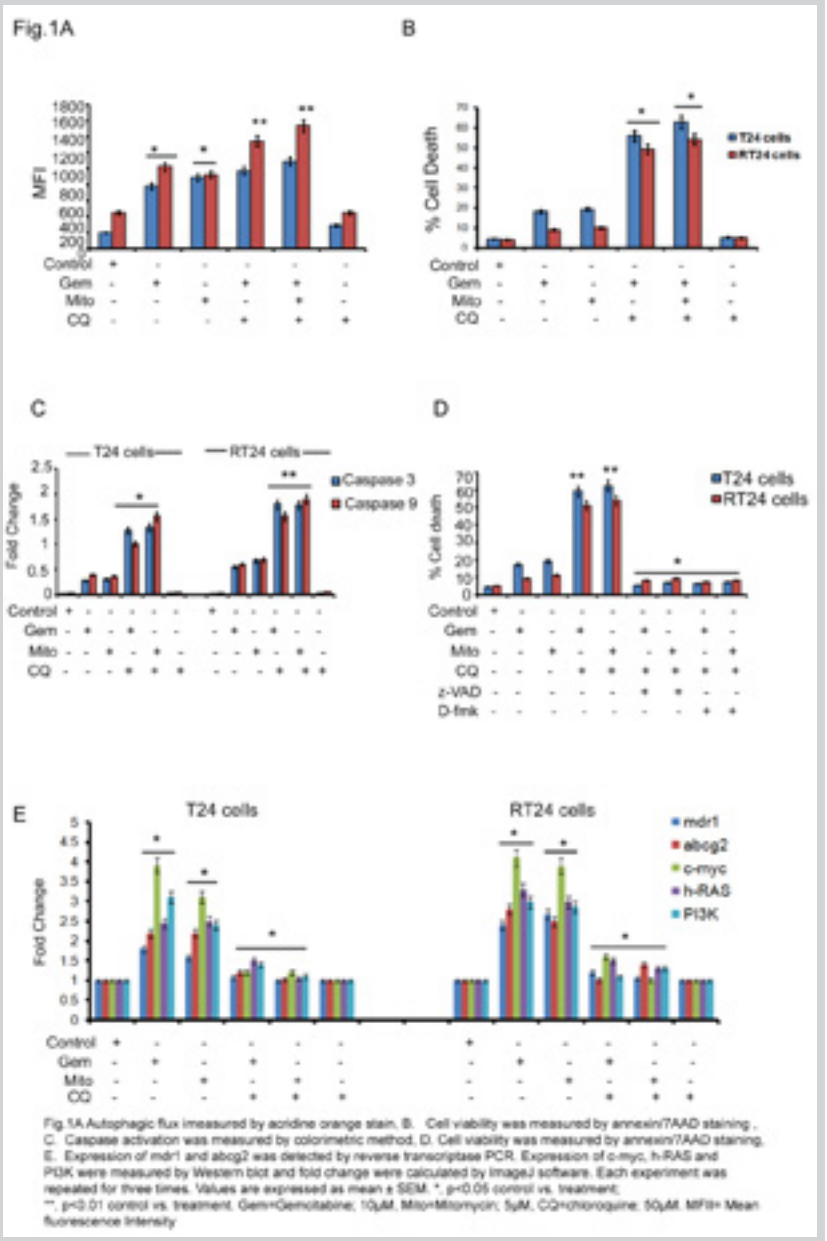


Fig.1A Autophagic flux imeasured by acridine orange stain. B. Cell viability was measured by annexin/7AAD staining . C. Caspase activation was measured by colorimetric method. D. Cell viability was measured by annexin/7AAD staining. E. Expression of mdr1 and abcg2 was detected by reverse transcriptase PCR. Expression of c-myc, h-RAS and PI3K were measured by Western blot and fold change were calculated by ImageJ software. Each experiment was repeated for three times. Values are expressed as mean ± SEM. *, p<0.05 control vs. treatment; **, p<0.01 control vs. treatment. Gem=Gemcitabine; 10μM. Mito=Mitomycin; 5μM. CQ=chloroquine; 50μM. MFI= Mean fluorescence Intensity

UP.070, Table 1.

	Mean ELISA levels in serum		
	UBC Patients	BPH Patients	Healthy Controls
Laminin (pg/ml)	2049	957.51	577.44
p-value		*0.001*	*0.001*
Nidogen (ng/ml)	12.45	7.62	6.82
p-value		*0.001*	*0.001*
Fibulin (ng/ml)	4.33	3.98	2.13
p-value		*0.15*	*0.04*

caused decreased expression of various resistant markers such as *mdr1, abcg2,* c-myc, h-RAS and PI3K in both T24 and RT24 cells (Figure 1E). Similar results were also obtained in UM-UC-3 cells.

Conclusions: Autophagy is a prosurvival mechanism which overcomes the resistance of chemotherapeutic agents in bladder cancer. Autophagy inhibition leads to caspase dependent intrinsic apoptotic cell death, and thereby, enhances cytotoxicity of chemotherapeutic agents. Therefore, autophagy inhibition may have potential clinical significance in minimizing chemotherapeutic resistance and hence tumor recurrence and relapse.

UP.070

Elevated Levels of Extracellular Matrix Proteins Laminin, Fibulin 1 and Nidogen Are Associated with Urothelial Carcinoma of Urinary Bladder

Seth A, Khan R, Anand V, Rao N, Sharma A
All India Institute of Medical Sciences, New Delhi, India

Introduction and Objectives: The role of extracellular matrix proteins in various malignancies is being actively studied. They are suspected to play significant roles in intercellular interactions, cell motility, adhesion, invasion, migration and metastases. The selected extracellular matrix proteins-Laminin, Fibulin 1 and Nidogen have been studied in other cancers but not been explored in urothelial carcinoma.

Materials and Methods: In this study, 20 urothelial bladder carcinoma patients of different grades (6 low-grade non-muscle invasive, 7 high-grade non-muscle invasive and 7 muscle invasive), 10 BPH and 10 healthy volunteers were registered to determine circulatory levels of Laminin, Fibulin 1 and Nidogen by commercially available high sensitivity sandwich ELISA kit.

Results: The circulatory levels of Laminin was found to be significantly higher ($p<0.001$) in UBC patients as compared to healthy control and BPH patients. Levels of Nidogen was also found to be significantly elevated ($p<0.001$) in patients as compared to healthy subjects and BPH patients. The increase was higher in patients with muscle invasive disease for both these proteins. Fibulin1 levels were significantly higher ($p<0.04$) in patients versus healthy subjects but it was not significant when compared to BPH patients. These results are tabulated below:

Conclusion: Elevated expression of these ECM proteins (Laminin, Fibulin 1 and Nidogen) in serum of urothelial bladder carcinoma patients may be a result of increased production, increased leakage or reduced degradation. Further studies may provide insight into the initiation, growth, invasiveness or metastases of these cancers.

UP.071

Detection of Self Renewal Genes NANOG and STAT3 Expression in Cancer Bladder Cells

Khairy Salem H[1], Ahmed Magdi El-Gohary H[2], Mahamoud Kamel S[2], Magdi Riad N[2], Gabr H[2]

[1]Dept. of Urology, Faculty of Medicine, Cairo Universty, Cairo, Egypt; [2]Dept. of Clinical and Chemical Pathology, Faculty of Medicine, Cairo Universty, Cairo, Egypt

Introduction and Objectives: To characterize bladder cancer stem cells at the molecular level, the expression of oncoproteins that have been implicated in the self-renewal of adult or embryonic stem cells, is detected. These oncoproteins include Nanog and STAT3. The aim of this study was to detect the presence of cancer stem cells of bladder cancer by detection of the two genes, Stat3 and Nanog in cultured bladder tumor biopsies.

Materials and Methods: Biopsies obtained from 15 recently diagnosed subjects with transitional cell carcinoma of the urinary bladder, tumor tissue was disrupted and cultured in serum free medium. Cancer stem cells were positively selected through serial passaging. RNA extraction and reverse transcription into cDNA was done. Nanog and STAT3 expression was detected through SYBR Green real time PCR. The genes expression levels were compared to their expression in 15 control normal bladder tissue biopsies. The levels of Nanog and STAT3 in both the cases and control groups were measured relative to the house keeping gene β-Actin, to which the values were normalized and expressed as a ratio.

Results: The mean value of Nanog gene expression was significantly higher in the patients group (2.693 ± 2.399) as compared to the control group with mean value (0.065 ± 0.05) with a highly significant statistical difference (P value = <0.001).The mean value of STAT3 gene expression was higher in the patients group (2.742 ± 2.91) as compared to the control group with mean value (0.212 ± 0.194) with high statistical significance (P value = 0.003). No statistical significant correlation was detected between the expression of Nanog and STAT3 expression and positive of history of Bilharziasis (P value = 0.744 and 0.395 respectively), presence of regional lymph node metastasis (P value = 0.363and 0.242 respectively), stage of the tumor (P value = 0.2 and = 0.267 respectively), the grade of the tumor (P value = 0.242 and = 0.407 respectively).

Conclusion: Nanog and STAT3 genes expression in bladder cancer cultured cells support the conclusion that bladder cancer stem cells are implicated in bladder cancer.

UP.072

The Advantages of Combined NBI Cystoscop: Bipolar Plasma Vaporization Management in Large NMIBT Cases – A Retrospective Evaluation after a 2-Year Follow-Up

Geavlete B, Multescu R, Stanescu F, Moldoveanu C, Jecu M, Ene C, Adou L, Bulai C**, Geavlete P**

"Saint John" Emergency Clinical Hospital, Bucharest, Romania

Introduction and Objectives: A retrospective study was performed aiming to evaluate the efficacy of a multi-modal approach consisting in narrow band imaging (NBI) cystoscopy and bipolar plasma vaporization (BPV) when compared to the standard protocol represented by white light cystoscopy (WLC) and transurethral resection of bladder tumors (TURBT).

Materials and Methods: A total of 260 patients with apparently at least one bladder tumor over 3 cm were included in the trial. In the first group, 130 patients underwent conventional and NBI cystoscopy followed by BPV, while in a similar number of cases of the second arm, classical WLC and TURBT were applied. In all non-muscle invasive bladder tumors (NMIBT) standard monopolar Re-TUR was performed at 4-6 weeks after the initial intervention, followed by one year BCG immunotherapy. The follow-up protocol included abdominal ultrasound, urinary cytology and WLC, performed every 3 months for a period of 2 years.

Results: The obturator nerve stimulation, bladder wall perforation, mean hemoglobin level drop, postoperative bleeding, catheterization period and hospital stay were significantly reduced for the plasma vaporization technique by comparison to conventional resection. Concerning tumoral detection, the present data confirmed the NBI superiority when compared to standard WLC regardless of tumor stage. During standard Re-TUR the overall (6.3% versus 17.4%) and primary site (3.6% versus 12.8%) residual tumors' rates were significantly lower for the NBI-BPV group. The 1 (7.2% versus 18.3%) and 2 (11.5% versus 25.8%) year recurrence rates were substantially lower for the combined approach.

Conclusions: NBI cystoscopy significantly improved diagnostic accuracy, while bipolar technology showed a higher surgical efficiency, lower morbidity and faster postoperative recovery. The combined technique NBI-BPV offered a reduced rate of residual tumors at Re-TUR, as well as a substantially lower recurrence rate at 1 and 2 years.

UP.073

NBI Cystoscopy in Routine Urological Practice: From Better Vision to Improved Therapeutic Management

Geavlete B, Multescu R, Jecu M, Stanescu F, Moldoveanu C, Adou L, Ene C, Bulai C**, Geavlete P**

"Saint John" Emergency Clinical Hospital, Bucharest, Romania

Introduction and Objectives: A single centre, retrospective trial was performed trying to assess the impact of NBI cystoscopy in cases of non-muscle invasive bladder tumors (NMIBT) by comparison to the standard approach. Our goal was to determine the superiority of the new method in terms of detection rates and subsequent postoperative treatment changes.

Materials and Methods: A total of 320 NMIBT suspected consecutive cases were enrolled in the study. The inclusion criteria were represented by hematuria, positive urinary cytology and/or ultrasound suspicion of bladder tumors. All patients underwent WLC and NBI cystoscopy. Standard transurethral resection of bladder tumors (TURBT) was performed for all lesions visible in WL and NBI guided resection for solely NBI observed tumors.

Results: The overall NMIBT and CIS patients' detection rates were significantly improved for the NBI evaluation (94.9% versus 88.1% and 95.7% versus 65.2%). Also, on a lesions' related basis, NBI cystoscopy emphasized a significantly superior diagnostic accuracy concerning the CIS, pTa and overall NMIBT formations (95.2% versus 60.3%, 92.8% versus 83.9% and 94.1% versus 82%). Additional tumors were diagnosed by NBI in a significantly higher proportion of CIS, pTa, pT1 and NMIBT patients (56.6% versus 8.7%, 28% versus 10.3%, 30.3% versus 10.6% and 31.6% versus 9.4%). As a result of these supplementary findings, the postoperative treatment was significantly improved in a substantial proportion of cases (15.4% versus 5.1%).

Conclusions: NBI cystoscopy represents a valuable diagnostic alternative in NMIBT patients, with significant improvement of tumor visual accuracy as well as detection rates. This approach provided a substantial amelioration to the risk category stratification and subsequent bladder cancer therapeutic management.

UP.074

Incidental CT Bladder Wall Abnormalities: Harbinger or Herring?

Byler T, Nsouli I

SUNY Upstate Medical University, Syracuse, USA

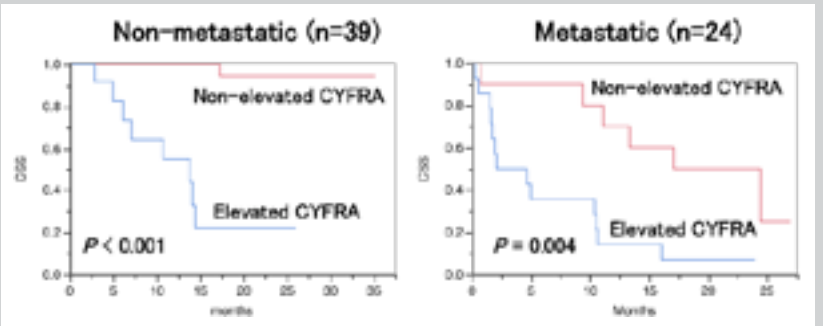
Introduction and Objectives: Bladder wall abnormalities incidentally identified on radiographic study frequently lead to urologic evaluation of patients to exclude malignancy. A review of recent literature has demonstrated a lack of evidence guiding management of these

patients. We sought to review our experience in evaluating patients with an incidental radiographic finding of bladder wall abnormality to determine the probability of a positive work up. If risk of malignancy is not conferred by this finding, cystoscopy could be eliminated and save morbidity as well as health care expense.
Materials and Methods: After IRB approval, all screening cystoscopy performed at our medical center between June 2009 and June 2013 was identified. We identified all patients for which cystoscopy was performed for a radiographic bladder wall abnormality, defined as diffuse bladder wall thickening, focal bladder wall thickening, or intraluminal bladder mass. Patients with a history of bladder cancer, pelvic radiation, or hematuria were excluded.
Results: A total of 2483 cystoscopies were performed in 1418 unique patients. Forty (2%) were performed for radiographic bladder wall abnormalities in the absence of other indications for cystoscopy. Six of the 40 patients were excluded due to reported gross hematuria or micro hematuria. Eleven patients (32.4%) were evaluated for diffuse bladder wall thickening, of which two had suspicious findings on cystoscopy and had biopsy proven high grade urothelial carcinoma (one CIS, one muscle invasive). Fifteen patients (44.1%) were evaluated for focal bladder wall thickening; none had abnormal findings by cystoscopy. Of the eight patients (23.5%) evaluated for intraluminal bladder mass, four had mass identified on cystoscopy and were diagnosed with urothelial carcinoma (one high grade non-invasive, three low grade). Overall six of 34 patients (17.6%) were diagnosed with malignancy. Urine cytology results were available in five of these six patients and none were suspicious for malignancy. Demographic data including smoking behavior did not predict those with ultimate cancer diagnosis.
Conclusion: While generally non-specific for malignancy, incidental radiographic finding of bladder wall abnormality lead to diagnosis of urothelial carcinoma in greater than 15% of our patients. Three of these tumors were high grade tumors. This finding argues for routine cystoscopic evaluation of patients with radiographic bladder wall abnormality.

UP.075
Prognostic Value of Serum CYFRA 21-1 in Patients with T1G3 or Muscle Invasive Bladder Cancer
Yano A, Sugiyama H, Cho E, Sakaguchi K, Ishii N, Okada Y, Nagamatsu H, Morozumi M, Kawakami S, Yamada T
Saitama Medical Center, Saitama Medical University, Kawagoe, Japan

Introduction and Objectives: No serum prognosticator has been established in patients with potentially lethal bladder cancer. The aim of this study is to evaluate the prognostic value of serum CYFRA 21-1 (CYFRA) in these patients.
Materials and Methods: Serum levels of CYFRA and C-reactive protein (CRP) were measured in 63 patients with T1G3 or muscle invasive bladder cancer between February 2011 and May 2013. Cut-off values of CYFRA and CRP were determined by receiver operating characteristic analyses. Prognostic values of age, stage, CYFRA and CRP were evaluated using multivariate analysis with a Cox proportional hazards model.
Results: The median (range) values of CYFRA, and CRP were 2.9 (1.1-251.5) ng/mL and 0.2 (0-19.4) mg/dL, respectively. The median (range) age and follow-up period was 71 (38-92) years and 13.9 (1.0-35.1) months. Prognostic values of age (≤70 vs. ≥71), stage (non-metastatic vs. metastatic), CYFRA (cut-off 3.6 ng/mL) and CRP (cut-off 1.8 mg/dL) were evaluated dichotomously. Multivariate analysis revealed that CYFRA ($P < 0.001$) and stage ($P = 0.010$) are significant and independent prognosticators. In 39 patients with non-metastatic disease, those with elevated CYFRA had 32.2-fold higher risk of cancer specific mortality than those with non-elevated CYFRA. In 24 patients with metastatic disease, those with elevated CYFRA had 4.32-fold higher risk of cancer specific mortality than those with non-elevated CYFRA.
Conclusion: The current results indicate that serum CYFRA level can be a prognosticator for patients with potentially lethal bladder cancer. Further prospective analyses will be needed to confirm our results.

UP.075, Figure 1.



UP.076
Urovysion Is a Valuable Tool for Prediction of Recurrence in Non-Muscle Invasive Urothelial Bladder Cancer
Roshdy M, Abdelsalam A, Nour H, I.Kamel A
Theodor Bilharz Research Institue, Giza, Egypt

Introduction and Objectives: Urovysion is a multitarget multicolor fluorescent in-situ hybridization (FISH) probe set combining four probes in a single probe set that detects aneuploidy of chromosomes 3, 7, and 17, and loss of the 9p21 locus in exfoliated cells in urine. Our study investigated the role of urovysion in predicting recurrence in patients with free cystoscopy and –ve cytology and detecting new cases of urothelial carcinoma of the bladder in patients complaining of haematuria with high risk of malignancy.
Materials and Methods: Our study conducted on 46 patients, Group (A) 30 patients had history of superficial urothelial carcinoma of the bladder and 16 patients complaining of gross haematuria subdivided after cystoscopy into Group (B) 8 patients with 1ry urothelial carcinoma and Group (c) 8 patients with cystitis. All patients were subjected to voided urine cytology and Urovysion before cystoscopy ± biopsy. Follow-up for Group (A), and one patient in Group (c) with +ve urovysion was done for 18 months.
Results: The mean age of patients was 50.5 years. In Group (A) 15 patients (50%) were urovysion +ve and 15 patients (50%) were urovysion – ve, and all patients were negative for malignancy by cytology and the first cystoscopy was free. Recurrence were diagnosed in 11 patients (36.6%) with median time to recurrence was 4 months. Anticipatory +ve urovysion preceded recurrence in 81.8%, and the NPV was 86.6%. There was a statistically significant (P<0.01) difference in urovysion results between low and high grade tumors. For Group (B), the sensitivity of urovysion was equal to cytology (75%). For Group (C) only one patient was +ve FISH and developed low grade Ta TCC after 12 months. Bilharziasis had no influence on the predictive value of urovysion.
Conclusion: Urovysion helps to predict recurrence of urothelial carcinoma of the bladder and may change the surveillance protocols especially for patients with history of low grade tumors with –ve urovysion to be with expanded intervals.

UP.077
Urine Cytology Is Unnecessary as a Routine Work Up in Detection of Recurrence in Patients with Non-Muscle Invasive Bladder Cancer
Moon K, Ji Y, Ko Y, Jung H, Song P
Yeungnam University College of Medicine, Daegu, South Korea

Introduction and Objectives: Despite of its low sensitivity, urine cytology has routinely been recommended as a diagnostic modality along with urinalysis and CT urography in contemporary guidelines for identification of the recurrence of non-muscle invasive bladder cancer (NMIBC). The purpose of this study is to determine whether urine cytology can effectively contribute to detection rates of tumor recurrence.
Materials and Methods: A total of 393 patients underwent transurethral resection of bladder tumor (TURBT) for NMIBC from January 2010 to June 2013. Among them, in 62 cases (15.8%), abnormal bladder lesions were identified by routine cystoscopy within 6 months. All of them completed follow-up cystoscopy, urine cytology, UA and CT every 3 months after initial TURBT. For suspicious lesions, all patients underwent re-TURBT or bladder biopsy. Patients were divided into 7 groups, thus the detection rate for tumor recurrence was assessed based on final histologic finding; Group I detected by urine cytology, Group II by CT, Group III by UA, Group IV by urine cytology plus CT, Group V by urine cytology plus UA, Group VI by CT plus UA, and Group VII by combination of all modalities, including urine cytology, CT, and UA.
Results: Final histologic outcome confirmed that 49 patients had tumor recurrence and the other 13 patients had inflammation. The overall tumor recurrence rate was 12.5% and mean interval from the initial TURBT was 4.8±1.5 months. The mean size of histologically proven tumor masses was 1.3±0.9 cm. Sensitivity from Group II (55.1%) and Group III (57.1%) was significantly higher than that from urine cytology (24.5%, p=0.001 and <0.001, by McNemar's test). Sensitivity from Group VI (75.5%) was also higher than that from Group V (59.2%, p=0.021). However, the sensitivity of Group VII (77.6%) was statistically similar to that of Group VI, a group without urine cytology (75.5%, p=0.870).
Conclusion: The outcomes observed in this study demonstrated that urine cytology does not improve the detection rate of tumor recurrence within 6 month after initial TURBT. We suggest that urine cytology is an unnecessary evaluation modality for routine follow-up of bladder cancer.

UP.078
Updated Analysis of Circulating Tumor Cells (CTCs) in Patients with Urothelial Cancer (UC) Undergoing Systemic Treatment: Implications across the Clinical Stages
Necchi A, Fina E, Giannatempo P, Colecchia M, Iacona C, Farè E, Raggi D, Nicolai N, Salvioni R, Gianni A, Mariani L, Daidone M, Cappelletti V
Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

Introduction and Objectives: CTCs from patients (pts) at different clinical stages were analyzed by a never explored experimental approach based on a combination of two techniques. Provision of this information may contribute to optimize tailored therapies.
Materials and Methods: Three cohorts were analyzed, partly enrolled in clinical trials: pts with muscle-invasive bladder cancer receiving neo-adjuvant (NA) sorafenib + chemotherapy (CT) (NCT01222676), and metastatic (M1) pts receiving first-line MVAC, and second-line (M2) anti-TGFβ receptor ALK1 PF-03446962 in a phase 2 trial (NCT01620970). Five ml of whole blood were filtered by ScreenCell® Cyto devices and CTC status was assessed with centralized scoring by referral pathologists. Additional 5 ml of whole blood were processed by immunomagnetic beads (AdnaTestSelect® kit) and the expression level of a panel of markers (including *EPCAM* and *MUC1*) was studied using RT-multiplex PCR. The objective was the association with clinical endpoints (pathologic/clinical response, disease relapse).
Results: From 07/2012 to 1/2014, 65 pts (20 NA, 31 M1, and 14 M2) were enrolled. Rates of baseline CTC+ were: 92, 75, 91%, and 31, 50, 64% with the 2 techniques, respectively.
NA setting: All pts had a stepwise reduction of CTC count/5 ml blood by ScreenCell® (median baseline of 14 [0-40] to 0 [0-9] – end of treatment). Increase in circulating EPCAM±MUC1 levels by CTC was seen in accordance with the 3 disease progressions (PD).
M1 setting: While there was a discrepancy between CTC signals and partial/complete response (PR/CR), a trend towards an increase in CTC levels was observed in 7/9 evaluable relapsers. Pts who relapsed had a median of 43 CTC/5 ml (IQR: 17-51.5) at the end of CT, while all the others had levels <13. EPCAM profile was not concordant in all cases (median 1.01 vs. 1 ng/ul). Interestingly, an increase in both CTC signals anticipated relapse in 5/9 evaluable responders (CR+PR).
M2 setting: an increase in CTC was documented by both methods in each case, in accordance with PD.
Conclusion: This combined technique was endowed with promising utility to anticipate the detection of clinical relapse. Refining molecular characterization might help designing informed clinical trials.

UP.079
The New Quantitative Point of Care Assay UBC-Rapid: Evaluation in Bladder Cancer Diagnosis and Relevant Clinical Interferences
Lüdecke G, Hauptmann A, Pilatz A, Bschleipfer T, Weidner W
Dept. of Urology, University Clinic, Giessen, Germany

Introduction and Objectives: In bladder cancer, urine soluble markers ensure primary diagnosis, follow-up control and screening investigations. The next step is the development of a quantitative POC-test. UBC- rapid® is transferred to the measurement system Omega reader. The data was checked in relation to clinical interferences and the presence of bladder cancer.
Materials and Methods: Urine probes were collected from healthy volunteers, patients with urinary tract infections, stones in kidney, ureter or bladder, catheter supported patients, ileum-conduit urine, endoscopically collected urine and from symptomatic bladder cancer patients in case of initial diagnosis and follow-up. The freshly collected urine was transferred into a stabilizing solution and than measured with an objective reader to quantify the amount of cytokeratin 8 and 18. The level of normal is up to 10µg/l, 10-19µg/l are uncertain and above 19µg/l are suspect for bladder cancer.
Results: Over the period of one year, we collected 178 probes: 23 controls, 68 TCC patients, 22 stone patients, 25 UTI, 15 non-TCC tumors, 15 catheter patients and 10 ileum-conduit patients. In controls the mean value was 7.46µg/l, only two cases were elevated, in TCC the mean was 68.74µg/l and showed a sensitivity of 72%. With the cut-off value of 19µg/l ileum-conduit urine was positive in 100%, stone patients were positive in 82%, catheter patients were positive in 81%, UTI were positive in 63%. Specificity in respect of exclusion criteria was 92%.
Conclusions: The new quantitative proteomic UBC-rapid test is powerful in primary diagnosis and follow-up. For daily use distinct exclusion parameters must be mentioned to prevent false positive results and to ensure a specificity of more than 90%. In case of bladder cancer the sensitivity of 72% is comparable to other test-systems. The biological background for this urine soluble tumor marker is equal to all proteomic markers based on bladder cancer cell lysis. Exclusion criteria for UBC-rapid should be recognized to ensure sophisticated diagnostics and the new quantification technique prevents a subjective color interpretation in POC-test cassettes.

UP.080
Irritative LUTS as a Sign of Cancer: Is Flexible Cystoscopy Indicated?
Burge F[1], Nkwam N[2], Maliki M[3], Wasden A[4], Parkinson R[4]
[1]Kettering General Hospital, Kettering, UK; [2]United Lincolnshire Hospitals NHS Trust, Lincoln, UK; [3]Leicester General Hospital, Leicester, UK; [4]Nottingham University Hospitals NHS Trust, Nottingham, UK

Introduction and Objectives: The 'Blood in Pee' campaign was launched by Public Health England in the UK in October 2013. The aim was to increase the publics' awareness of the

symptoms and signs of kidney and bladder cancer. The focus was on visible haematuria but the campaign also highlighted irritative lower urinary tract symptoms (LUTS) as possible symptoms of bladder cancer. Although the National Institute for Health and Care Excellence (NICE) guidelines include 'profound LUTS' and American Urological Association (AUA) guidelines include 'irritative symptoms in the absence of infection' as indications for flexible cystoscopy, to date, studies have not demonstrated a clear, consistent relationship between these symptoms and bladder cancer.

Materials and Methods: We performed a multicenter, prospective observational study of patients with LUTS presenting for flexible cystoscopy over a two-month period. Presence of blood on urinalysis and cystoscopic findings were recorded.

Results: Ninety flexible cystoscopies were performed for LUTS in 69 males and 21 females. The median age was 68 years (16-94). Bladder tumours were found in 3 patients. Other significant pathology was found in 12 patients - 1 bladder stone, 8 strictures, 2 inflammations and 1 colovesical fistula. Although 16 patients had haematuria on urinalysis only one patient had significant pathology (stricture). None of the patients diagnosed with bladder cancer had haematuria.

Conclusion: The incidence of bladder TCC in patients having a cystoscopy for LUTS is 3% in our study. Haematuria does not appear to be predictive of finding either benign or malignant pathology. We would suggest that in the presence of persistent or profound LUTS a flexible cystoscopy is an appropriate investigation and that the absence of haematuria on urinalysis is not reassuring and does not obviate the need for further investigation with flexible cystoscopy.

UP.081

'Blood in Pee': Are the British Public Any Clearer?

Sahu M, Rudd I, King J, Katmawi-Sabbagh S, Issa R, Perry M, Ayres B
St George's Hospital, London, UK

Introduction and Objectives: On 15 October 2013, a national campaign to raise awareness of the symptoms of bladder and kidney cancers was launched in the UK. It ran until 20 November 2013 and included TV, press, radio advertising and events. The aim was to raise awareness of blood in urine as a symptom of bladder and kidney cancers and to encourage people who have symptoms to go to their doctor straight away. We analyzed whether this national campaign resulted in increased patient awareness, increased haematuria referrals or cancer diagnosis.

Materials and Methods: Cystoscopy and imaging results in patients referred to the one-stop haematuria clinic between July 2013 and January 2014 were analyzed. Patients were divided into 2 groups - Group A (pre-campaign) and Group B (post campaign). Patient characteristics, cystoscopy and imaging findings were recorded. Patients in Group B with visible haematuria were asked if they had heard of the campaign and if so by which method (TV, radio, newspaper, posters).

Results: The total number of patients referred during the study period was 108 (Group A) and 127 (Group B) respectively. In Group A, 72 patients (male 33; female 19) had visible haematuria and 36 (male 18; female 18) had non-visible haematuria. In Group B, 92 patients (male 74; female 18) had visible haematuria and 35 (male 18, female 17) had non-visible haematuria. Pathology was found in 21/108 (19%) patients in Group A and 27/127 (21%) in Group B. Cancers were found in 10 patients in Group A and 15 patients in Group B. Sixty six percent of patients had not heard of the national campaign. The TV advert was the most cited medium.

Conclusion: Patient awareness of this national campaign was poor locally. However, there was an increase in haematuria referrals during the study period with a significant increase in cancer diagnosis.

UP.082

Micro-RNA Expressions in Cases with High Grade Non-Muscle-Invasive Bladder Cancer Which Don't Relapse following Intravesical Immunotherapy

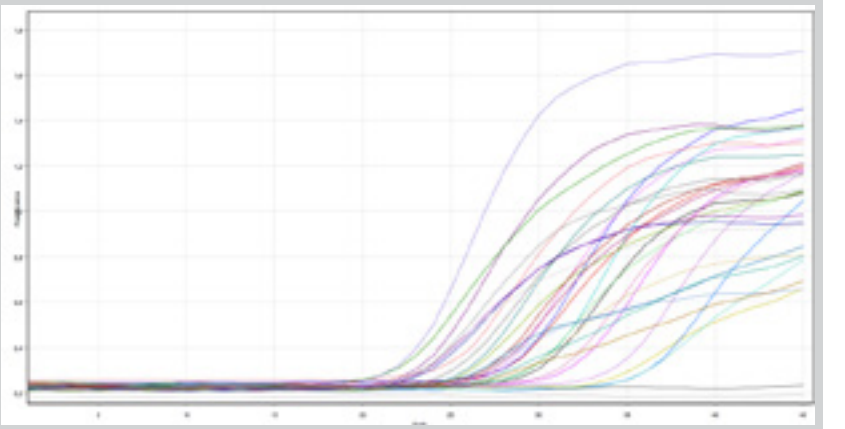
Dursun F[1], Karademir K[2], Berber U[2], Ates F[2], Malkoc E[2], Soydan H[2]
[1]Gumussuyu Military Hospital, Istanbul, Turkey; [2]GATA Haydarpasa Teaching Hospital, Istanbul, Turkey

Introduction and Objectives: Intravesical BCG therapy that follows transurethral resection (TUR) in T1 high grade tumors is the preferred adjuvant treatment. Yet indicators to predict the patients who will benefit the BCG treatment are not clear. Nowadays, studies about the roles of Micro-RNA (miRNA) on urothelial carcinoma pathogenesis are in progress and contributions of the data obtained to

UP.082, Table 1. List of the Micro RNAs Evaluated in the Study

Micro - RNA	miRBase Accession	Micro- RNA	miRBase Accession
miR-1	MIMAT0000416	miR-133a	MIMAT0000427
miR-9	MIMAT0000441	miR-133b	MIMAT0000770
miR-15a	MIMAT0000068	miR-135b	MIMAT0000758
miR-21	MIMAT0000076	miR-143	MIMAT0000435
miR-34a	MIMAT0000255	miR-145	MIMAT0000437
miR-34c	MIMAT0000686	miR-182	MIMAT0000259
miR-99a	MIMAT0000097	miR-200a	MIMAT0000682
miR-100	MIMAT0000098	miR-200c	MIMAT0000617
miR-125b	MIMAT0000423	miR-204	MIMAT0000265
miR-127	MIMAT0004604	miR-205	MIMAT0000266
miR-129	MIMAT0000242	miR-211	MIMAT0000268
miR-130b	MIMAT0000691	miR-518c	MIMAT0002848

UP.082, Figure 1. RT-PCR Curves Generated for Micro-RNAs for a Sample Tissue



the treatment process are being evaluated. In our study, we evaluated that miRNA expression profiles in T1 high grade tumors can predict the patients who may benefit BCG treatment.
Materials and Methods: Fifteen patients who had intravesical BCG treatment due to pT1 high grade urothelial carcinoma, and have no relapse in a mean follow-up period of 55 months are evaluated. Twenty four micro-RNA, which have role in tumor progress steps on tumor tissues and normal urothelium tissue, are compared in terms of expression profiles. miRNAs are purified from formalin-fixed, paraffin-embedded tissue sections. After cDNA synthesis with a series of reactions, miRNA expression levels are detected with real time reverse transcriptase reactions (RT-PCR). Relative quantification technique is used for detecting the miRNA expression levels. For relative quantification of miRNAs, normalization to proper reference genes is mandatory and we used small RNA RNU6-2 for normalization in this study.
Results: In urothelial carcinoma samples, mir-21 (1.27 fold ↑), mir-135b (3.22 fold ↑), mir-145 (3.24 fold ↑), mir-182 (3.79 fold ↑), mir-200a (2.22 fold ↑) and mir-205 (7.56 fold ↑) expressions were increased. Mir-99a (6.56 fold ↓), mir-100 (5.45 fold ↓), mir-129 (4.16 fold ↓), mir-133a (6.1 fold ↓), mir-143 (13.9 fold ↓) expressions were decreased. In most of the patients, while in particular mir-100, mir-133a, mir-133b, mir-143, mir-204 and mir-211 expressions are decreasing, mir-205 expression is observed increasing.
Conclusion: Due to the fact that microRNAs in urothelial carcinoma are expressed differently compared to the ones in normal urothelium, microRNAs might have important roles in urothelial carcinoma pathogenesis. In predicting patients who may benefit BCG treatment, mir-100, mir-133a, mir-133b, mir-143, mir-204, mir-205, mir-211 can be used as indicators. In order to reveal explicit roles of microRNAs in the path of urothelial carcinoma and to intergrate them in the treatment process, detailed functional studies that include more cases are needed.

UP.083

Routine Urine Cytology Has Little Utility during the Follow-Up of Patients with Bladder Cancer

Ferreira C, Reis F, Correia T, Cardoso A, Cerqueira M, Almeida M, Prisco R
Hospital Pedro Hispano, Matosinhos, Portugal

Introduction and Objectives: Urine cytology has long been advocated to be an adjuvant tool of follow-up to prevent recurrence or progression of bladder tumours. We aimed to determine the impact of urine cytologies on urologists´ attitude concerning follow-up schedule for cystoscopy and imaging.
Materials and Methods: During 2012, in our Department, a total of 295 follow-up cystoscopies were performed to patients with a history of bladder cancer. The same number of cytologic (voided) urine specimens was collected just before each endoscopic exam. Urine cytology results were classified as malignant/suspicious or benign. We compared cystoscopic with cytologic findings and its correlation with histology in case of suspicion of recurrence. The utility of urine cytology outcomes was also evaluated considering changes in the follow-up schedule.

UP.083, Table 1. Cystoscopic and Cytologic Findings and Histological Confirmation

	Benign cytology	Malignant or suspicious cytology	Histologic Recurrence
Benign Cystoscopy, n (%)	235 (95%)	12 (5%)	0*
Suspicious Cystoscopy, n (%)	40 (83.3%)	8 (20%)	28 (58%)
Total	275 (93%)	20 (7%)	295

Results: Cystoscopic and cytologic findings are presented on Table 1. All patients with a suspicious cystoscopy performed a transurethral resection of bladder (TURB). Twelve patients with a suspicious cytology but with a benign cystoscopy had subsequent negative urinary tests and any suspicious endoscopic or histologic or tomographic recurrence was detected. Of these, just 5 patients (42%) were revaluated by repeated cytology, cystoscopy and/or upper urinary tract imaging in less than 3 months. One patient performed a randomized TURB, which was negative. The urine cytology outcomes did not interfere with the follow-up schedule of the other 6 patients and, their subsequent cystoscopies and cytologies were negative.
Conclusion: Urine cytology seems to add little to the follow-up outcomes and urologists' attitude when cystoscopy is performed regularly in patients with history of bladder cancer. On contrary, urine cytology can result in an elevated rate of false positives, especially in case of normal cystoscopies resulting in additional expensive and morbid investigations.

UP.084

Impact of Glandular Differentiation of Urothelial Carcinoma on Disease Specific Outcome in Patients Undergoing Radical Cystectomy and Urinary Diversion

Laymon M, Harraz A**, Mahmoud O**, Mosbah A, Abol-Enein H
Urology and Nephrology Center, Mansoura, Egypt

Introduction and Objectives: Urothelial carcinoma (UC) is the commonest pathological entity of patients undergoing radical cystectomy for muscle invasive bladder cancer. Glandular differentiation (UC/GD) is a pathological subtype that is commonly encountered in pathological specimens and defined as presence of true glandular spaces with mucin in them. The clinical significance of glandular differentiation on disease specific outcome is inadequately addressed in the literature. We compared the impact of glandular differentiation on disease specific survival with adenocarcinoma and UC (TCC).
Materials and Methods: A retrospective analysis of patients' charts who underwent radical cystectomy and diversion between January 2004 and September 2009 was conducted to retrieve patients with the diagnosis UC/GD and adenocarcinoma. A matched group with histological diagnosis UC was used as reference group. Patients' characteristics were compared between groups to ensure homogeneity using chi-square test and independent sample *t* test. Disease-specific survival was compared between groups using Kaplan-Meir survival curves with log rank test for univariable analysis and Cox regression analysis for multivariable analysis.
Results: UC/GD and adenocarcinoma were present in 59 (5.9%) and 49 (4.5%) patients, respectively. Groups were comparable as regard age (p=0.068), body mass index (BMI) (p=0.283), presence of medical com-morbidities (p=0.562), tumor stage (p=0.582), lymph node status (p=0.577) and type of urinary diversion (p=0.771). Only gender was significantly different between groups (p=0.002). On univariable analysis, BMI (p=0.041), occurrence of early postoperative complications (p=0.013), pathological cell type (p=0.026), tumor grade (p=0.033) and tumor lymph node status (p<0.001) were significantly associated with worse disease-specific survival. By multivariable analysis, presence of UC/GD (HR: 2.9; 95% CI: 1.2-6.8; p=0.013) and positive lymph node status (HR: 5.9; 95%CI: 2.8-12.5; p<0.001) were independent predictors of worse disease-specific survival.
Conclusions: UC/GD is a pathological subentity that carries worse prognosis than adenocarcinoma and UC. Patients with UC/GD should be considered at higher risk of disease recurrence and should be closely monitored.

UP.085

Radical Cystectomy in Octogenarians

Garde H[1], Galante I[1], Gómez Á[2], Gómiz J[1], San José L[3], Moreno J[1]
[1]*Clinico San Carlos Hospital, Madrid, Spain;*
[2]*Clinico San Carlos Gómez, Madrid, Spain;*
[3]*Infanta Sofía Hospital, Madrid, Spain*

Introduction and Objectives: The increasing

life expectancy and the proportion of octogenarians makes radical cystectomy (RC) take place in a larger number of people in this age group who have muscle-invasive bladder cancer (MIBC). Objective: To analyse overall survival (OS) and complications in our serie.
Materials and Methods: Retrospective descriptive analysis of patients older than 80 years undergoing RC between 2000 and 2012 years. Surgical risk (ASA), hospital stay, complications (Clavien) and type of urinary diversion have been evaluated. Variables expressed in medians. Kaplan- Meier and Chi square tests. Statistical analysis with SPSS (15.0).
Results: A total of 33 patients were included. Mean age of 81.9 (± 1.8) years. Sex: 24 (72.7%) males and 9 (27.3%) women. Surgical Risk: ASA II 9p (27.3%), ASA III 23p (69.7%) and ASA IV 1p (3%).Urinary diversion: 19p (57.6%) ureteroileostomy and 14p (42.4%) bilateral cutaneous ureterostomy. Median stay: 19 days (14-30). Pathology, T0: 1p (3%), T1: 4p (12.1%), T2: 11p (33.3%), T3: 13p (39.4%), T4 4p (12.1%), Nx: 9p (12%), N0: 13p (39.4%), N1: 3p (9.1%), N2: 5p (15.2%). The most frequent complications were pneumonia in 6p (18.2%), surgical wound infection 6p (18.2%). Lymphadenectomy performance did not involve a significant increase in complications. Six patients (18.2%) died in the immediate postoperative period, 5 of them from respiratory complications. Median survival of the rest of serie: 24 months (15.1 to 32.8). There are significant differences ($p < 0.01$) in OS if there is lymph node involvement, with a median survival of 33 months (11.1 to 54.5) for the pN0 group vs. 14m (12.2 to 15.7).
Conclusions: It is crucial an overall assessment of the patient and not just only the chronological age. Lymphadenectomy do not have a greater number of complications and brings benefits in terms of survival in patients with positive nodes.

UP.086
Can We Select Partial Cystectomy for Treatment of Muscle Invasive Bladder Tumor?
Kim B, Jung W, Ha J**, Park C**, Kim C
Keimyung University, Daegu, South Korea

Introduction and Objectives: The radical cystectomy is the treatment of choice of invasive bladder tumor. But, some patients do not want a definitive surgery or could not receive a major surgery due to medical comorbidities. We investigated the results of partial cystectomy of muscle invasive bladder tumor.
Materials and Methods: Between January 2000 and January 2013, 30 patients who underwent partial cystectomy after diagnosis of muscle invasive bladder tumor by transurethral resection of bladder tumor. Patients' age and sex were analyzed, and size, location and multifocality of tumor, combined with carcinoma *in situ*, stage, recurrence and survival were also analyzed.
Results: The patients' mean age was 65 years (range 32-81 years) and their mean follow-up period was 51.6 months (range, 6-163 months). Of the 30 patients, the number of patients in urothelial cell carcinoma was 23. Adenocarcinoma, small cell carcinoma, leiomyosarcoma and paraganglioma was 3, 2, 1 and 1, respectively. In the urothelial cell carcinoma clinically T2 and T3 were 13 and 10, of these patients, 3 patients had lymph node metastasis. Mean size of tumor was 3.1cm (range 1.3-5cm), 3 patients had multiple tumor and 2 patients had CIS lesion. The number of patient in location of lateral wall, dome, posterior wall and around ureteral orifice were 5, 5, 3 and 10, respectively. Six were margin positive after partial cystectomy. In case of multiple mass of broad CIS lesion, intravesical BCG therapy was done before partial cystectomy. Of the 20 patients who do not have lymphnode metastasis, 15 patients (75%) were not recurred during mean 67.9 months (range 18-163 months). Five patients (25%) were recurred at mean 11.1 months (range 8-19 months). Superficial recurrence, invasive recurrence, lymphnode metastasis and distant metastasis were 1, 2, 3 and 1, respectively. In univariate analysis, the rate of recurrence was associated with broad CIS ($p=0.017$), margin positive ($p=0.005$) and multiple tumors ($p=0.045$). Only CIS was associated with recurrence at multivariate analysis ($p=0.018$).
Conclusion: Partial cystectomy shows relatively satisfactory result in muscle invasive bladder tumor. Partial cystectomy could be considered as a treatment option for the patient who does not have broad CIS.

UP.087
Impact of Photodynamic-Assisted Transurethral Bladder Tumor Resection on Survival after Radical Cystectomy for Bladder Cancer
Gakis G, Ngamsri T, Hassan F, Mischinger J, Schwentner C, Rausch S, Renninger M, Stenzl A
Dept. of Urology, University Hospital Tübingen, Tübingen, Germany

Introduction and Objectives: To investigate whether PDD-guided transurethral bladder tumor resection (TUR-BT) was of prognostic value in patients who underwent subsequently radical cystectomy (RC) for bladder cancer (BC).
Materials and Methods: A consecutive series of 224 patients undergoing RC and bilateral pelvic lymphadenectomy between 2002 and 2010. We retrospectively investigated whether patients had undergone PDD-guided (hexaminolevulinate (HAL) / 5-aminolevulinate (ALA)) vs. white-light (WL-) TUR-BT prior to RC. The median follow-up was 29 months (IQR: 8-59). A PDD-based scoring model was developed based on regression estimates of significant parameters in the final multivariable analysis to predict recurrence after RC. The predictive accuracy of the model was evaluated using the c-index.
Results: Of the 224 patients, 66 (29.5%) underwent HAL-TUR-BT, 23 (10.3%) ALA-TUR-BT and 135 (60.2%) WL-TUR-BT before RC. In univariable analysis, PDD-guided TUR-BT before RC was associated with a higher number of TUR-BTs before RC ($p=0.002$) and a longer time interval between the first TUR-BT (confirming BC) and RC ($p=0.044$). No significant differences were found between the three groups [HAL vs. ALA (PDD) vs. WL] with regard to age, gender, tumor stage (≥pT3a vs. ≤pT2b and ≤pT1 vs. ≥pT2a), pT0 at RC, pN-stage, STSMs, LVI, tumor size, multifocality, grade, prior BCG-therapy, hydronephrosis at RC, concomitant CIS at RC and non-pure urothelial carcinoma. The median 3-year-RFS was 77.8% in patients with HAL-TUR-BT, 43.8% in ALA-TUR-BT and 52.4% with WL-TUR-BT before RC ($p=0.002$ for HAL vs. ALA/WL). In patients who underwent only one TUR-BT and subsequently RC within 90 days, 3-year RFS was 71.3% for PDD-TUR-BT compared to 51.1% for WL-TUR-BT ($p=0.044$). In multivariable analysis, absence of PDD-TUR-BT ($p=0.002$), ≥pT3a-stage ($p=0.033$), pN+-1stage ($p<0.001$) and positive STSMs ($p=0.032$) were independent predictors for recurrence after RC. The 3-year RFS in patients with a score 0 (low-risk), 1-2 (intermediate-risk) and 3-5 (high-risk) was 91.8%, 68.1% and 15.9%, respectively ($p<0.001$). Consideration of the variable PDD-TUR-BT in the final model increased its predictive accuracy by 1.5% with a c-index of 0.787 ($p=0.027$).
Conclusion: This is the first series indicating that PDD-guided TUR-BT is associated with improved RFS after RC for BC.

UP.089
Prognosis of Upper Tract Urothelial Cancer and Bladder Cancer
Kim K, Jeon C, Kim M, Jeong C, Kwak C, Kim H, Ku J
Seoul National University College of Medicine, Seoul, South Korea

Introduction and Objectives: The aim of this study was to compare the prognosis of upper urinary tract (UUT)-urothelial carcinoma (UC) and UC of the bladder (UCB) by pathological staging in patients treated with radical surgery.
Materials and Methods: The study population comprised 335 and 302 consecutive radical surgery cases for UUT-UC and UCB performed between 1991 and 2010. Five-year recurrence-free (RFS) and cancer-specific survival (CSS) rates were analyzed. The median follow-up

period of all subjects was 59.3 months (range 0.1 to 261.0).
Results: No differences in median patient age, distribution of pathologic T stage, or rates of positive surgical margin were observed. The UUT-UC group showed more frequent hydronephrosis (48.1% vs. 20.2%, p < 0.001) than that in the UCB group. In contrast, the UCB group showed more frequent grade III tumors (28.1% vs. 58.6%, p < 0.001), lymphovascular invasion (18.8% vs. 35.8%, p < 0.001), and associated carcinoma *in situ* (9.0% vs. 21.9%, p < 0.001) than those in the UUT-UC group. The 5-year RFS rates in the UUT-UC and UCB groups were 77.0% and 75.9%, respectively (p = 0.546). No significant differences in RFS rates were observed between the pathological T stage subgroups. The 5-year CSS rates in the UUT-UC and UCB groups were 76.1% and 76.2%, respectively (p = 0.462). No significant differences in CSS rates were shown between the pathologic T stage subgroups.
Conclusion: UUT-UC and UCB showed comparable prognosis at identical stages. However, because of the retrospective study design, our results should be verified in a prospective study.

UP.090
Is TURBT Able to Cure High Risk Recurrent Superficial or Muscle Invasive Bladder Cancer: Factors Resulting in pT0 Radical Cystectomy Specimens-Results of Two UK Centres
Mazaris E[1], **Lukacs S**[1], Nafie S[2], Gibbons N[1], Boustead G[2], Hrouda D[1]
[1]Charing Cross Hospital Imperial College Healthcare NHS Trust, London, UK; [2]Lister Hospital, Stevenage, UK

Introduction and Objectives: In 76% of radical cystectomy patients there is discrepancy between the initial stage at transurethral resection and the final pathological stage of the cystectomy specimen. More specifically in contemporary series the absence of tumour at radical cystectomy specimens (stage pT0) is estimated at 5-25%. Our aim was to determine which factors contributed to the absence of tumour in our series of radical cystectomy patients.
Materials and Methods: A total of 301 patients underwent a radical cystectomy in two tertiary referral cancer centres in the UK, over the last 10 years (January 2002-January 2012) at the Lister Hospital in Stevenage and over 7 years (January 2006-December 2012) at Imperial College NHS Trust in London. A thorough analysis of the patients' files was performed who had no residual tumour on the cystectomy specimen (pT0). Possible factors contributing to such a result were described and a systematic analysis of the relevant literature was performed.
Results: Nineteen patients had a pT0 stage after radical cystectomy. Sixteen of them had transitional cell carcinoma (one with squamous and one with sarcomatoid differentiation), two of them had squamous cell carcinoma and one of them had adenocarcinoma of the bladder on the initial transurethral resection. None of the tumours presented lymphovascular invasion. Eighteen patients are still alive and one died 45 months postoperatively from a cardiac cause.
Conclusions: We identified four independent factors which potentially could have contributed towards a pT0 cystectomy result. These included the completeness of the transurethral resection, the experience of the surgeon, the application of a standardized technique for transurethral resection and the absence of lymphovascular invasion on the TURBT specimen. The time to cystectomy in our series did not have a negative effect on pT0 final pathology result.

UP.091
Combined Multimodalities Treatment Protocol for Patients with Muscle Invasive Transitional Carcinoma of the Bladder: Results at 24 Months
Roshdy M[1], Elnahas T[2], Nour H[1]
[1]Dept. of Urology, Theodor Bilharz Research Institute, Giza, Egypt; [2]Dept. of Medical Oncology, Kasr Eleiny School of Medecine, Cairo University, Cairo, Egypt

Introduction and Objectives: Assess early oncological results of bladder preservation protocol for patients with muscle invasive clinically localized TCC of the bladder.
Materials and Methods: Twenty two patients chose multimodality treatment protocol for their clinically organ confined muscle invasive TCC of the bladder were included in this study. Tumor size, number, stage, grade and location within the bladder were recorded. Patients were offered complete resection of all visible tumors, then, two cycles of chemotherapy consisting of cisplatin 75mg/m^2 day1 and gemcitabine 1000mg/m^2 day 1 & 8, followed concurrent chemo-radiotherapy in the form of: 1) phase 1: 4500cGy/25 fractions to whole pelvis concomitant with chemotherapy by C.M.V-regimen (cisplatin 70mg/m^2 day 1, methotrexate 30mg/m^2 day 1 & 8 and vinblastine 4 mg/m^2 day 1 & 8) followed by cystoscopic assessment and biopsy. 2) phase 2: If achieved C.R: patients will continue radiation therapy to radical dose 6000cGy to the urinary bladder by 3 D conformal radiotherapy. If not achieved C.R: patients with persistent muscle invasive TCC were advised to proceed for radical cystectomy. Patients downstaged to non-muscle invasive (NMI) TCC were treated accordingly with intravesical BCG & follow-up. Patients with C.R. had urine cytology and check cystoscopy every 3 months and a CT scan of the abdomen and pelvis yearly.
Results: Median age was 58 (51-70). Tumor free with intact bladder survival at 2 years was 73% (14 patients), 3 patients (13%) developed NMI TCC and were managed accordingly. 5 patients (24%) failed to respond to treatment protocol either at the first follow-up (2 patients) or within the follow-up period (3 patients). Tumor size, number and grade were independent factors for tumor recurrence and/or failure of response.
Conclusion: Bladder preservation protocol for low grade low volume muscle invasive TCC has promising results although still suboptimal to radical cystectomy. It has to be in the urologist mind and armamentarium to be offered to patients refusing standard surgical treatment option.

UP.092
The Effect of Applying Enhanced Recovery after Surgery (ERAS) Protocol on the Outcome Radical Cystectomy in a Tertiary Care Hospital
Salem S**, Sultan M**, Selim M, El-sherif E, Abdallah M, Gamal El Deen A, Badreldin M
Menoufia University, Menoufia, Egypt

Introduction and Objectives: With a complication rate reaching up to 64% at 90 days, despite improvements in surgical technique, anesthesia and perioperative care, radical cystectomy is still considered a major cause of morbidity. Initiated in the 1990s, enhanced recovery after surgery programs (ERAS), have become an important tool of perioperative management of such surgeries. This study was designed to identify the effect of application of EARS on the outcome of patients undergoing radical cystectomyin at Menoufia University Hospital.
Materials and Methods: After obtaining ethical committee approval, we retrospectively reviewed radical cystectomy database starting from January 2007 to December 2013. ERAS was applied staring from June 2009. ERAS was developed by a committee of urology department members, nutrition, and anesthetists. Our aim was to present adequate medical care to the patients, enhance perioperative counseling, improve perioperative nutritional status, decreased operative and postoperative pain and stress, decrease perioperative complication, and decrease hospital stay. In particular points we modified the ERAS pathway to suit our population as we have high incidence of hepatitis C patients and poor preoperative nutritional status. We identified 207 patients who underwent open radical cystectomy. We divided the patients into two groups: standard care (42 patients before application of ERAS) and 163 ERAS patients.
Results: We did not find any statistically significant difference in the mortality rate between both groups. Post-operative stay is significantly shorter in ERAS group (13.9±3.6 days) than non-ERAS group (19.2±4.7 days). The complication rate, according to the modified Clavien classification, was significantly lower in the ERAS group (17.8% vs. 42.9%).
Conclusion: The perioperative management through structured ERAS programs appears to

play a major rule in patient outcome. ERAS programs definitely changed the outcome of radical cystectomy at our institution.

UP.093

The Extent of Variant Histology Does Not Impact Survival in Patients with Urothelial Carcinoma of the Bladder Treated with Radical Cystectomy

Soave A[1], Schmidt S[1], Minner S[2], Engel O[1], Kluth L[1], John L[1], Hansen J[1], Chun F[1], Steurer S[2], Dahlem R[1], Fisch M[1], Rink M[1]
[1]Dept. of Urology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Dept. of Pathology, University Medical Center Hamburg- Eppendorf, Hamburg, Germany

Introduction and Objectives: Variant histologies of urothelial carcinoma of the bladder (UCB) seem to be associated with unfavorable outcomes in patients treated with radical cystectomy (RC), although diverse findings have been reported. The impact of the extent of variant histology on outcomes is unclear. The aim of this study is to evaluate the impact of variant histologies and its extent on oncological outcomes in a RC cohort.
Materials and Methods: We collected data of 485 UCB patients treated with RC without neoadjuvant chemotherapy at an academic center between 1996 and 2011. Pathologic specimens were reviewed for presence and extent of variant histologies by dedicated uropathologists. For analyses we used the following categories: 1) Pure UCB vs. UCB with variant histology; 2) Pure UCB vs. UCB with squamous cell differentiation vs. UCB with non-squamous cell differentiation. The extent of variant histology was analyzed as continuous and categorized variable. Cox regression models evaluated associations with disease recurrence and cancer-specific survival.
Results: UCB with variant histology was present in 96 patients (20%) with squamous cell differentiation (12.4%) being most common. In patients with variant histology the extent ranged from 5% to 95%, with a median of 60%. Variant histology was associated with female gender, advanced tumor stage, presence of concomitant CIS and administration of adjuvant chemotherapy (p-values ≤0.001). Variant histology was associated with disease recurrence (p=0.049) and cancer-specific mortality (p=0.02) in Kaplan-Meier analyses. Compared to pure UCB, variant histology of non-squamous cell differentiation, but not squamous cell differentiation, was associated with disease recurrence and cancer-specific mortality (pairwise p-values ≤0.002). Using a cut-off of 60%, the extent was not associated with either endpoint compared to pure UCB in Kaplan-Meier analyses. When analyzing the extent as continuous variable, increased extent was associated with cancer-specific mortality in univariable analysis (HR 1.26; 95%CI 1.02-1.57; p=0.032). In multivariable analyses neither presence nor extent of variant histology were predictors of outcomes.
Conclusions: Variant histology can be observed in 20% of UCB patients treated with RC. Presence of non-squamous cell differentiation and increased extent of variant histology are associated with oncological outcomes. However, this effect seems weak, as it did not remain significant in multivariable analyses.

UP.094

Do Tumor Necrosis and Tumor Diameter Impact Oncological Outcomes of Patients with Urothelial Carcinoma of the Bladder Treated with Radical Cystectomy?

Soave A[1], John L[1], Minner S[2], Engel O[1], Hansen J[1], Schmidt S[1], Kluth L[1], Chun F[1], Steurer S[2], Dahlem R[1], Fisch M[1], Rink M[1]
[1]Dept. of Urology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Dept. of Pathology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

Introduction and Objectives: Tumor necrosis is an important factor for outcome prognostication in upper tract urothelial carcinoma, but the effect on outcomes in urothelial carcinoma of the bladder (UCB) remains unclear. The aim of this study is to investigate the association of tumor necrosis and tumor diameter as well as their impact on UCB outcomes in a contemporary radical cystectomy (RC) cohort.
Materials and Methods: We treated 511 consecutive patients with RC without neoadjuvant chemotherapy for UCB between 1996 and 2011. All pathologic specimens were reviewed by dedicated uro-pathologists for the largest residual tumor diameter at RC and for presence and extent of tumor necrosis. Tumor diameters were divided in ≤3cm and >3cm and patients with presence of tumor necrosis were stratified in two groups using a cut-off of 10%. Cox regression models evaluated the association with disease recurrence and cancer-specific survival, respectively.
Results: In total, 157 (30.4%) patients had a residual tumor of >3cm and 156 (30.2%) patients had presence of tumor necrosis with 34 (6.6%) of these having >10% tumor necrosis, respectively. Tumor diameter and necrosis were significantly correlated: 83% of tumors ≤3cm showed no tumor necrosis and 61.5% of tumors >3cm had tumor necrosis, respectively (r=0.481; p<0.001). Both, a tumor diameter >3cm and presence of tumor necrosis, were significantly associated with an older age, advanced pT-stage, higher grade, lymph node metastasis, positive margin status, presence of LVI and administration of adjuvant chemotherapy (all p-values ≤0.012). A tumor diameter >3cm and presence of tumor necrosis were associated with disease recurrence and cancer-specific mortality in Kaplan-Meier analyses, respectively (p-values <0.001). There was no difference in survival between patients with <10% and ≥10% tumor necrosis. In multivariable analyses that adjusted for standard clinico-pathologic parameters, a tumor diameter >3cm was a predictor for cancer-specific mortality (HR 1.48; 95%CI 1.044-2.086; p=0.027). In contrast, tumor necrosis was not independently associated with outcomes in multivariable analysis.
Conclusions: Tumor diameter and necrosis are correlated and associated with features of aggressive tumor biology as well as oncological outcomes in univariable analyses. A tumor diameter >3cm represents an independent predictor for cancer-specific mortality. These findings may help in patient counseling and treatment decision-making.

UP.095

Primary Mucosa Associated Lymphoid Tissue Bladder Cancer Case Series: 12-Month Outcomes

Jina N[1], Lee M[1], Bariol S[2,3], Patel M[2,3], Aslan P[4], Louie-Johnsun M[5], Nicholson T[6], Cozzi P[4], Collins R[7], Malouf D[4], Maclean F[8], Burchett I[8], Eade T[9], Chalasani V[1]
[1]Hornsby Hospital, Hornsby, Sydney, Australia; [2]University of Sydney, Sydney, Australia; [3]Westmead Hospital, Westmead, Sydney, Australia; [4]St George's Hospital, Kogarah, Sydney, Australia; [5]Gosford Hospital, Gosford, Australia; [6]Central West Urology, Orange, Australia; [7]Sydney Adventist Hospital, Sydney, Australia; [8]Douglas Hanly Moir, Sydney, Australia; [9]Royal North Shore Hospital, Sydney, Australia

Introduction and Objectives: Primary mucosa associated lymphoid tissue (MALT) tumours located in the bladder are very rare. As such, there is no consensus on the management of this condition, however previous authors have managed MALT tumours with transurethral resection and adjuvant radiotherapy. We present ten cases of primary MALT in the bladder with a primary aim of evaluating disease free outcomes, and a secondary aim of describing the clinical presentation and immunohistotyping.
Materials and Methods: We performed a retrospective review from 2009 of all the cases of MALT from a single pathological database in New South Wales, Australia.
Results: There were ten patients in our series. The average age was 68 (range 48-87), predominantly females (7:3) and all non-smokers. Four patients presented with macroscopic haematuria, three with recurrent urinary tract infections and two with storage urinary symptoms. Pre-operative imaging was suggestive of a bladder wall tumour in all patients when performed and consequently each patient was treated with a TURBT. All patients except two received adjuvant treatment with three patients receiving chemotherapy, three patients receiving

radiotherapy and two patients receiving a combination. One patient declined adjuvant treatment and the other is yet to be referred for adjuvant treatment. All patients who received check cystoscopies at one year were clear of disease. Their symptoms had also resolved. These patients typically have a background of chronic antigen stimulation/infection and the histological infiltrate includes aggregates of CD20 positive B-lymphocytes often with plasma cells which are monotypic for immunoglobulin light chain. The plasma cell differentiation may be extreme and a dominant histologic feature necessitating clinical and hematologic consideration and exclusion of extramedullary plasmacytoma and plasma cell myeloma. The classification of MALT is based on the WHO Classification of Tumours of Haematopoietic and lymphoid tissues 2008.

Conclusion: We present the largest series of MALT bladder tumour to date. Although there are no guidelines on tumour management, all patients in our series have responded well with TURBT and adjuvant therapy. Treatment outcomes were excellent with all patients who were followed being disease free at one year.

UP.096

The Effects of Sodium Hyaluronate and Carboxymethylcellulose for Reducing the Risk of Early Postoperative Adhesive Bowel Obstruction after Laparoscopic Radical Cystectomy: A Multicenter, Single-Blinded, Randomized Controlled Study

Chung J[1], Kim T[2], Lee J[2], Chung M[2], Goh H[1], Lee S[3]

[1]Hanyang University Medical Center, Seoul, South Korea; [2]Pusan National University Hospital, Busan, South Korea; [3]Hanyang University Medical Center, Guri, South Korea

Introduction and Objectives: Postoperative adhesive bowel obstruction (PABO) increases mobidity and delays recovery. For preventing these obstructions, sodium hyaluronate and carboxymethylcellulose (Guardix®, Hanmi Medical Co., KOR), which is anti-adhesion barrier solution, is used in various surgical fields. However, to our knowledge there is little study that has evaluated the efficacy of Guardix® in urologic surgery. We investigated the effect of Guardix® for preventing postoperative adhesive bowel obstruction after laparoscopic radical cystectomy with urinary diversion.

Materials and Methods: The subjects were 57 patients diagnosed with bladder cancer who underwent laparoscopic radical cystectomy with urinary diversion between May 2007 and July 2011. Guardix® was used or not by 2 different surgeons. We prospectively compared the incidences of adhesive bowel obstruction primarily, and early postoperative outcomes secondarily between the Guardix® group (n=26) and non-Guardix® group (n=31).

Results: The clinical and surgical characteristics of the 2 groups were similar (Table 1). The incidence of early PABO was significantly lower in the Guardix® group (0/26, 0%) than in the non-Guardix® group (5/31, 16.1%) (p=0.041). Two patients required abdominal surgery because of PABO, all of whom were in the non-Guardix® group. There were no significant differences in anastomotic leakage, intra-abdominal infection and wound infection (Table 2). Postoperative clinical courses were not different statistically in both groups (Table 2).

Conclusion: In this series, Guardix® helped to prevent bowel obstruction and had no significant adverse effect on surgical outcomes in patients who underwent laparoscopic radical cystectomy. However, a prospective randomized study will be necessary to confirm this result.

UP.097

Extraperitoneal Retrograde Radical Cystectomy and Consequent Peritoneal Cavity Reconstruction in Localized Male Bladder Cancer

Qin X[1,2], Zhang H[1,2], Wan F[1,2], **Zhu Y**[1,2], Dai B[1,2], Shi G[1,2], Zhu Y[1,2], Ye D[1,2]

[1]Fudan University Shanghai Cancer Center, Shanghai, China; [2]Shanghai Medical College,

UP.096, Table 1. Comparison of the Clinical and Surgical Characteristics between the Guardix® and Non-Guardix® Group

	Guardix® (n=26)	non-Guardix® (n=31)	p-value
% of male	88.5	83.9	0.873
Age (years)	64.7±8.8	66.3±9.6	0.765
ASA score BMI (kg/m^2)	1.79±0.8 32.1±1.8	1.69±0.9 34.2±2.6	0.398 0.465
Estimated blood loss (ml)	580.8±476.6	497.4±323.7	0.203
Operation time (min)	436.1±349.5	442.2±390.8	0.409
Transfusion rate (%)	34.6	38.7	0.521
Pathologic Stage (n)			
≤ pT2	11	18	0.292
≥ pT3	15	13	0.292
No. lymph nodes removed (range)	14.8 (6-22)	12.3 (2-33)	0.138
Type of urinary diversion (n)			
Ureterocutaneostomy	1	2	1
Ileal conduit	20	22	0.765
Studer pouch	5	7	1

UP.096, Table 2. Comparison of the Postoperative Clinical Outcomes between the Guardix® and Non-Guardix® Group

	Guardix® (n=26)	non-Guardix® (n=31)	p-value
Postoperative bowel obstruction, No. (%)	4 (15.4)	9 (29.0)	0.224
Adhesive bowel obstruction, No. (%)	0 (0)	5 (16.1)	0.041*
Paralytic bowel obstruction, No. (%)	4 (15.4)	4 (12.9)	0.562
Anastomotic site problems (%)	2 (7.7)	3 (9.7)	0.585
Anastomosis site stricture, No. (%)	1 (3.8)	3 (9.7)	0.376
Anastomosis site leakage, No. (%)	1 (3.8)	0 (0)	0.456
Intraperitoneal infection (%)	0 (0)	0 (0)	1
Wound infection (%)	1 (3.8)	2 (6.5)	0.567
Time to NPO release±SD (days)	6.9±11.4	5.8±6.9	0.317
Time to ambulation±SD (days)	1.5±0.8	1.3±0.7	0.452
Duration of drainage±SD (days)	12.9±5.2	15.1±7.9	0.213
Hospital stay±SD (days)	22.1±19.5	23.8±16.5	0.279

Fudan University, Shanghai, China

Introduction and Objectives: To introduce a standardized surgical procedure of extraperitoneal retrograde radical cystectomy and consequent peritoneal cavity reconstruction in localized male bladder cancer.
Materials and Methods: From April 2012 to April 2013, 84 consecutive male patients with localized bladder cancer (clinical stage T2 or lower) received the introduced procedure in our institute. The Key points of our procedure are: 1, extraperitoneal retrograde radical cystectomy; 2, best preservation of peritoneum except for the part attached to bladder dome (total peritoneum could be preserved in confirmed superficial disease), with respect to tumor control; 3, consequent peritoneal cavity reconstruction before urinary diversion, isolating the urinary diversion extraperitoneally. Median age was 65 years (35-83 years); preoperative characters, surgical parameters, perioperative complications, pathology and short-term prognosis were analyzed. Median follow-up was 9 months (3-15 months).
Results: The complete procedure including urinary diversion took 3.5 hours (2.2-5.0 hours), with a median peritoneal cavity exposure of 45 minutes (5-75 minutes); the median blood loss was 140ml (50-600ml), and 2 patients needed transfusion; Bilateral or unilateral neurovascular bundles were reserved in 76 cases; median pelvic drainage was 6.0 days (4-9 days), the median gastrointestinal recovery was 2.5 days (1-12 days), and the median postoperative hospital stay was 13.0 days (10-21 days); grade 2 Clavien-Dindo classification (CDC) of surgical complications were found in 11 cases, and CDC complications grade 3 or above were found in 4 cases; mild to moderate postoperative ileus happened in 2 cases, which recovered in 1 week and 2 weeks respectively, with supportive treatments; there were no perioperative deaths. No recurrence happened during follow-up.
Conclusion: The introduced procedure in localized male bladder cancer provided surgical facilities and limited abdominal organs disturbance with respect to tumor control; it effectively improved gastrointestinal recovery, reduced postoperative complications, and shortened hospital stay.

UP.098

Options for Surgical Management of G3 Urothelial Bladder Cancer

Yakovlev P[1], Mrachkovskiy V[1], Kondratenko A[1], Sakalo A[2], Kuranov Y[1], Saliy P[1]
[1]Kiev Municipal Clinical Oncology Center, Kiev, Ukraine; [2]SE Institute of Urology of AMS of Ukraine, Kiev, Ukraine

Introduction and Objectives: We review clinical presentation peculiarities of low differentiated urothelial bladder carcinoma and ensuing options for surgical treatment of the disease.
Materials and Methods: From 2004 to 2013 we treated 355 patients with G3 urine bladder cancer. Male to female ratio was 6:1. Mean patient age was 63 years (range 48 to 83). A database was kept prospectively for all patients. All patients underwent complete clinical work-up with body CT scan TUR biopsy of the tumor. Number, size, localization of the lesion in the urine bladder (apex, side wall, bladder neck) and its invasiveness we assessed and used in planning surgery. Total of 331 (93.2%) patients were surgically treated, remaining 24 (6.8%) patients underwent biopsy for nonresectable tumor. Definitive surgical treatment included: radical cystectomy in 133 (40.2%) patients, partial cystectomy in 77 (23.3%) with or without lifelong cystostomy depending on final bladder capacity, TUR in 121 (36.6%) patients. Partial cystectomy was performed in patients with resectable lesions located away from the bladder neck.
Results: Final pathology of urine bladder tumor revealed stage pT1 tumor in 17 (4.8%), pT2 in 146 (41.2%), pT3 in 151 (42.5%), pT4 in 41 (11.5%) patients. Average tumor size was 4cm (range 2 to 8cm). In all cases lesion was a solitary endophytic solid tumor with/without exophytic papillary component with clear margins. In 95.2% it was muscle-invasive tumor. Nevertheless, in 198 (59.8%) patients it was feasible to perform organ-preserving surgery (partial cystectomy or TUR). No perioperative mortality occurred.
Conclusions: Low-differentiated urothelial tumor in urine bladder presents as solid solitary intramural lesion with clear margins. In 95.2% cases tumor presents as muscle-invasive process. When small in size and located away from the bladder neck, organ preserving surgery is feasible. In our series TUR and partial cystectomy was done in 59.8% of patients. Radical cystectomy was done on 40.2% patients with G3 bladder cancer. More study is required to assess the effect of organ preserving surgery on survival and quality of life of patients.

UP.099

Laparoscopic Radical Cystectomy versus Open Cystectomy: A Prospective Study of Post-Operative Complications following Dindo Clavien Classification (A North African Country Single Centre Experience)

Lakmichi M, Moudouni S, Dahami Z, Sarf I
Dept. of Urology, University Hospital Mohamed the VI[th], Marrakech, Morocco

Introduction and Objectives: To prospectively study and compare postoperative complications in patients who had laparoscopic radical cystectomy and those who had open radical cystectomy for bladder tumors.
Materials and Methods: Between January 2007 and January 2013, 80 patients had performed radical cystectomy for bladder cancer. The mean age was 58.5 year-old [33, 75]. Sex ratio (M/F) was 5.6. Most cases were muscle invasive urothelial carcinoma (93.7%). More than 80% of our patients were ASA 1 (American society of anesthesiology classification). Group 1: 40 patients had laparoscopic radical cystectomy, when Group 2: 40 patients had open radical cystectomy. For every patient all postoperative complications were noted following Clavien Dindo classification. All female patients included in our study laparoscopic anterior pelvectomy.
Results: Radical cystoprostatectomy was performed in both groups, when 6 female patients had laparoscopic anterior pelvectomy. Sandard lymphadenectomy was performed in 74 patients (92.5%): ilio-obturator, internal and external iliac lymphadenectomy. Eighteen patients had orthotopic bladder replacement (4 in Group 1 / 14 in Group 2), when most patients had external transileal urine derivation. The mean operating time was 300 min and 255 min for Group 1 and Group 2 successively. Blood loss was estimated at 200 cc and 450 cc for Group 1 and Group 2 successively. Positive surgical margins were the same in both groups (2 patients in every Group). Postoperative complications were classified for the laparoscopic surgery group as follows: Grade 0 in 27 patients (67.5%) versus 22 patients (55%) in the open surgery Group, Grade I early complications in 3 patients (7.5%) versus 2 patients (5%) in the open surgery Group. However, no late Grade II complication was noted in both groups. Grade IIIb early complications in 3 patients (7.5%). Grade IIIb early complications were noted in 3 patients (7.5%) versus 2 patients (5%) in Group I and II successively. No grade IIIb late complication was noted for both groups. Grade V early complications were noted in 2 patients (5%) in both groups. Finally, Grade V late complications were reported in 2 patients (2%) in the open surgery Group.
Conclusion: Following our prospective study there were no huge differences between the open and the standard laparoscopic radical cystectomy for bladder tumor in term of complications. However, it was a single centre experience study with a non randomized small sample of patients. Though, we appreciated all the advantages of laparoscopy technique in term of minimizing blood loss, rapid recovery and social reinsertion for our patients compared with the open technique group of patients.

UP.100

Primary Signet-Ring Cell Carcinoma of the Urinary Bladder: About 3 Cases

Fourati M, Chaabouni A, Hadj Slimen M, Rebai N, Touaiti T, Smaoui W, Bouacida M, Mhiri M
CHU Habib Bourguiba, Sfax, Tunisia

Introduction and Objectives: Primary signet-ring cell carcinoma of the urinary bladder is a rare variant of mucus-producing adenocarcinoma constituting approximately 0.5% to 2.0% of all primary carcinomas of the bladder. This type of tumor presents some histological similarities with tumors of other organs, including the best known which is the gastric plastic linitis. The aim of our study is to determine the clinical, para-clinical and histological features, treatment and prognosis of this rare histological variety.
Methods and Materials: Our study was a descriptive and retrospective analysis of 3 cases of signet-ring cell carcinoma of the bladder, collected in the Urology Department and Pathology Department during a period of 14 years (1999-2013).
Results: The mean age at diagnosis was 54.3 years with a male predominance. The diagnosis of signet-ring cell carcinoma was facilitated by imaging and cystoscopy. Histological examination supplemented by standard immunohistochemical study confirmed the diagnosis. Thoraco-abdominal-pelvic CT scan had evaluated the tumor extension to the bladder, lymph node chains and metastases. Two patients had undergone a radical cysto-prostatectomy. The third patient had pulmonary metastases and then was treated by palliative care. The mean survival rate was of 5 months, with extremes ranging from 2 to 11 months.
Conclusion: Primary signet-ring cell carcinoma of the bladder is considered as a highly malignant tumor with poor prognosis due to its highly invasive nature and high metastatic potential.

UP.101
Muscle Bladder Infiltrating Tumor in Octogenarian: About 22 Cases
Hadj Slimen M**, Touaiti T**, Bouassida M, Smaoui W, Fourati M, Mseddi M, Rbai N, Mhiri M
CHU Habib Bourguiba, Sfax, Tunisia

Introduction and Objectives: The aim of the study is to determine the profile of patients and therapeutic possibilities which can be proposed for them.
Materials and Methods: In 30 years, a total of 52 octogenarian patients were treated for bladder tumors. Twenty two of them had muscle bladder infiltrating tumor.
Results: The average age was 84.2 year and male to female ratio of 1.2. Cardiovascular co-morbidity risk factors were present in 100%. Fortuitous discover was in 31.8%, haematuria was present in 100%. Anatomopathology and imaging tests revealed the muscle bladder infiltrating tumor. Our patients were classified using the American Society of Anesthesiologists score in ASA I – II: 7 patients (31.81%), and ASA III-IV: 15 patients (68.18%). In terms of anatomopathology, we were able to distinguish 5 histological types: ureteral carcinoma (54.54%), epidermoid carcinoma (7.27%), adenocarcinoma (9%), sarcomatoid carcinoma (4.5%), micropapillary carcinoma (4.5%). Therapeutic abstention concerned 10 patients because of severe co-morbidity. Total cystectomy was performed in 4 patients. Eight patients underwent radiation therapy. Early postoperative evolution was satisfying in all cases, no postoperative mortality occurred. In late postoperative evolution, nocturnal urinary leakage and erectile impotence were reported. Metastasis were diagnosed in one operated patient and 9 how underwent radiation therapy.
Conclusion: Chronological age should not be a medical contraindication to the surgical treatment of the muscle bladder infiltrating tumor but rather the physiological age, considering the co-morbidity factors, and assessment of extension which influences the prognosis of the bladder infiltrating tumor in 80 years and over patients.

UP.102
The Role of Preoperative Transurethral Biopsy of the Prostatic Urethra for Evaluation of the Urethral Margin at Radical Cystoprostatectomy
von Rundstedt F[1], Shen S[2], **Godoy G[1]**, Lerner S[1]
[1]Baylor College of Medicine, Houston, USA; [2]Houston Methodist Hospital, Houston, USA

Introduction and Objectives: We have used the prostatic urethra biopsy as part of our preoperative management and clinical staging prior to radical cystoprostatectomy (RC). Our hypothesis is that a negative preoperative transurethral resection (TUR) biopsy of the prostatic urethra accurately predicts a final negative apical urethral margin, safely replacing an intraoperative frozen section for urethral preservation and orthotopic neobladder utilization.
Materials and Methods: TUR biopsies of the prostatic urethra adjacent to the verumontanum at 5 and 7 o'clock were performed on 272 male patients that underwent RC at our institution between 1987 and 2013. Pathology results of biopsy were correlated with those of final apical urethral margin status of the RC specimen, and whether or not the surgeon had done an intraoperative frozen section of the urethral margin and performed a primary or secondary urethrectomy. Whole mount step section of the entire prostate was performed and examined microscopically in the majority of cases.
Results: Of the 272 patients, 200 (74%) had a negative and 72 (26%) had a positive biopsy. The overall final positive apical urethral margin rate in the RC specimen in this series was 2.2% (6/272). Five of those patients underwent a primary or secondary urethrectomy. In one patient with a positive final margin, a urethrectomy was not performed as the frozen section of apical urethra had been negative despite the finding of an invasive urothelial carcinoma on the preoperative TUR biopsy. The negative predictive value of a TUR biopsy was very high (99.5%) with a very low positive predictive value (PPV) for the final pathological margin status.
Conclusion: The apical urethral positive margin rate is very low in patients undergoing RC. A positive TUR biopsy has a low PPV for a positive final apical margin (7%). A negative preoperative TUR biopsy of the prostatic urethra can reliably predict a negative final margin and may obviate the need for intraoperative frozen section evaluation. This information facilitates preoperative counseling patients about the feasibility for orthotopic neobladder reconstruction of the bladder after RC.

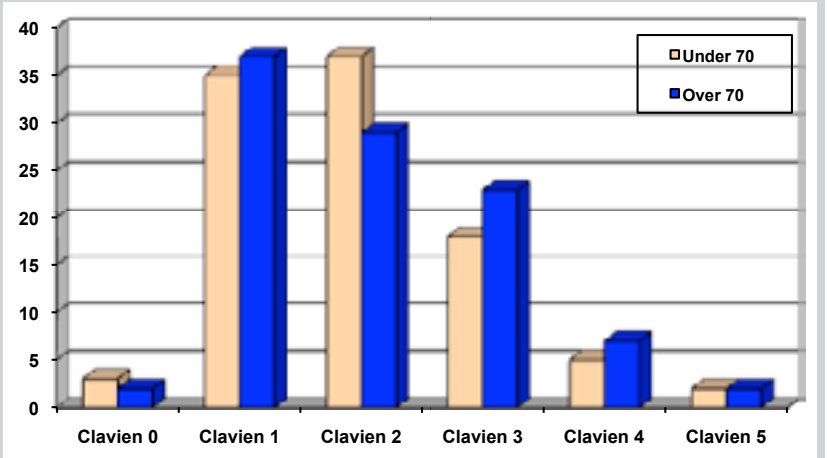
UP.103
Is Cystectomy Feasible in Elderly Patients?
Jensen T[1], Holt P[1], Olsen K[1], Mathiasen H[1], Lund L[1,2]
[1]Dept. of Urology, Odense University Hospital, Odense, Denmark; [2]Clinical Institute, University of Southern Denmark, Odense, Denmark

Introduction and Objectives: The number of new cancer patients will increase by 23% from 2010 to 2030 in the elderly population. It is therefore important to find out who is "fit or frail" in patients older than 70 years undergoing cystectomy.

UP.103, Table 1.

	Under 70 Years	Over 70 Years	P value
Number of patients	85	44	
Age	61 (42-69 Years)	73 (70-84 Years)	n.s.
BMI	26 (19-34)	25 (19-37)	n.s.
Hospital stay	12 (4-68)	13 (4-38)	n.s.
Clavien	3,35,37,18,5,2	2,37,29,23,7,2	
Open surgery	59 (69%)	28 (64%)	
Robotic assisted surgery, with open urinary diversion	16 (19%)	10 (22%)	
Robotic assisted surgery	10 (12%)	6 (14%)	

UP.103, Table 2. Complications Following Cystectomy



Materials and methods: A retrospective study of all patients who were diagnosed with bladder cancer and underwent cystectomy in the period from April 2011 to September 2013 (30 months). A total of 129 patients underwent cystectomy. Forty-four patients (31 males, 13 women) were older than 70 years and 85 patients, younger (72 males, 13 women).
Results: The mean age in patients over 70 years of age were 73 years (range, 42-69), in patients younger mean age 61 years (range, 42-69). Complication rate were evaluated according to clavien grade, and no difference were seen between the two groups (see Table 2). No differences in outcome after operating technique (robotic and open surgery) were seen in the two groups. Three patients died within the 30 days following surgery (one in the age group 70+).
Conclusion: Our retrospective analysis suggests that cystectomy can be offered to the selected patients older than 70 years with no differences in morbidity or mortality.

UP.104
Analysis of Radiation Therapy in Patients with Metastatic Bladder Cancer
Okada M, Nishiyama N, Shindou T, Kitamura H, Masumori N
Sapporo Medical University School of Medicine, Sapporo, Japan

Introduction and Objectives: Radiation therapy (RT) for local recurrence or distant metastasis of bladder cancer (BC) is usually given with palliative intent to relieve symptoms and reduce suffering. However, some patients who undergo RT for these purposes obtain long-term survival. We evaluated the survival benefits of RT for local recurrence and metastasis in BC patients.
Materials and Methods: Data were collected on 32 consecutive patients with metastatic BC treated by RT between 2001 and 2012 at a single institute. Local recurrence and metastasis during follow-up were detected after radical cystectomy. Eight (25%) of the patients underwent definitive RT (DRT), defined as RT targeting all known disease sites without palliative intent. Twenty-four (75%) patients received palliative RT (PRT). Overall survival (OS) was determined by the Kaplan-Meier method with comparison by logistic regression analysis. In patients receiving opioids for pain relief, the doses of opioids were evaluated before and after RT.
Results: All patients completed RT without severe adverse events. The median follow-up was 11.2 months (range, 1.0-39.3 months). Twenty-four (75%) patients underwent concurrent cisplatin-based chemotherapy. DRT and PRT without chemotherapy were given to 4 and 5 patients, respectively. Of the 8 patients receiving DRT, 4 (50%) had local recurrence in the pelvis or lymph node metastasis, 3 (37.5%) had lung metastasis, and 3 (37.5%) had bone metastasis. Of the 24 patients receiving PRT, 12 (50%) had local recurrence in the pelvis or lymph node metastasis, 6 (25%) had lung metastasis, 17 (70.8%) had bone metastasis. The OS rates at one year were 53.1% for all patients, 75.0% for DRT, and 45.8% for PRT. The median OS rates were 20.0 and 10.8 months for patients who received DRT and PRT, respectively (hazard ratio: 4.505, p=0.034, log-rank test). Of the 16 patients receiving opioids for pain relief, dose reduction was achieved in 7 (44%). Fourteen patients (88%) did not need more opioids after PRT.
Conclusion: RT can be safely performed for local recurrence or metastasis of BC and can improve OS in some patients.

UP.106
The Combination of Gemcitabine and Cisplatin Chemotherapy with Short Hydration for Patients with Urological Malignanancy in Outpatient Center
Azuma T[1], Matayoshi Y[2], Nagase Y[2], Oshi M[2], Homma Y[1]
[1]Dept. of Urology, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan; [2]Dept. of Urology, Tokyo Metropolitan Tama Medical Center, Tokyo, Japan

Introduction and Objectives: Chemotherapy is a mainstream treatment for locally advanced or metastatic urothelial cancer. Because of nephrotoxicity due to cisplatin, hydration for at least 24 hours can decrease quality of life (QOL) for patients, and increase medical cost. We evaluated the safety of gemcitabine and cisplatin (GC) chemotherapy with short hydration in outpatient center and quality of life for patients.
Materials and Methods: Between 2010 and 2012, 17 patients at the Tokyo Metropolitan Tama Medical Center had GC chemotherapy with short hydration. Patients received a gemcitabine 800-1000 mg/m^2 on day 1, 8 and 15 plus cisplatin 56-70 mg/m^2 on day 2. Cisplatin was administered with 2L hydration. For monitoring of renal function, serum creatinine (Cr) level was checked before and during GC chemotherapy. For evaluation of QOL, Functional Assessment of Cancer Therapy (FACT-G) questionnaire was used.
Results: Mean patient age was 70.6 years (range 64 to 84) and all are male. Five patients had nephrectomy, and 5 patients had single kidney because of hydronephrosis due to malignancy. The patients with serum creatinine value more than 1mg/dl were 9 cases. GC chemotherapy with short hydration was performed safely in outpatient center without increase of serum Cr level. FACT-G score improved compared with that of hospitalization.
Conclusion: GC chemotherapy with short hydration was useful for patients with urological malignanancy.

UP.107
Clinical Outcomes following Treatment of Organ-Confined Small Cell Carcinoma of the Bladder: A Singapore General Hospital Experience
Teo J[1], Chow M[1], Chua W[1], Sim H[2], Ng L[1], Lee L[1]
[1]Singapore General Hospital, Singapore; [2]Ravenna Urology Clinic, Gleneagles Medical Centre, Singapore

Introduction and Objectives: Small cell carcinoma of the bladder (SCCB) is a rare and aggressive cancer with a high potential of metastasis. This study aims to analyse the oncological outcomes following treatment of this condition in a single institution.
Materials and Methods: All patients with histologically diagnosed organ-confined SCCB between January 1990 and June 2013 were identified from a prospectively maintained cancer database. We dichotomised the patients into 2 groups: those with pure small cell histology and those with mixed histology (small cell

carcinoma with transitional cell carcinoma). The clinical variables analysed include: patient demographics, histology, treatment and survival outcomes.
Results: We identified 13 patients, with a mean age of 60 years (range 50 to 85). All patients presented with haematuria. In this cohort, 9 had a known smoking history. Five patients had pure small cell carcinoma histology while 8 patients had a mixed histology. One hundred percent of patients in the pure group presented with clinical T2 disease, whereas 75% of patients from the mixed group presented with clinical T2 disease and 25% presented with clinical T3 to T4 disease. In the pure SCCB group, 1 underwent surgery, 2 underwent chemotherapy with radiotherapy, 1 underwent chemotherapy and 1 did not undergo treatment. In the mixed SCCB group, 4 underwent surgery, 2 underwent chemotherapy with radiotherapy, 1 underwent chemotherapy and 1 did not undergo treatment. The mean overall survival (OS) was 13 months for the whole cohort, 10 months for the pure SCCB group and 97 months for the mixed SCCB group. There were 3 survivors from the mixed SCCB group at the conclusion of the study.
Conclusion: SCCB is an aggressive disease with poor prognosis. Patients with mixed SCCB have evidently better OS than pure SCCB. Best treatment option is unclear as good outcomes are seen in patients who undergo different treatment, and the rarity of this disease does not allow for meaningful conclusions. Further multi-centre studies are required to determine the optimal treatment modality of SCCB due to its rarity.

UP.109
The Value of Good Quality First Look Transurethral Resection of Bladder Tumour (TURBT) in the Treatment of the Newly Diagnosed Bladder Tumour
Elabbady A, Kotb A, Sharafeldeen M, Atta M
Alexandria University, Alexandria, Egypt

Introduction and Objectives: Despite, the fact that there is a clear consensus on the aims of TURBT, there is little agreement on how to perform TURBT to achieve that goal. The aim of our work was to analyze the impact of a good quality first look transurethral resection of bladder tumour (TURBT) protocol on the identification of muscle invasive disease on initial biopsy and on the cystoscopic findings on second look cystoscopy.
Materials and Methods: We prospectively included 50 consecutive patients, who underwent TURBT sessions for newly diagnosed bladder cancer, All the TURBTs were extended by resecting deeply to the extravesical fat and extending transversely removing extra few millimeters from the tumour edges. Urethral catheter was left routinely for 5 days postoperatively. All patients with non-muscle invasive disease underwent 2nd look cystoscopy for either resection of any residual tumour or biopsy from the site of previous resection.
Results: No single complication was encountered following our resection technique. We could identify 10 patients (20%) following initial resection as having muscle invasive bladder cancer. Of the remaining 40 patients, 3 patients had low grade Ta disease, and so second biopsies were aborted for them. The remaining 37 patients had T1, G2-3 disease and none of them had evident residual disease at the site of tumour resection, as proven clinically and pathologically by taking a cold-cup biopsy from tumour bed.
Conclusion: Good quality first look TURBT provides detailed information about the horizontal and vertical extent of the bladder tumour. The implementation of this protocol of an extended TURBT is greatly needed to improve local tumour control and avoid the need for a second look cystoscopy as a routine technique.

UP.110
Secondary TUR in High Risk, Non-Muscle-Invasive, Bladder Tumors: Does Experience Change the Results?
Botoca M[1], Cumpanas A[1], Dema A[2], Minciu R[1], Bardan R[1], Serbescu C[1], Bucuras V[1]
[1]Dept. of Urology, Victor Babes University of Medicine and Pharmacy, Timisoara, Romania; [2]Dept. of Pathology, Victor Babes University of Medicine and Pharmacy, Timisoara, Romania

Introduction and Objectives: The secondary TUR is recommended due to the significant risks of either residual tumor after the first TUR-B or under-staging at the initial resection. The aim of our study was to compare the differences between three periods over a 7 years interval, when the same urologists and the same pathologist were involved in the TUR-B and re-staging TUR-B procedures and to evaluate the impact of experience in the final outcome.
Materials and Methods: A total of 205 cases of high-risk non-muscle invasive bladder tumors which underwent initial TUR B, followed by a secondary TUR B 3-4 weeks later performed by the same operator, were divided in three groups, according to the years of surgery, and were retrospectively analyzed and compared in terms of pathological results.
Results: There were no significant differences between the 3 groups (23 patients, 89 patients, and 93 patients, respectively) in terms of understaging rate (10-15%), tumor-free status after the initial resection (58-62%) and the lack of concordance between the primary and secondary TUR (20-23%).
Conclusion: Although the experience of the surgeons and the pathologist increased, the risk of understaging, the lack of concordance between the initial and secondary TUR-B and of the incomplete resection remained unchanged, revealing the mandatory role of re-staging TUR-B for all cases of high risk non-muscle invasive bladder tumors.

UP.111
Construction of Predictive Models for Cancer-Specific Survival of Patients with Non-Muscle Invasive Bladder Cancer Treated with Bacillus Calmette-Guérin: Results from a Multicenter Retrospective Study
Nishiyama N[1], Kitamura H[1], Hotta H[2], Takahashi A[3], Yanase M[4], Itoh N[5], Tachiki H[6], Miyao N[7], Matsukawa M[8], Masumori N[1], Kunishima Y[9], Taguchi K[10]
[1]Dept. of Urology, Sapporo Medical University School of Medicine, Sapporo, Japan; [2]Dept. of Urology, Asahikawa Red Cross Hospital, Asahikawa, Japan; [3]Dept. of Urology, Hakodate Goryoukaku Hospital, Hakodate, Japan; [4]Dept. of Urology, Sunagawa City Medical Center, Sunagawa, Japan; [5]Dept. of Urology, NTT East Japan Sapporo Hospital, Sapporo, Japan; [6]Dept. of Urology, Steel Memorial Muroran Hospital, Muroran, Japan; [7]Dept. of Urology, Muroran City General Hospital, Muroran, Japan; [8]Dept. of Urology, Takikawa Municipal Hospital, Takikawa, Japan; [9]Dept. of Urology, Hokkaido Social Work Association Obihiro Hospital, Obihiro, Japan; [10]Dept. of Urology, Oji General Hospital, Tomakomai, Japan

Introduction and Objectives: There are no robust data on prognostic factors for the survival of patients with non-muscle invasive bladder cancer (NMIBC) treated with bacillus Calmette-Guérin (BCG). The aims of this study were to clarify the prognostic factors and to validate the BCG failure classification advocated by Nieder et al. in patients with NMIBC who had intravesical recurrence after BCG therapy.
Materials and Methods: Data from 402 patients who received intravesical BCG therapy between January 1990 and November 2011 were collected from 10 institutes. Among these patients, 187 with BCG failure were analyzed for this study.
Results: The patients were stratified into groups based on whether they were BCG-refractory (77, 41.2%), BCG-resistant (4, 2.1%), BCG-intolerant (8, 4.3%) or BCG-relapsed (98, 52.4%). Twenty-nine patients were diagnosed with progression at the first recurrence after BCG therapy. Eighteen patients (62%) died of bladder cancer. A total of 158 patients were diagnosed with NMIBC at the first recurrence after BCG therapy. Of them, 23 (15%) underwent radical cystectomy. No patients who underwent radical cystectomy died of bladder cancer during the follow-up. The cancer-specific survival (CSS) rate at 10 years for the 135 patients with bladder preservation was 75.2%. On multivariate analysis of the patients with

bladder preservation, the independent prognostic factors for CSS were age (>70 [p=0.002]), tumor size (>3cm [p=0.015]) and the Nieder classification (BCG-refractory [p<0.001]). The CSS rates at 10 years were 51.9% and 83.7% for the BCG-refractory patients and other BCG failure groups, respectively (p=0.013). In subgroup analysis, the estimated 10-year CSS rates in the groups with no positive, one positive, and two to three positive factors were 88.9%, 73.7% and 37.8%, respectively (p<0.001).
Conclusion: Patients with stage progression at the first recurrence after BCG therapy had poor prognoses. Three prognostic factors for predicting survival were identified (age, tumor size, and the Nieder classification) and used to categorize patients with NMIBC treated with BCG into three risk groups based on the number of prognostic factors in each one. These risk groups can be used in clinical trial design and interpretation, and in patient management.

UP.112
Circulating Tumor Cells in Bladder Cancer: Optimization of Detection and Investigation of Their Diagnostic and Prognostic Roles
Ali-El-Dein B, Laymon M, Zakaria M, Abdel-Raouf R, El-Naggar H, El-Tabey N, El-Hefnawy A, Barakat T, El-Halwagy S, Abdel-Rahim M, Abdel-Hamid M, Lotfy Z, Ibrahiem E , Shaaban A
Urology and Nephrology Centre, Mansoura, Egypt

Introduction and Objectives: To optimize detection of circulating tumor cells (CTC) in bladder cancer (BC) using 6 molecular markers and real time PCR technology and to assess their diagnostic and prognostic value in a preliminary report.
Materials and Methods: This is a quasi experimental study that was approved by the local REC committee, performed between April 2012 and September 2013 and included 118 individuals. Of these, 24 volunteers served as controls, 8 patients underwent TURBT for NMIBC and 86 patients (76 males; 10 females) underwent radical cystectomy (RC) for BC. The latter included 61 cases with transitional cell carcinoma (TCC), 24 with SCC and 1 with adenocarcinoma. Blood samples were obtained from BC patients before RC, during TURBT in NMIBC and from the controls. Six molecular markers (CK-19, CK-20, Survivin, Uroplakin-II, Mucin7 (MUC-7) gene and EGFR) were used. Expression of these markers was evaluated by quantitative real-time PCR (qRT-PCR) on RNA isolated from peripheral blood samples. The results of the 6 molecular markers (CTC) were correlated to the histological type, grade, T stage, N stage and disease free survival (DFS).
Results: Detection of CTC, by expression of one or more genes, was positive in 36 of 86 (39.5%) BC patients undergoing cystectomy and 2 of 8 patients with NMIBC during TURBT. The detection rate of CTC was higher in higher T stages where it was positive in 6, 6, 12, 6 and 6 out of 19 T1, 21 T2, 28 T3a, 9 T3b and 9 T4 tumor, respectively (p = 0.03). No correlation was found between positive CTC and grade, lymph node status or histological type of BC. DFS was better for CTC negative cases, where local recurrence and/or distant metastasis developed in 6/50 (12%) and 9/36 (25%) in negative and positive cases, respectively (log rank p = 0.02) over a mean follow-up of 6 months (range 3-12).
Conclusions: The high detection rate of CTC in this cohort is due to the use of multiple markers. A good correlation was noted between the detection of CTC and T stage. The presence of CTC has a negative impact on DFS in patients undergoing cystectomy for BC.

UP.113
Treatment Efficacy and Tolerability of Intravesical Bacillus Calmette-Guerin (BCG): Six-Weekly Induction Course and Once Every Two Months for One Year Maintenance Protocol in High Risk Non-Muscle Invasive Bladder Cancer (NMIBC)
Yamada D, Muneishi R, Nakatsuka H, Uematsu K
Dept. of Urology, Mitoyo General Hospital, Kanonji City, Japan

Introduction and Objectives: The generally used maintenance BCG (mtceBCG) protocol, however, which involves 3 weekly treatments at 3 months, 6months, and every 6 months thereafter for 3 years, has major side-effects, and the rate of protocol completion is low. In this department, mtceBCG is being implemented involving one dose every two months for a year (a total of six doses). This results in relatively few side-effects and is an effective method, hence this report.
Materials and Methods: Since 2007 this hospital has been targeting non-muscle invasive bladder cancer (NMIBC) patients undergoing TURBT, and who are considered to be at high risk for recurrence. After a course of 6 weekly instillations with BCG, mtceBCG protocol (once every two months, six times in total) is implemented. To date, 21 cases have been treated, and six are currently being treated. Of these, 25 were men and two were women; their ages ranged from 41 to 84. Regarding the pathology of bladder cancer, 14 patients were high grade, while 13 of them had CIS lesions.
Results: The scheduled six doses of mtceBCG were administered in 19 out of 21 cases. The two cases not completing the course did so because in one case side effects developed, while in the other the bladder cancer reoccurred. Bladder cancer recurrence was noted in four patients after completion of mtceBCG, and one patient underwent complete bladder extirpation surgery, but the bladder was preserved in the remaining three. In the four cases in which bladder cancer recurrence was noted after completion of mtceBCG, the recurrence happened four years and ten months, one year and ten months, nine months and seven months, respectively, after the completion of BCG therapy.
Conclusion: mtceBCG, administered once every two months, had few side effects, and was effective in preventing recurrence. It is believed, however, that consideration should be given to extending the period during which mtceBCG is administered.

UP.114
Can Intra-Vesical Mitomycin-C Hyperthermia Challenge Radical Cystectomy as Standard of Care in the Management of High-Risk Non-Muscle Invasive Bladder Cancer?
Nair R, Pai A, Ayres B, Bailey M, Perry M, Issa R
St. George's Hospital, London, UK

Introduction and Objectives: There has been a paradigm shift towards consideration of alternative intra-vesical chemotherapeutic agents in the management of primary or Bacillus Calmette–Guérin (BCG) failure high-risk non-muscle invasive bladder cancer (HR-NMIBC). Intra-vesical Mitomycin-C hyperthermia (MMC-HT) has been shown to be a viable option in such circumstances. Although the morbidity and medium-term outcomes of MMC-HT are well documented, there is still need for evaluation of long-term disease specific outcomes matched against the current standard of care for HR-NMIBC; radical cystectomy (RC).
Materials and Methods: A prospective single-centre review of 103 patients receiving MMC-HT was performed between June 2006 and January 2014 and matched against 51 cases undergoing RC for HR-NMIBC. Co-morbidities were quantified using the Charlson co-morbidity Index (CCI), and peri- and post-procedure complications were recorded. Post operative pathology, recurrence and progression rates together with five-year overall and disease specific survival were evaluated.
Results: The mean age of patients receiving MMC-HT was 72 (age range 51-91) compared to 68 (age range 54-84) undergoing RC. Thirty percent of patients underwent primary-RC for HR-NMIBC versus 70 percent for BCG failure. This compared to 11 percent receiving primary MMC-HT versus 89 percent for BCG failure. The mean CCI score for patients receiving MMC-HT was significantly higher than RC group (6.4 vs. 4.1). Significant complication rates classified as a Clavian-Dindo score of greater than 2, was significantly higher in the RC cohort (21 percent) compared to patients

receiving MMC-HT (0 percent). There were no deaths associated with MMC-HT treatment compared to a ninety-day mortality of four percent in those receiving RC. Median follow-up was 40 months (4 to 92 months) for both cohorts. Disease specific survival at five years was observed at 85.2 and 74.6 percent in the MMC-HT and the RC cohorts respectively, whilst overall survival figures were 61.9 versus 68.4 percent.
Conclusion: MMC-HT is both feasible and safe if offered to well-selected patients. It provides durable long-term outcomes compared to RC for HR-NMIBC. We demonstrate that despite similar baseline characteristics in these groups, there is a clear advantage in complication rates favouring MMC-HT over RC without a significant difference in disease specific or overall survival.

UP.115
Is Intravesical Bacillus Calmette-Guérin Superior to Chemotherapy for Intermediate-Risk Non-Muscle-Invasive Bladder Cancer? It's Still an Ongoing Debate
Song S, Han K, Jeong I, Hong B, Park H
Asan Medical Center, Seoul, South Korea

Introduction and Objectives: To evaluate the risk of recurrence in patients with intermediate-risk-NMIBC after intravesical instillation with chemotherapeutic agents or BCG.
Materials and Methods: In total, 3,023 consecutive patients underwent transurethral resection (TUR) between 2002 and 2012 in a tertiary-care hospital. The 746 patients with intermediate-risk NMIBC, as defined by 2013 European Association of Urology guidelines, formed the study group. The primary outcome was time to first recurrence. The recurrence rates of the TUR alone, chemotherapy after TUR, and BCG following TUR groups were determined by Kaplan-Meier analysis. Risk factors for recurrence were identified by Cox-regression analysis. The inverse-probability-treatment-weighting model (IPTW) was used to compare the TUR+chemotherapy and TUR+BCG groups in terms of recurrence risk.
Results: Of the 746 patients, 507 (68.1%) underwent TUR alone, and 160 (21.4%) and 78(10.5%) underwent TUR+BCG and TUR+chemotherapy, respectively. During a median follow-up period of 51.7 months (interquartile range, 33.1-77.8 months), 286 patients (38.5%) experienced tumor recurrence. The 5-year recurrence rates of the TUR-alone, TUR+chemotherapy, and TUR+BCG groups were 53.6±2.7%, 30.8±5.7%, and 33.6±4.7%, respectively (p<0.001). Chemotherapy (Hazard ratio [HR]=0.56, 95% confidence intervals [CI]=0.36–0.89) and BCG treatment (HR=0.44, 95%CI=0.31–0.62) were independent risk factors of recurrence. IPTW analysis showed that TUR+BCG did not differ from TUR+chemotherapy in recurrence risk (HR=0.88, 95%CI=0.49–1.58).
Conclusions: The recurrence risks after chemotherapy and BCG in intermediate-risk NMIBC are comparable.

UP.116
Is Intermediate-Risk Non-Muscle Invasive Urothelial Carcinoma of the Bladder Indeed a Homogeneous Entity?
Song S, Han K, Jeong I, Hong B, Park H
Asan Medical Center, Seoul, South Korea

Introduction and Objectives: Risk stratification is imperative for determining the optimal management strategy for non-muscle-invasive bladder cancer (NMIBC). However, the intermediate-risk group includes a wide variety of patients. The homogeneity of patients with intermediate-risk NMIBC in terms of risk intensity was assessed in this study.
Materials and Methods: All consecutive patients with intermediate-risk NMIBC (defined by 2013 European Association of Urology Guidelines) who underwent transurethral resection in a single center in 2002–2012 were enrolled. The pre-surgery risk intensity of each patient was estimated by using the European Organization for Research and Treatment of Cancer (EORTC) recurrence score. The patients were divided into the low (EORTC 1–4 points) or high (4–9 points) recurrence score groups. The primary outcome was the time to first recurrence, which was estimated *via* the Kaplan-Meier method. Independent tumor recurrence predictors were determined *via* Cox-regression models.
Results: Of the 746 intermediate-risk patients (62.2±11.9 years, 608 males), 625 (83.8%) and 121 (16.2%) had low and high EORTC-scores, respectively, and 239 (31.9%) underwent instillation with Bacillus Calmette-Guérin (n=160, 21.4%) or chemotherapy (n=78, 10.5%). During follow-up (median, 51.7 months; interquartile range, 33.1–77.8 months), 286 patients (38.5%) experienced tumor recurrence. Five-year recurrence rates of the low and high EORTC-score groups were 41.1±2.4% and 76.1±4.7%, respectively (P<0.001). In the adjuvant-treated patients, 5-year recurrence rates for the low and high EORTC-score groups were equivalent 24.1±3.7% and 66.9±8.4%, respectively (P<0.001). High baseline EORTC-score was an independent predictor of tumor recurrence.
Conclusions: The intermediate-risk group seems inhomogeneous. Further risk stratification in this group is required.

UP.117
Ideal Time to Re-Resection in High Grade Superficial Bladder Cancer: Does It Matter?
Dixon S, Fung D**, El Hassan R**, Menezes P
Sunderland Royal Hospital, Sunderland, UK

Introduction and Objectives: We review the time taken for re-resection of high grade superficial bladder cancers and outcomes in a high volume tertiary urology centre.
Materials and Methods: In our centre, between 240 and 300 new bladder cancers are diagnosed each year. We reviewed the high grade superficial bladder cancers (G3/high G2, pTa/pT1) between the 1st January 2012 and 31st December 2012 in whom re-resection was recommended. The histopathology department identified the new high grade superficial bladder cancers diagnosed during this period. Their case notes and electronic records were examined retrospectively, details collected were the time taken between the first and second resection, surgeon responsible, detrusor muscle included in sample and the histology outcome (i.e. down staged or upstaged).
Results: Fifty eight patients underwent re-resection for high grade superficial bladder cancer. Mean age was 75 (range 56 to 89) and the male to female ratio was 1:1. The mean number of days between 1st and 2nd resection was 109 days i.e. 15.5 weeks (range 32 to 499, SD 80 days). A total of 12.1% of re-resections were carried out within a 6 week time period; 65.5% of patient samples included detrusor muscle in both the first and second histological sample; 48.3% of patients had the same consultant lead for both resections; 13.8% of patients were upstaged following re-resection.
Conclusion: The 2-6 week time period recommendation for re-resection has no level 1 evidence. Despite the delay, upstaging was found in only 13.8% of cases and literature reports an upstaging rate of 4-25%. However only 2/3 of all specimens contained detrusor muscle and under half of patients had the same surgeon for both procedures. Resection of bladder cancer is technically challenging and should be reserved for senior trainees and consultants. The re-resection should be performed by the same surgeon. Prospective study in the quality of resection and time to re-resection versus the outcome is required.

UP.119
Outpatient Endoscopic Removal of Solitary Low Risk Ta-T1 Bladder Tumors < 1 cm under Local Anesthesia: Cost-Benefit Considerations
Brausi M, Verrini G, Peracchia G
Dept. of Urology, AUSL Modena, Carpi, Italy

Introduction and Objectives: Diathermy coagulation of small recurrent superficial bladder tumors in an outpatient setting has been advocated by many authors. It is relatively inexpensive, rapid, of little discomfort for the patient. However diathermy coagulation makes histological study impossible. Using cold cup biopsy allows the complete removal of the lesion with a sample of the surface muscle layer.

The objectives of this study were to evaluate the possibility of complete removal of small single primary and recurrent bladder tumors with a correct histopathological staging, the recurrent and progression rate, the tolerability of the procedure done with local anesthesia and its cost effectiveness.
Materials and Methods: A total of 105 patients with single primary or recurrent Ta-T1 bladder tumors < 1 cm were treated by urethrocystoscopy and tumor removal in an outpatient setting. Seventy two out of 105 patients were male and 33 females. The mean age was 63.6 years. Thirty five out of 105 patients had primary while 70/105 had recurrent tumors. Eighty three out of 105 patients (80%) with primary (35) or recurrent (48) tumors received urethro-cystoscopy with tumor removal by cold forceps biopsy, deep biopsy of tumor bed and fulguration of peritumoral area and tumor base. Twenty two out of 105 (20%) patients were treated by fulguration alone (4 Laser). Urethral jelly with Lidocaine was the only anesthesia use in all patients. Tumor diameter varied from 3 to 10 mm. Twelve primary tumors were 10 mm in diameter. Staging and grading: 33/35 primary were TaG1-2, 2/35 T1G3.41/70 recurrent were TaG1-2, 6 were T1G2 and 1 had an univerted papilloma of the bladder neck. Ten out of 83 patients received adjuvant chemo-immunotherapy after tumor removal.
Results: Histological examination revealed muscle in the specimen of 58/83 patients (70%). Thirty three out of 35 primary tumors had muscle in their specimens. The mean follow-up was 36 months. Recurrence rate was 27%. Two out of 105 patients (8%) progress to > T1 and had cystectomy. The procedure was well tolerated by patients except for 1 case who required spinal anesthesia. Mild disuria was registered in approximately 25% of the patients while 5/105 had subsequent gross hematuria requiring re-hospitalization. The cost of the outpatient procedure was compared with the cost of the same procedure done routinely in the ward. In the outpatient setting biopsy and fulguration costed 130 Euro compared to 1548 Euro for the same procedure performed in the hospital. Every procedure had a money gain of 1.218.00 Euro.
Conclusions: Outpatients endoscopic treatment of single small superficial Ta-T1 bladder tumor without anesthesia is feasible, well tolerated and safe. A correct pathological staging can be obtained in 70% of cases. The 3-year recurrence rate was 27%. It is cost-effective.

UP.120
Improving Compliance of Single Post-Operative Dose of Mitomycin C after Transurethral Resection of Bladder Tumour Using an Intervention Bundle
Stroman L, Tschobotko B, Mensah E, Ellis D, Kaneshayogan H, Mazaris E
St. Mary's Hospital, London, UK

Introduction and Objectives: European Association of Urology (EAU) guidelines suggest that patients with non-muscle invasive bladder cancer undergoing transurethral resection of bladder tumour (TURBT) should receive a post-operative instillation of intravesical chemotherapy such as mitomycin C. Adherence may be reduced by factors such as pharmacy restrictions on delivery of chemotherapy to theatre suite, lack of awareness of guidelines by surgeon and inadequately trained staff to administer. This study aims to audit the induction of Mitomycin C in a tertiary referral centre against EAU guidelines, create an intervention bundle to overcome obstacles preventing administration and prospectively re-audit.
Materials and Methods: All patients that underwent TURBT over a 12-month period were analysed to audit mitomycin C administration. Information was taken from operative notes, inpatient notes and post-operative medication charts. An intervention bundle including pre-operative delivery of mitomycin C by surgical team, proforma placed pre-operatively in operation notes and induction of mitomycin C post-operatively by trained surgeon or nurse specialist was introduced. Prospective re-audit data was collected over a 6-month period following intervention bundle using the proforma.
Results: Sixty-four patients underwent TURBT from 1st March 2012 to 28th February 2013 prior to intervention bundle. Fifteen (23%) were given mitomycin C post-operatively within 24 hours. Reasons why mitomycin C was not given were documented in 8 cases. Mitomycin C was documented to be not available for 3 patients, contraindicated in 4 patients and prescribed but not given to 1 patient. Forty-one patients had no documented reason why mitomycin was not given. All patients were booked for check flexible cystoscopy. Twenty-three (35%) patients were correctly managed within the EAU guidelines. Thirty-one patients underwent TURBT from 1st July 2013 until 31st December following induction of intervention bundle. Twelve (39%) patients were given mitomycin C. Contraindications were documented for 16 patients; three had no reason documented why not given. All patients were booked for flexible cystoscopy. Administration of adjuvant chemotherapy was increased to 90% in line with EAU guidelines.
Conclusion: A pathway for induction of mitomycin C may help to overcome barriers preventing the administration of post-operative adjuvant chemotherapy.

UP.121
The Risk of Recurrence for cT1G3 Bladder Tumor after a 5-Year Disease Free Status Period
Palou J, Gavrilov P, Emiliani E, Gausa L, Gaya J, Rodríguez O, Peña J, Ochoa C, Rosales A, Villavicencio H
Fundació Puigvert, Barcelona, Spain

Introduction and Objectives: Due to the high risk for recurrence and progression, European guidelines recommended to perform a long life follow- up in high grade no-muscle-invasive bladder tumors (NMIBT) .There are only a few studies that have assessed the evolution of grade III NMBT after a 5-year free recurrence period. It has been previously reported that the recurrences rate is higher during the first two years after the initial treatment. The objective of this study was to analyze the incidence and recurrence after a 5-year disease free period in a cohort of high grade NMIBT (T1G3).
Materials and Methods: We conducted a retrospective study including 146 patients with NMIBT cT1G3 with/without CIS associated treated with BCG. The mean age was 64.9 years and median follow-up 86.8 ± 42 months. There was CIS associated in 65.1% of the cases. The recurrence rate, evolution and current disease status at 1, 2, 3, 4, 5 and >5 years intervals follow-up were analyzed.
Results: There were 56.2% of the patients free of tumor after 5-years follow-up. About 89% of all recurrences were developed during the first three years increasing to 99.8% after a 5-year control period. There was recorded more than 5 years follow-up for 112 patients. Sixty eight of them had no recurrences during the first five years. Only one patient recurred after being free of disease after 5-year follow-up (0.6%).
Conclusion: The incidence of recurrence in patients with NMIBT cT1G3 after a 5-year disease free period is low. After this free recurrent period, it could be reasonable to use less invasive diagnostic tests in this group of patients to have a correct cancer control, avoiding unnecessary and costly explorations.

UP.122
In-Hospital Outcomes and Costs of Transurethral Resection of Bladder Tumor in the Aging Society
Nakagawa T[1], Sugihara T[2], Yasunaga H[1], Azuma T[1], Suzuki M[1], Fujimura T[1], Fukuhara H[1], Nishimatsu H[1], Kume H[1], Homma Y[1]
[1]*The University of Tokyo, Tokyo, Japan;*
[2]*Cleveland Clinic, Cleveland, USA*

UP.121, Table 1.

Year	1	2	3	4	5	>5
Overall recurrence (%)	23.3	31.5	39	41.1	43.2	43.8
Recurrence distribution (%)	53.1	71.9	89.0	93.8	99.8	100

Introduction and Objectives: The incidence of bladder cancer increases along with aging. Our aim was to analyze the impact of aging on in-hospital outcomes and costs in transurethral resection of bladder tumor (TURBT).
Materials and Methods: We evaluated data from 45,898 patients in 844 hospitals who underwent TURBT for bladder cancer between 2007 and 2012, using the Diagnosis Procedure Combination database in Japan. The cases were divided into 4 groups according to the chronological age: <70, 70-79, 80-89 and >90 years old. Logistic regression analyses were conducted to determine the concurrent effects of aging, comorbidities, cancer stage and other factors on various in-hospital outcomes and costs.
Results: The number of patients in each group (<70, 70-79, 80-89 and >90) were 17,252 (37.6%), 16,595 (36.2%), 10,971 (23.9%) and 1,080 (2.4%), respectively. The overall in-hospital mortality and in-hospital mortality within 30-days post-TURBT were 0.08% (38 patients) and 0.04% (20 patients), respectively. These numbers increased significantly with aging (p<0.001). Blood transfusion rate (1.9%, 872 patients), pLOS (median 6 days, [IQR 4-8]), and total costs (4692 US dollars, [3774-5946]) also increased significantly in the order listed above. In logistic regression analyses, patients in the advanced age groups (70-79, 80-89, and >90 year-old) were at significantly higher risk of blood transfusion, prolonged pLOS, and elevated costs, compared with patients in <70 year-old group. Patients in 80-89 and >90 year-old groups were at significantly higher risk of 30-day mortality than patients in <70 year-old group.
Conclusion: More than a quarter of patients undergoing TURBT were 80 or older. Although the in-hospital mortality was extremely low, it increased significantly in the patients older than 80. Furthermore, advanced age was significantly associated with higher transfusion rates, longer pLOS and elevated total costs. TURBT will be a surgery with high risk and high cost in aged patients.

UP.123
The Evaluation of the Risk Factors for Bladder Cancer Recurrence after Transurethral Resection (TURBt) in Chinese Population

Na R[1], Liu S[1], Wu Y[1], Zhang N[1], Xu J[2], Jiang H[1], Ding Q[1]
[1]Fudan Institute of Urology and Dept. of Urology, Huashan Hospital, Fudan University, Shanghai, China; [2]Center for Cancer Genomics, Wake Forest School of Medicine, Winston-Salem, USA

Introduction and Objectives: The risk factors of bladder cancer recurrence after transurethral resection of bladder tumor (TURBt) were poorly understood, especially in Chinese population. This study evaluated the potential risk factors of recurrence based on a Chinese population.
Materials and Methods: A total of 432 cases that received TURBt procedure in our institute from 2001 to 2013 and with completed follow-up information (from onset to first recurrence) were recruited in this study. Clinical information such as age, gender, chief complains, pathology information, time to recurrence, the information of post-operative instillation of chemotherapy, etc, were collected.
Results: One hundred and thirty out of 432 patients (30.1%) were at the age of ≤60, 118 (27.3%) were at the age of 60-70, 184 (42.6%) were at the age of ≥71. Only seventy out of 432 (16.2%) were female. The number of lesions, the medication of post-operative instillation chemotherapy and the pathological classification (benign, low grade or high grade papillary urothelial carcinoma) were significantly associated with recurrence and stratified time to first recurrence (≤12 months vs. >12 months, ≤24 months vs. >24 months) (Table 1). The size of the largest lesion was a significant risk factor for time to first recurrence (not stratified, P=0.023 in univariate analysis, P=0.044 in multivariate linear regression analysis). In the multivariate logistic regression analysis, only the pathological classification was significantly associated with recurrence (P=0.036) and stratified time

UP.123, Table 1. The evaluation of different factors that were considered as potential risk-factors for Bladder tumor recurrence after TURBt

	Recurrent	Not recurrent	P-value	Time to First Recurrent					
				≤12 m	>12 m	P-value	≤24 m	>24 m	P-value
Age, Mean±SD (years)	66.92±12.58	67.75±14.19	0.63	67.76±12.88	67.05±14.22	0.75	67.69±12.99	68.06±14.62	0.86
Chief complain									
-Asymptom, n (%)	14 (21.2%)	52 (78.8%)	0.49	6 (10.0%)	54 (90.0%)	1	11 (22.9%)	37 (77.1%)	0.42
-With symptom, n (%)	65 (17.8%)	301(82.2%)		39 (11.5%)	301 (88.5%)		50 (17.5%)	235 (82.5%)	
Size*, Mean±SD (cm)	2.82±1.59	2.91±2.14	0.77	3.24±1.68	2.75±2.00	0.20	3.13±1.60	2.76±2.06	0.28
No. of Lesion, Median (25%-75% quartile)	1 (2-4)	1 (1-2.25)	**0.032**	1 (2-4)	1 (1-2)	0.1	1 (2-4)	1 (1-2)	**0.004**
Medication**									
-THP or EPI, n (%)	36 (19.3%)	214 (80.7%)	**0.0012**	19 (7.9%)	221 (92.1%)	**0.018**	29 (14.4%)	173 (85.6%)	**0.011**
-Others, n (%)	32 (29.4%)	77 (70.6%)		17 (17.5%)	80 (82.5%)		23(27.7%)	60 (72.3%)	
Immediate post-operative instillation of chemotherapy									
-Yes, n (%)	15 (12.4%)	106 (87.6%)	0.43	11 (9.6%)	103 (90.4%)	1	13 (15.1%)	73 (84.9%)	0.85
-No, n (%)	34 (15.7%)	180 (84.3%)		18 (9.2%)	178 (90.8%)		25 (14.1%)	152 (85.9%)	
Continued regular post-operative instillation of chemotherapy***									
-Yes, n (%)	53 (18.1%)	240 (81.9%)	0.89	29 (10.3%)	252 (89.7%)	0.39	41 (17.0%)	200 (83.0%)	0.34
-No, n (%)	26 (18.7%)	113 (81.3%)		16 (13.4%)	103 (86.6%)		20 (21.7%)	72 (78.3%)	

*Size: the diameter of the largest lesion;
**Medication: the chemotherapy medications that were used in post-operative instillation
*** Continued regular post-operative instillation of chemotherapy: the follow-up schedule in China is the same as mentioned in US or European guidelines.

to first recurrence (P=0.021 for ≤12 months vs. >12 months and P=0.005 for ≤24 months vs. >24 months).
Conclusion: The number of lesions, the pathological classification and the size of the largest lesion might be considered in clinical practice to individualize the follow-up protocol. Epirubicin and Pirarubicin (Bacille Calmette-Guerin is not approved for bladder cancer in China) might be considered prior to other chemotherapy medications in post-operative instillation of chemotherapy.

UP.124
Half Dose BCG for Intravesical Immunotherapy in Non Muscle Invasive Bladder Cancer Using Different BCG Stains
Mihály Z[1], Dobrotă F[1], Mihály O[2], Juravle I[1], Bungărdean C[3], Gherman V[1], Coman I[1]
[1]Dept. of Urology, Cluj-Napoca Municipal Clinic Hospital, Cluj-Napoca, Romania; [2]Dept. of Anaesthesia and Intensive Care, Cluj County Clinic Hospital, Cluj-Napoca, Romania; [3]Dept. of Pathology, Cluj Municipal Clinic Hospital, Cluj-Napoca, Romania

Introduction and Objectives: Intravesical Bacillus Calmette-Guérin (BCG) immunotherapy is now considered as the treatment of choice for intermediate and high-risk non muscle-invasive bladder cancer (NMIBC). Low accesibility in purchasing and even the absence of the two mainly used BCG stains, required us to use a third BCG stain for a period.
Materials and Methods: In a prospective observational study 40 patients with intermediate and high-risk NMIBC underwent adjuvant intravesical Bacillus Calmette-Guerin instillation therapy after a complete TUR-BT. Patients received the Southwest Oncology Group (SWOG) regimen, with six weekly instillations of half dose BCG, 3 mo rest, and three further weekly instillations of half dose BCG. Maintenance therapy with three weekly instillations at 6, 12, 18, 24, 30 and 36 months. Three different BCG stains were used.
Results: Fourthy patients were included, complete response rate at the first control (recurrence free cystoscopy at 3 months after start of treatment) was 100% in the first 35 patients with two different BCG stains. Based on a median follow-up of 39 month, no BCG-refractory (progression in stage or grade by 3 mo after first cycle of BCG) and no BCG-resistant (recurrence or persistence after 3 mo after the induction cycle) patients were observed in the first 35 patients. At one year no tumor recurrence or progression was observed. With the third BCG stain three of the five new patients become BCG-resistant. None of the patients receiving intravesical therapy stopped treatment do to toxicity.
Conclusions: Bacillus Calmette-Guerin maintenance with half dose BCG proved effective. Complete response rate with half dose intravesical BCG immunotherapy were similar to those with complete dose from literature. Although it is a small number of patients may not all products on the market have similar efficacy in the treatment of NMIBC.

UP.125
Trying To Achieve a 3-Year Maintenance BCG Programme for High-Risk Superficial Bladder Cancer: How Much Pain for How Much Gain?
Amer T[1], Evans S[2], Kobialka K[3], Kynaston H[3], Hughes O[3]
[1]Ayr Hospital, Ayr, Scotland, UK; [2]Bath Hospital, Bath, UK; [3]University Hospital Wales, Cardiff, UK

Introduction and Objectives: The EORTC-GU group has demonstrated that 3-year maintenance BCG reduces recurrences in high-risk patients versus a 1-year programme but not progressions or deaths. The aim of this study was to determine completion rates, average number of cycles completed and indications for stopping 3-year maintenance BCG in a UK patient population.
Materials and Methods: Prospective cohort review of patients starting a maintenance BCG programme for high grade superficial bladder cancer between 01/2006 and 01/2011 who declined or were deemed unfit for primary cystectomy. Outcome measures: What percentages of patients completed induction, started maintenance cycles and completed full programme? Average number of cycles completed by the whole cohort. Indications for stopping maintenance BCG: intolerance (local or systemic), resistance, recurrence, progression or co-morbidity.
Results: Demographics: 150 patients (81% male) were identified. Mean age was 73 years with 26% of patients being aged 80 or over. What can patients complete? Ninety two percent of patients completed induction and overall 78% started the first maintenance cycle. Excluding a small number of patients who are still in progress only 10% (n=14) of the cohort have been able to complete the full 3-year maintenance programme. Those patients who stopped maintenance completed a mean of 3 maintenance cycles.
Conclusion: In this UK cohort we observed only a small percentage of patients being able to complete full 3-year maintenance. Twenty five percent of the cohort was over the age of 80 and this patient group is only likely to rise in the future. On average our patients were able to complete a 1-year programme and given the recent EORTC data this seems a realistic compromise of oncological treatment and tolerance.

UP.126
Collins Loop En Bloc Resection (CLebR) for Accurate Staging of Primary Non-Muscle Invasive Bladder Cancer: Early Experience
Rodolfo H[1], Castaldo L[1], Pasini L[1], Seveso M[1], Taverna G[1], **Ferro M**[2], Bottero D[2], Puppo P[3], de Cobelli O[2], Graziotti P[1]
[1]IRCCS Humanitas, Milan, Italy; [2]IEO, Milan, Italy; [3]Ospedale Sanremo, Sanremo, Italy

Introduction and Objectives: A primary aim of transurethral resection of bladder tumors is to determine the depth of invasion or clinical stage. Transurethral resection is a stochastic procedure subject to variations in tumor type, surgical technique and pathological evaluation. Exact pathological staging of bladder cancer is crucial for determination of further treatment. One limiting factor is the surgical 'incise and scatter' technique that might contribute to tumour recurrence. We present initial results with using a Collins loop (with a cutting current) en bloc resection (CLebR) of bladder tumours for treatment and accurate staging of solitary transitional cell carcinoma of the bladder.
Materials and Methods: April 2011 - February 2013, 67 patients (48 male – 19 female with non-muscle-invasive bladder cancer (NMIBC) underwent transurethral en bloc resection using a Collins Loop. Tumor size ranged to 0.5-45 mm and multifocality was present in 6% of cases. En bloc resection was applied on all of the tumours. On 59 of the 67 patients, a re-resection was performed after 6 weeks. The bladder wall is incised around the lesion using a Collins loop, starting from apparently 'normal' mucosa surrounding the base and then extending through the subepithelial connective tissue, muscularis mucosae and muscularis propria strata. The resected 1-piece specimen was grasped with a loop electrode and retrieved. After bladder tumor resection the resected base was observed carefully to assess perforation and bleeding. When the tumor size was greater than 3 cm, excision of the lesion could be easily achieved by mean of a resectoscope with a 5 mm working channel. After resection, the lesion is grasped with the forceps and retrieved with the resectoscope. All cases of high-risk NMIBC underwent second-look after 30-45 days.
Results: Pathology reported urothelial carcinoma with low grade stage Ta, T1 high –grade and T2 high-grade respectively in 38 (56.7%), 23 (34.3%), 6 (8.9%). All of the resected specimens provided detrusor muscle, no uncontrollable bleeding, perforation or other serious complications were observed. To date, with a mean follow-up of 16.5 months, the recurrence rate in patients with NMIBC is 13.5%.
Conclusion: CLebR has been proven safe and effective for both, treatment and pathological staging of NMIBC; therefore could be an appropriate tool for accurate staging with possibly lower scattering potential for the assessment and treatment of patients with NMIBC. The

objective advantage of accurate pathological examination (identification of microfocal invasion of lamina propria or of muscular wall, surgical margins assessment) is associated with a substantial safe technique. Long-term data and larger dataset of cases are necessary to demonstrate an advantage in terms of recurrence or progression.

UP.127

Impact of a Dedicated Teaching Program on Quality Outcomes of White Light TURBT

Hurle R[1], Castaldo L[1], Pasini L[1], Seveso M[1], Taverna G[1], **Ferro M**[2], Naselli A[3], Bottero D[2], Puppo P[4], de Cobelli O[2], Graziotti P[1]
[1]Div. of Urology, Istituto Clinico Humanitas (IRCCS), Milan, Italy; [2]Div. of Urology, European Institute of Oncology, Milan, Italy; [3]Div. of Urology, Istituto Clinico humanitas Mater Domini, Castellanza, Italy; [4]Div. of Urology, Ospedale Civile, Sanremo, Italy

Introduction and Objectives: To assess the impact of a dedicated teaching program on the quality outcomes of TURBT.
Materials and Methods: Patients with NMIBC, who had undergone complete first resections were registered in a prospectively maintained database from 1998-2010 at the department of Urology Humanitas Gavazzeni Bergamo Italy. From 2005, surgeons, juniors and seniors, underwent a dedicated training program with the aim to improve the quality outcomes of TURBT, 1) presence of detrusor muscle in the specimen, 2) Cis detection rate, 3) complication rate (namely clinically significant bladder perforation or bleeding), 4) 3 months recurrence rate or persistence of disease after reTUR. A multivariate logist regression was performed for each outcome, the variables included in the analysis were experience of surgeon (senior or junior), lesion dimension (< or > 3cm), single or multiple lesion, low or high grade disease, Ta or T1, surgeon submitted or not to the teaching program.
Results: A total of 427 patients were registered in the database, 199 from 1998 to 2004, before the introduction of the teaching program, and 228 from 2005 to 2010. In regard to the incidence of detrusor muscle, Cis detection, complications and recurrence, the rate before and after the teaching program were respectively 118/199 (59%) and 187/228 (82%), 12/199 (6%) and 35/228 (15%), 63/199 (32%) and 61/228 (27%), 38/199 (19%) and 15/228 (7%). Results of the multivariate analysis were summarized in Table 1.
Conclusions: The teaching program had a favorable, independent, statistically significant impact for each of the outcome examined except for the recurrence/persistence of disease.

UP.128

Active Surveillance Protocol NMIBC

Hurle R[1], Castaldo L[1], Pasini L[1], Seveso M[1], Taverna G[1], **Ferro M**[2], Bottero D[2], Puppo P[3], de Cobelli O[2], Graziotti P[1]
[1]Div. of Urology, Istituto Clinico Humanitas (IRCCS), Milan, Italy; [2]Div. of Urology, European Institute of Oncology, Milan, Italy; [3]Div. of Urology, Ospedale Civile, Sanremo, Italy

Introduction and Objectives: To report our experience with a select group of patients with low-risk tumors included in an observation and monitoring program after the diagnosis of recurrence.
Materials and Methods: We performed a prospective cohort study in patients diagnosed with recurrent, non muscle-invasive bladder cancer (NMIBC) maintained under an active surveillance protocol. Inclusion criteria were: small (<10 mm) papillary, asymptomatic tumor with negative urinary cytology was found on follow-up cystoscopy in patients who had previous resections of NMIBC (Stage pTa, pT1a), grade 1-2, bladder tumors, and number of tumors <5. No symptomatic patients or those with carcinoma *in situ* or grade 3 tumors were included. All patients included in the observation group were closely monitorated with cytology and flexible cystoscopy every 3-4 months. All pathologic studies were performed by a single experienced uropathologist and fully dedicated cytologists.
Results: The data from 48 patients (63 active surveillance events) were analyzed. The mean patient age was 69.8 years. The median follow-up was 33.6 months. Pathologic characteristics before observation were pTa in 81.1%, Stage pT1a in 18.9%, grade 1 in 77.1%, and grade 2 in 22.9%. The median time patients remained in observation was 12.7 months. 89.5% of the patients did not experience progression in stage and 86.8% in grade. None of the patients experienced progression to muscle-invasive disease. The patients who discontinued the observation period and who underwent transurethral resection are those who have had an increase in the number and/or size of the lesions, symptoms (mainly hematuria), or if the surveillance urine cytology findings were positive for malignancy.
Conclusions: Active surveillance protocol is reasonable in patients presenting with small, recurrent papillary bladder cancer after resection of low-grade Ta T1a tumor(s). Many surgeries can be spared, and the risk for tumor progression in these patients is minimal. Whenever a significant change in tumor morphology or size is noted, the patient should be referred for a standard transurethral resection of the tumor.

UP.129

The Efficacy of Solifenacin for Prevention of Catheter Related Bladder Discomfort after Transurethral Resection of Bladder Tumor in Nonmuscle Invasive Bladder Cancer Patients: A Prospective, Randomized, Multicenter Study

Chung J[1], Seo H[2], **Ha H**[3], Park S[4], Kim J[5], Park

UP.127, Table 1. Multivariate logistic regression findings

	Incidence of muscle in the specimen	Cis detection rate	Complications rate (bleeding or perforation)	Recurrence/persistence disease rate
	Odds rations, 95% CI (p)	Odds rations, 95% CI (p)	Odds rations, 95% CI (p)	Odds rations, 95% CI (p)
Senior surgeon	2.3497, 1.4724 - 3.7499 (0.0003)	0.5770, 0.2583 - 1.2888 (0.1798)	0.5580, 0.3028- 1.0285 (0.0615)	0.3596, 0.2257- 0.5729 (0.0000)
Lesion greater than 3cm	0.4249, 0.2452 - 0.7363 (0.0023)	1.1742, 0.5103 - 2.7019 (0.7056)	1.5820, 0.7873 - 3.1790 (0.1976)	2.3999, 1.4101 - 4.0842 (0.0013)
Multiple lesion	0.5572, 0.3327 - 0.9332 (0.0262)	1.2746, 0.5902 - 2.7524 (0.5368)	0.8998, 0.4504 - 1.7975 (0.7649)	2.4387, 1.4960 - 3.9757 (0.0003)
High grade tumor	0.3969, 0.1674 - 0.9409 (0.0359)	134.9510, 33.2884 - 547.0901 (0.0000)	1.2734, 0.4362 -3.7172 (0.6584)	0.7915, 0.3375 - 1.8563 (0.6584)
T1 tumor	3.1190, 1.2559 - 7.7461 (0.0143)	0.2085, 0.0663 - 0.6558 (0.0073)	1.1678, 0.3914 - 3.4844 (0.7810)	2.2201, 0.9480 - 5.1994 (0.0662)
Teaching program	3.7029, 2.2997 - 5.9621 (0.0000)	4.2944, 1.8261 - 10.0989 (0.0008)	0.3005, 0.1578 - 0.5724 (0.0003)	0.6825, 0.4307 - 1.0814 (0.1038)

H[6], Sohn D[7], Kim D[2], Choo J[2], Chang S[2]
[1]Dept. of Urology, Kosin University Hospital, Busan, South Korea; [2]Dept. of Urology, National Cancer Center, Koyang, South Korea; [3]Dept. of Urology, Pusan National University Hospital, Busan, South Korea; [4] Dept. of Urology, Yangsan Pusan National University Hospital, Yangsan, South Korea; [5]Dept. of Urology, Catholic University Hospital, Incheon, South Korea; [6] Dept. of Urology, Korea University Hospital, Seoul, South Korea; [7] Dept. of Urology, Catholic University Hospital, Seoul, South Korea

Introduction and Objectives: To evaluate the incidence of catheter-related bladder discomfort (CRBD) and efficacy of solifenacin in preventing CRBD after transurethral resection of bladder tumor (TUR-BT) in nonmuscle invasive bladder cancer patients.
Materials and Methods: Our prospective, randomized, multicenter trial enrolled 111 patients undergoing elective TUR-BT under general anesthesia with nonmuscle invasive bladder cancer. Patients were divided into two groups: solifenacin 5mg (Group S) and control (Group C). Among the patients included in the study patients, 84 completed study patients were analyzed. Group S (n=41) received solifenacin 5mg orally the day before, the day of the operation and the next day and Group C (n=43) received usual care. After TUR-BT patients were catheterized with a Foley catheter (mainly 18Fr) and the balloon was inflated with 10 ml distilled water. The CRBD was assessed at 1hr and 2hrs after operation in a recovery room and a general ward, respectively. Severity of CRBD was graded with a simple four-step severity scale: no pain; mild pain (revealed only by interviewing the patient); moderate (a spontaneous complaint by the patient) and severe discomfort (agitation, loud complaints and attempt to remove the Foley catheter). Pain was assessed during 3 days starting 6hrs after TUR-BT using a VAS. Standardized postoperative analgesia administered via a patient-controlled analgesia system. Foley catheter was removed at 3 days later after TUR-BT and checked uroflowmetry and postvoiding residual volume.
Results: As shown in Table 1, the incidences and severities of CRBD at 1hr and 2hrs were no differences in 2 groups ($p>0.05$). Overall VAS scores were no differences in 2 groups ($p>0.05$). However, VAS score of 2 days after TUR-BT was lower significantly ($p=0.041$). None of the patient receiving solifenacin had severe discomfort or voiding difficulty in postoperative period.
Conclusion: The incidence of CRBD at 1hr and 2hrs after TUR-BT in nonmuscle invasive bladder cancer patients was 76.7% and 72.1%. The incidence was similar with previous study. Pretreatment of solifenacin 5 mg did not reduce the incidence and severity of CRBD after TUR-BT in nonmuscle invasive bladder cancer patients.

UP.130

Urinary Dysfunction in Patients with HTLV-1 Associated Myelopathy

Feizzadeh K. B[1], Etemadi M[2], Esmaili H[3], Amiri Tehrani Zadeh M[4]
[1]Endoscopic and Minimally Invasive Surgery Research Center, Kidney Transplantation Complications Research Center, Ghaem Medical Hospital, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; [2]Dept. of Neurology, Ghaem Medical Hospital, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; [3]Dept. of Epidemiology, Ghaem Medical Hospital, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; [4]Ghaem Medical Hospital, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: HAM/TSP is one of the endemic diseases of Khorasan region of IRAN. Many of these patients, beside various neurological presentations, especially in motor system, suffer from urinary problems caused by neurogenic bladder dysfunction. Quantative description of the bladder function in these patients needs various clinical and para clinical assessments including urodynamic studies. Materials and Methods: In this study 50 patients were evaluated from the point of neurological and urological symptoms, in the form of some questionnaires. Therefore, 10 people among them, who had urinary problems and tend to do urodynamic assessments were chosen and

UP.129, Table 1.

	Group S (n=41)		Group C (n=43)		p value
CRBD at 1hr (n (%))					
mild	22		19		0.728
moderate	8		12		
severe	1		2		
total	31	(75.6%)	33	(76.7%)	0.903
CRBD at 2hrs (n (%))					
mild	22		21		0.303
moderate	4		8		
severe	0		2		
total	26	(63.4%)	31	(72.1%)	0.395
VAS (mean±SD)					
at 6hrs	2.12±1.31		2.86±1.91		0.054
at 1day	1.49±1.03		1.91±1.43		0.336
at 2days	1.07±0.91		1.67±1.58		0.041
at 3days	0.73±0.78		1.10±0.97		0.528
Qmax (ml/sec) (mean±SD)	15.19±7.84		18.94±13.84		0.095
Voided volume (ml) (mean±SD)	190.39±113.30		192.24±107.22		0.905
PVR (ml) (mean±SD)	27.99±28.98		35.10±42.21		0.504
Used analgesics (ea)	1.74±2.15		2.21±2.44		0.53

para clinical evaluations like urinary system ultrasonography, urea, creatinine, urine analysis, urine culture and urodynamic studies including, uroflowmetery, cystometery and electromyography were performed.
Results: Forty six patients (92%) out of 50 had urinary problems and 17 (34%) had sexual dysfunctions. Frequency (78.34%) and urgency (39.67%) had the most, and true incontinence (8.69%) had the least prevalence in urinary symptoms. Among the 10 patients under urodynamic study, 70%, 60% and 50% had detrusor instability, sphincter-detrusor dyssynergia and decreased bladder capacity.
Conclusion: Clinical and para clinical findings, all confirm detrusor hyperactivity and spastic neurogenic bladder in patients with HAM/TSP.

UP.131
Pilot Study of a Self-Management Program for Lower Urinary Tract Symptoms in Men
Jacobsen S[1], Wallner L[2], Emberton M[3], Avila C[1], Xiang A[1], Coleman K[1], Loo R[4]
[1]Kaiser Permanente Southern California, Pasadena, USA; [2]University of Michigan, Ann Arbor, USA; [3]University College London, London, UK; [4]Southern California Permanente Medical Group, Downey, USA

Introduction and Objectives: Lower urinary tract symptoms (LUTS) remain a significant burden on the quality of life of aging men. A recent trial in the United Kingdom suggested that a self-management program delivered in a classroom setting could have results superior to those achieved with usual care, without the side effects and expense of pharmacologic or surgical treatment. We sought to pilot test the program in a large, integrated managed care organization in the US (Kaiser Permanente Southern California-KPSC), in preparation for a trial of a personalized web-based version of the curriculum.
Materials and Methods: In collaboration with the UK team, we adapted the course materials for men in the US. Two groups of men with 7 and 6 men each were recruited from a urology practice embedded in KPSC. The curriculum was delivered in three sessions by a trained health educator working from the detailed instructor's manual. The curriculum included behavioral modification, medication management and bladder retraining. Prior to the first class session, men completed a questionnaire that elicited symptom frequency (International Prostate Symptom Score). At the conclusion, men were asked to complete an evaluation.
Results: Of the 13 men enrolled, 12 completed all items on the baseline questionnaire. At the conclusion of the program, 9 of the 13 men completed the class evaluation form. Of these, 8 (89%) reported that they were satisfied with their time in the program and 7 (78%) reported learning new skills and techniques to help manage their symptoms. Moreover, nearly two thirds of the men (66%) said that they would be willing to take the course if offered on-line. Comments from participants highlighted the need to tailor the goal setting to personal values/concerns and the importance of treating the intervention as prescribed therapy.
Conclusion: These data demonstrate the usefulness and willingness of men to participate in a self-management program for LUTS. Moreover, they suggest that a personalized, web-based version may be acceptable to men in this age group, providing an affordable and scalable approach to a large number of men.

UP.132
Comparative Study about the Long-Term Follow-up Results of Photoselective Vaporization for Benign Prostatic Hyperplasia Classified by the Volume of Prostate
Shim K, Seo Y, Heo J
Busan Veterans Hospital, Busan, South Korea

Introduction and Objectives: With use of 12 months follow-up data, this study was planned to compare the long-term efficacy and complications after photoselective vaporization of prostate (PVP) with potassium-titanyl-phosphate (KTP) laser for treatment of symptomatic benign prostatic hyperplasia (BPH), classified by volume of prostate.
Materials and Methods: We performed comparative analysis of 182 patients suffering with symptomatic BPH, who had undergone PVP using KTP laser, between June 2009 and December 2012. All patients were classified into three groups by the volume of prostate (<40cc; Group I, 40-60cc; Group II, >60cc; Group III). Clinical efficacy of each group was compared in terms of International Prostate Symptom Score (IPSS), quality of life (QoL) index, changes of maximum urinary flow rate (Qmax), postvoid residual urine (PVR) and complications. Student's t-test and ANOVA were performed for statistical analysis.
Results: Mean age of patients was 71.6±9.4. With respect to each of three groups, efficacy parameters (IPSS, QoL, Qmax and PVR) of each group were significantly improved ($p<0.05$). In Group I, preoperative parameters (IPSS, QoL, Qmax and PVR) were 22.8±3.7, 4.4±0.6, 8.7±3.0ml/sec and 30.1±17.3ml, respectively. And postoperative parameters were 10.5±2.6 ($p<0.001$), 2.0±0.7 ($p<0.001$), 18.0±5.4ml/sec ($p<0.001$) and 20.5±13.5ml ($p<0.05$), respectively. In Group II, preoperative parameters were 23.1±3.5, 4.6±0.7, 7.8±2.8ml/sec and 68.2±34.2ml, respectively. And postoperative parameters were 12.2±3.0 ($p<0.001$), 2.0±0.9 ($p<0.001$), 16.6±4.8ml/sec ($p<0.001$) and 25.6±12.8ml ($p<0.05$), respectively. In Group III, preoperative parameters were 23.5±3.1, 4.6±0.5, 7.9±2.9ml/sec and 145.0±102.0ml, respectively. And postoperative parameters were 16.6±4.7 ($p<0.05$), 3.2±1.1 ($p<0.05$), 17.0±5.0ml/sec ($p<0.001$) and 45.8±32.6ml ($p<0.05$), respectively. However, in Group III, postoperative IPSS and QoL index were lower than average value. Especially, items for frequency, nocturia and urgency of IPSS resulted in bad grades. The rate of complications in Group III were higher than those in Groups I and II, such as urinary retention, delayed hematuria and bladder neck contracture.
Conclusion: Despite the excellence of PVP with KTP laser, careful consideration must be given when operation is performed on patients with large prostate.

UP.133
Urinary Catheter Diary Is a Useful Tool in Tracking Causes of Non-Deflating Catheter Balloons
Okorie C, Nwigboji N, Nwaedu U
Dept. of Surgery, Federal Teaching Hospital Abakaliki, Nigeria

Introduction and Objectives: Urinary catheter diary is an important catheter usage documentation tool that is however rarely utilized in many medical facilities in the developing economies. This paper reports on introducing catheter diary towards identifying and resolving problem of non-deflating catheter balloons and other catheter related problems in a tertiary institution after an unusual high incidence of non-deflating catheters – 3 cases in one week.
Materials and Methods: From August 2013, for every patient undergoing catheterization in our weekly urology clinic, the following information was documented in designated registers: indication for catheterization, date of catheterization, Foley catheter brand, type of catheter material, catheter batch number, manufacturer, expiry date, encountered problems, date of next catheter change - which was every 3-4 weeks for scheduled catheter changes. The main outcome measures were to determine the cause/source of non-deflating catheter balloons as well as other catheter related problems.
Results: Over a 7 month period, for a total of 109 patients - 337 catheterizations (both new and scheduled changes) were done utilizing 8 different brands of Foley catheters: Agary-21, Zenith-68, Newlife-39, U-mec-92, LifeCare-46, Medihel-38, Hospibrand-27, Lifesign-6. All these Foley catheters were latex silicone coated and manufactured in China. Non-deflating catheter balloons were encountered in 5 out of 21 cases of the Agary brand and on early discontinuation of usage - we ceased encountering cases of non-deflating catheter balloons. The other encountered problem was inability to inflate catheter balloons noted in 8 out of 92 cases of the U-mec brand (usage has also been stopped).
Conclusions: Failure to deflate the balloon of a Foley catheter can be a very frustrating

experience both for the patient and the health care provider. Keeping a catheter dairy is a useful tool in tracking and solving such catheter related problems and should be encouraged in health care facilities where such is not done. Documented problems will further help catheter manufacturers improve on the quality of urinary catheters available in the market.

UP.134

Teaching All Male Patients with Acute Urinary Retention How to Self-Catheterise: Is It Worth It?

Kontos S, Lightbody B, Miller G, Dunn I
Monklands Hospital, NHS Lanarkshire, Airdrie, Scotland, UK

Introduction and Objectives: Acute urinary retention (AUR) is a common urological emergency. Intermittent self-catheterisation is a useful technique for both those failing, as well as those able to void after catheter removal (TWOC), and furthermore facilitates outpatient management of this problem.
Materials and Methods: Male patients presenting with uncomplicated AUR to our department are offered out-patient management, following discharge with an indwelling catheter and supporting items, and tamsulosin. An outpatient TWOC is arranged within seven days. Regardless of TWOC outcome patients are offered tuition in intermittent self catheterization. A random sample of 100 men attending in 2012 with AUR was audited with records obtained in 95. The aim was to confirm that this pathway management was safe and acceptable to patients.
Results: Age range 43-90 (median 70.5). Eighty seven out of 95 patients attending for TWOC were taught to perform ISC independently, four with help of a partner and 4 either could or would not perform ISC. Thirty two out of 95 continued until definitive treatment, 20/95, 14/95 and 7/95 were advised to discontinue ISC within one week, one month and three months respectively due to return of satisfactory voiding. Seven out of 95 continued long-term ISC and 5/95 chose to return to indwelling catheter. Eight patients were managed elsewhere. There were 11 minor complications.
Conclusions: ISC is a useful and acceptable treatment for men with AUR at the time of TWOC. It appears to allow some failing TWOC to return to spontaneous voiding, without the need for re-catheterisation.

UP.135

Prediction of the Resected Tissue Weight from Digital Rectal Examination and Total PSA before Transurethral Resection of Prostate

Tharwat M**, Mahmoud O**, Harraz A, El-Assmy A, Elshal A, Barakat T, Elsaadany M, El-Halwagy S, El-Nahas A, Ibrahiem E
Urology and Nephrology Center, Mansoura, Egypt

Introduction and Objectives: To determine the ability of PSA and digital rectal examination (DRE) to estimate resected tissue weight (RTW) before TURP.
Materials and Methods: A retrospective analysis of 983 patients who underwent TURP between December 2006 and December 2012 was conducted. The primary outcome is the RTW required for clinical improvement and is not associated with re-intervention. Age, PSA, body mass index (BMI) and DRE were correlated and modeled with RTW. DRE was defined as DREa (small vs. large) or DREb (small vs. moderate vs. large) according to surgeon report. Equations to calculate RTW was developed and tested using ROC curve analyses.
Results: Significant correlations were found between PSA ($r = 0.4$, $p < 0.0001$), DREa ($r = 0.38$, $p < 0.0001$), DREb ($r = 0.5$, $p < 0.0001$) and RTW while BMI and age showed weak correlations. Using PSA and DREb (model 3) showed significantly better ability to estimate RTW than using PSA and DREa (model 2) or PSA alone (model 1) based on ROC curve analyses. Equation developed by model 3 [RTW = 1.2 + (1.13 x PSA) + (DREb x 9.5)] had sensitivity and specificity of 82% and 71% for estimating RTW > 30 g and 84% and 63% for estimating RTW > 40 g, respectively.
Conclusions: PSA and DRE can predict RTW prior to TURP. The developed equations could help in surgical planning. Further studies are needed for validation.

UP.136

Prostate Cancer Is Not Associated with Lower Urinary Tract Symptoms in the Modern Era: Analysis of a Contemporary Propensity Score-Matched Cohort

Bhindi B, Kulkarni G, Hamilton R, Toi A, van der Kwast T, Evans A, Jewett M, Zlotta A, Trachtenberg J, Finelli A, Fleshner N
University Health Network, Toronto, Canada

Introduction and Objectives: Prostate cancer (PC) often enters in the differential diagnosis for lower urinary tract symptoms (LUTS), based on data from the pre-PSA era. Our aim was to determine if PC is associated with worse LUTS, with attention to cancer volume and grade, in a contemporary cohort.
Materials and Methods: Men diagnosed with PC on biopsy were matched 1:1 to controls with negative biopsy on age, prostate volume, and a propensity score predicting the probability of PC diagnosis. IPSS was compared between PC cases and controls using paired statistics, stratifying on grade and cancer volume (low volume: ≤3 cores or ≤1/3 of total number of cores involved, and no core with >50% cancer involvement; high volume: >50% of cores involved and >50% cancer involvement in ≥1core; intermediate volume: cancers not meeting low/high volume criteria). A sensitivity analysis was performed repeating the match for high volume cancers only, and excluding users of BPH meds.
Results: In our cohort of 1300 men, there were 275 (42.3%) Gleason 6 cancers, 313 (48.2%) Gleason 7 cancers, and 62 (9.5%) Gleason 8-10 cancers. There was no difference in IPSS between PC cases and matched benign controls (PC: median 6.5 (IQR=3-12) vs. controls: 7 (IQR=3-13), $p=0.34$; 90% power to detect a difference of 1.08 IPSS points). No stratum of volume or grade was significantly worse than matched controls. The sensitivity analysis yielded a matched cohort of 292 men. High-volume PC was again not significantly associated with IPSS (PC: median=6 (IQR=6-12) vs. controls: median=5.5 (IQR=2-10), $p=0.16$).
Conclusion: In our contemporary cohort of patients without prior PC diagnosis, newly diagnosed PC was not associated with worse LUTS as measured by the IPSS compared to benign controls. This suggests that PC is an uncommon cause of LUTS in the modern era. Outlet obstruction from cancer is likely a late event in the natural history of PC progression.

UP.138

Clinical and Immunochemical Significance of 34BE12(CK903) Application for Benign Prostate Hyperplasia

Papava V, Chovelidze S, Kochiashvili D, Khardzeishvili O**, Khuskivadze A**, Imedadze A, Iaralashvili N, Koberidze G
Tbilisi State Medical University, Tbilisi, Georgia

Introduction and Objectives: Our objective was to identify the peculiarities of high-molecular weight cytokeratin 34BE12(CK903) expression as one of the differentiating factors in glandular type of benign prostatic hyperplasia (BPH). Given the inability of routine histological methods to differentiate prostatic intraepithelial neoplasia (PIN) and Gleason score 2(1+1) adenocarcinoma from BPH, improvement of the techniques able to resolve this problem is increasingly important. The cytokeratin 34BE12(CK903) is synthesized by normal prostate basal cells. As high-molecular weight cytokeratin synthesis does not occur in cancerous cells, negative immunohistochemical reaction to 34BE12(CK903) is regarded as one of the markers of malignization.
Materials and Methods: We studied a total of 35 formalin-fixed paraffin embedded samples, 25 from transurethral resection of the prostate (TURP) and 10 from open adenomectomy. We used anti-α-smooth muscle actin and anti-34BE12(CK903) monoclonal antibodies to identify smooth muscle cells and basal cells, respectively. The HE and Van Gieson's picrofuchsin stained adenomectomy samples showed difference between glandular nodes by form and development of the glands, their secretory

and basal epithelium, and morphofunctional properties of smooth muscle and fibrous components. The TURP samples were dominated by fibrovascular and α-smooth muscle actine-positive smooth muscle elements.
Results: According to histological patterns, the following variants were identified: 1. benign glands of normal structure; 2. glands with widespread epithelial atrophy; 3. glands with partial atrophy (combination of atrophic and non-atrophic changes); 4. glands with excessive basal cells, i.e. basal cell hyperplasia; 5. glands with secretory cell (acinous cell) excess; 6. high-grade PIN and adenocarcinoma. Benign cell glands were relatively rare. Their lumen was lined with two layers of cuboidal basal and columnar or cuboidal secretory epithelium. The 34BE12(CL903) cytokeratin was expressed in all basal epithelial cells. The lumen was surrounded with a thin layer of collagen fibers further transforming into abundant circular smooth muscle.
Conclusions: Based on the characteristics of 34BE12(CL903) expression in basal cells, several variants of glandular BPH were identified: benign glands with normal structure, glands with widespread epithelial atrophy, glands with partial atrophy, glands with excessive basal cells, and glands with excessive acinous cells.

UP.139
Urinary Retention following Male Lower Limb Arthroplasty
Sharaf A[1], Bliebleh S[2], Hawkyard S[2]
[1]City Hospitals Sunderland, Sunderland, UK; [2]Scarborough General Hospital, Scarborough, UK

Introduction and Objectives: Acute postoperative urinary retention is a common complication after lower limb arthroplasty, up to 38% of the 200,000 patients in the UK every year. After the recent establishment of an Enhanced Recovery Programme, we took the opportunity to audit retention in the above group, and assess whether the International Prostate Symptom Score (IPSS) and other patient related factors could predict the likelihood of patients developing urinary retention after lower limb arthroplasty and if the Enhanced Recovery Programme has an effect.
Materials and Methods: One hundred, consecutive male patients undergoing elective lower limb arthroplasty were prospectively followed through their inpatient stay. Preoperative IPSS were completed for all. Preoperative drug treatment and past lower urinary tract surgery was documented. The type of anaesthesia, analgesia and volume of per operative fluid was recorded, and duration of surgery noted.
Results: The average age was 68 years. Twelve percent of men developed urinary retention post operatively, which is on the low side of incidences quoted in the literature (10-38%). Age, IPSS, and operative time, were not different in the 2 groups. Length of stay was prolonged by 36 hours for those men developing retention, and often necessitated re-attendance for trial without catheter.
Conclusion: Was our clinical impression so wrong, or has ERP reduced the incidence? Are there other predictive factors that may allow us to target an "at risk" group with pre-emptive alpha blockers or alternative interventions? Postoperative retention cannot be easily predicted and increases the length of stay and patient morbidity.

UP.142
The Prevalence of Metabolic Syndrome in BPH
Nikoobakht M, Dialameh H, Hashemi Aghdam A, Sharifi A
Urology Research Center, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran

Introduction and Objectives: Benign prostatic hyperplasia (BPH) is the most common non-malignant prostate disease with high prevalence in older men which can significantly affect the health of these individuals. Despite the high importance, the exact mechanism is still not clear, although recent studies discussed a possible link between metabolic syndrome and its components, and BPH. Today metabolic syndrome has become prevalent. Its prevalence increases with aging and it is one of the most important co-morbidities in patients with BPH. We examined the prevalence of metabolic syndrome and each of its components, and their relationship with prostate volume in patients with BPH.
Materials and Methods: This cross-sectional study has been held for 3 years on all patients with BPH who have been admitted to the Urology Department of Sina Hospital from March 2009 to August 2012. A total number of 240 patients, ranging from 50 to 80 years old with BPH were enrolled in the study. Height, weight, BMI, fasting insulin level, prostate volume and serum PSA level and components of the metabolic syndrome including waist circumference measurement and TG, HDL, fasting blood sugar and blood pressure has been examined. The number of people with three or more components of the metabolic syndrome and the incidence of each component of metabolic syndrome and its possible association with prostate volume has been examined. Men with clinically proven metabolic syndrome but without presentation of BPH, set as control group.
Results: The overall prevalence of metabolic syndrome in our patients was 57.5% (n=138) and the prevalence of each components were as follow: high fasting blood sugar 75.3%, high blood pressure 70.6%, Low HDL 44.7%, high TG 40% and waist circumference (over 94cm) 35.3%. The Prevalence of hyperinsulinemia was 9.4%. Significant Positive correlation between prostate volume and BMI, weight, waist circumference and number of metabolic syndrome components ($P < 0.005$) was obtained. By placing the regression test of prostate volume as the dependent variable and controlling for age, height, weight and fasting insulin levels, significant positive linear relationship between metabolic syndrome ($P < 0.05$) and number of its components ($P < 0.05$) with prostate volume was obtained.
Conclusion: Our results suggest a high prevalence of metabolic syndrome in patients with BPH who were studied in our study. High fasting plasma glucose and hypertension presented as the most common components of metabolic syndrome among these patients. The increasing level of metabolic syndrome components (regardless of which component it is), and the presence of metabolic syndrome itself are risk factors for increased prostate volume among BPH patients.

UP.143
Transurethral Enucleation of the Prostate with Bipolar vs. Trans-Urethral Resection of the Prostate in Saline
Gamaleldeen A**, Abdallah M**, Badeldin M
Menoufia University Hospital, Shibin Elkom, Egypt

Introduction and Objectives: The aim of the study is to evaluate the efficacy and safety of transurethral enucleation of the prostate with bipolar (TUEP) vs. transurethral resection of the prostate in salin (TURIS).
Materials and Methods: A retrospective review of Menoufia university Hospital experience of 60 patients suffering from benign prostatic hyperplasia with prostate volumes more than 60 gm. Twenty eight patients treated with transurethral enucleation of the prostate with bipolar (TUEP) and 32 treated with transurethral resection of the prostate in salin (TURIS). Preoperative assessment of all patients regarding prostate size, hemoglobin level, flowmetry and IPSS score was done, Perioperative assessment of resection time, changes in hemoglobin , tissue resected weight was done. Postoperative follow-up of all patients up to 12 months was done including IPSS score, flowmetry and late complications.
Results: Both groups were matched for age, preoperative prostate weight, IPSS score and uroflowmetry results. Patients underwent enucleation of the prostrate showed significant less change in hemoglobin after surgery than patients with TURIS (1.21 vs. 1.8 g/dl; $P< 0.001$). No statistically significant difference between both groups regarding changes in IPSS score, Catheterization time, Hospital stay, late complications and Uroflowmetry results. The resection weight was statistically significant higher in Enculation group (mean tissue weight TUEP vs. TURIS was 98.2 vs. 73.5 gm).

Conclusions: Transurethral enucleation of the prostate with bipolar is safe, economic and comparable to transurethral resection of prostate in saline. It has better results in resction tissue weight and less blood loss.

UP.144

Outcomes and Complications after Holmium Laser Enucleation of the Prostate in Anticoagulated Patients with Benign Prostatic Hyperplasia

Ichikawa T[1], Nishiyama Y[2], Kurashige T[2], Hayata S[2], Sako T[1], Yokoyama S[1], Shiotsuka Y[1], Yamamoto Y[1], Ishito N[1], Takamoto H[1]
[1]Kurashiki Medical Center, Kurashiki, Japan; [2]Tottori Municipal Hospital, Tottori, Japan

Introduction and Objectives: Holmium laser enucleation of the prostate (HoLEP) is a less invasive procedure with excellent hemostatic properties. We evaluated outcomes and complications after HoLEP in anticoagulated patients with benign prostatic hyperplasia (BPH).
Materials and Methods: From July 2007 to October 2013, 578 patients with symptomatic BPH underwent HoLEP. Of these patients, 73 with a mean age of 76.2 years who were on chronic oral anticoagulation therapy underwent the surgery without oral anticoagulant withdrawal. These patients included 29 (39.7%) on aspirin, 14 (19.2%) on warfarin potassium, 4 (5.5%) on clopidogrel sulfate, 2 (2.7%) on ticlopidine hydrochloride, 4 (5.5%) on other anticoagulants, and 20 (27.4%) on 2 or more anticoagulants. Operation time, estimated blood loss, weight of enucleated tissue, catheterization time, and postoperative complications were evaluated. Peak urinary flow, post-void residual urine, International Prostate Symptom Score (IPSS), and quality of life score were also assessed before and after surgery.
Results: HoLEP was performed successfully in all patients. Mean operation time was 69.1 minutes (range 22 to 207), mean estimated blood loss was 75.6 ml (range 3 to 468), and mean weight of enucleated tissue was 21.9 g (range 0.5 to 102.5). Average catheterization time was 2.3 days (range 1 to 10). There were no major operative or postoperative complications, and no blood transfusions were required. Complications within 30 days included temporary urinary retention in 8 patients, urinary tract infection in 4, and delayed bleeding in 2. One of the two cases with bleeding required reoperation for hemostasis. After surgery, significant improvements were seen in peak urinary flow, post-void residual urine, IPSS, and quality of life score.
Conclusion: HoLEP is a safe and effective surgical modality for patients on anticoagulant therapy.

UP.145

Is the Residual Urine Volume after Uroflowmetry Compatible with Spot Residual Urine Volume?

Okcelik S**, Soydan H**, Ates F, Malkoc E, Yilmaz O, Karademir K
GATA Haydarpasa Training Hospital, Uskudar, Istanbul, Turkey

Introduction and Objectives: To determine if residual volume after uroflowmetry with spot residual volume compatible.
Materials and Methods: We determined male patients with LUTS. Patients' age, PSA, prostate volume, spot residual volume, voided volume, maximum flow rate, average flow rate and the residual volume after uroflowmetry were recorded. If there is more than 50cc difference between the residual volume after uroflowmetry and spot residual volume, we accept they are incompatable. If lower than 50cc, we accept they are compatible. We divided the patients into three groups. Group 1: Patients whose residual volume after uroflowmetry compatible with spot residual volume. Group 2: Incompatible (Residual volume after uroflowmetry is higher than spot residual volume). Group 3: Incompatible (Spot residual volume is higher than residual volume after uroflowmetry). We compared these three groups.
Results: Seventy seven patients were assessed. Mean age was 66.63 (25-87), prostate volume was 48.69 (15-126) cc, voided volume was 242.39 (56-579) cc, Qmax was 13.15 (5-40) cc/sec, Qave was 6.41 (2-18) cc/sec, spot residual volume was 31.26 (0-250) cc, residual volume after uroflowmetry was 77.93 (0-350) cc. There was a significant difference between the residual volume after uroflowmetry and spot residual volume (p=0.002). When we determined the patients whose spot residual volume was lower than 50cc, mean age was 65.78, prostate volume 48.15cc, voided volume 254.68cc, Qmax 13.65cc/sec, Qave 6.78cc/sec, residual volume after uroflowmetry 67.43cc. When we determined the patients whose spot residual volume higher than 50cc, mean age was 69.31, prostate volume 51.75cc, voided volume 196.25cc, Qmax 11.12cc/sec, Qave 5.00cc/sec residual volume after uroflowmetry 108.44cc.P rates of age, prostate volume, residual volume, voided volume, Qmax and Qave was in turn 0.281, 0.445, 0.026, 0.060, 0.072, 0.034 (Mann-Whitney U test). We saw that there was no parameter that affects the spot residual volume (linear regretion analysis). When we analysed the correlations, there was a negative correlation between spot residual volume and Qave (r = -0.220; p=0.029). When we compared the compatible group with incompatible group, there was a significant difference for prostate volume and voided volume between the groups.
Conclusion: Residual volume assessment is more accurate if measurement is done momentary. Spot residual volume with residual volume after uroflowmetry much more incompatible if postate size and voided volume is higher.

UP.146

Urinary PSA: Specific Marker of BPH and BPH Progression

Pejcic T[1], Acimovic M[1], Dzamic Z[1], Hadzi-Djokic J[2]
[1]Clinical Center of Serbia, Clinic of Urology, Belgrade, Serbia; [2]Serbian Academy for Sciences and Arts, Belgrade, Serbia

Introduction and Objectives: Urinary prostate specific antigen (uPSA) represents the specific marker of benign prostatic hyperplasia (BPH) and BPH progression.
Materials and Methods: From 2001 to 2011, uPSA was determined in 265 patients with benign prostate conditions. All the patients underwent the measurement of total prostate volume (TPV), PSA and uPSA. For the determination of uPSA, the patients collected the first 50 mL of the first morning urine. Within this group, 48 patients who were receiving alpha-blockers (αB) were followed-up during four years.
Results: In the whole group, the average patient's age was 64.9 ± 10.6 years, the average PSA was 2.19 ± 1.95 ng/mL, the average TPV was 37.03 ± 20.9 mL and the average uPSA was 190.4 ± 183.9 ng/mL. The patients with TPV < 31 mL had significantly lower uPSA (119.3 ± 124.5 ng/mL) than the patients with TPV ≥ 31 mL (255.5 ± 204.9 ng/mL), (p<0.0001). In the group αB, after four years, the average increase of TPV, PSA and uPSA were 17.8%, 39.8% and 96.1%, respectively.
Conclusion: The level of uPSA can be used as additional marker of BPH and BPH progression.

UP.147

Day-Case Holmium Laser Enucleation of the Prostate (HoLEP) at Bedford Hospital: An Initial (Learning Curve Period) Experience

Alnajjar H, Patel H, Khan A, Sharma H, Chaudry A
Bedford Hospital NHS Trust, Bedford, UK

Introduction and Objectives: In June 2012, HoLEP was introduced as an alternative surgical treatment option for patients with bladder outflow obstruction secondary to benign prostatic enlargement (BPH) at Bedford Hospital. Patients, who deemed surgically and anaesthetically suitable, were offered day case HoLEP. Our objective was to assess the safety and efficacy of our new day-case HoLEP service at Bedford Hospital during the learning curve stage of the surgeon.
Materials and Methods: We carried a prospective case series study of all patients who underwent HoLEP from June 2012 to January 2014.

This period was considered as the surgeon's learning curve period. Patients with no anaesthetic concerns were offered day-case HoLEP. The following parameters were recorded prospectively; length of hospital stay, pre-operative and postoperative International Prostate Symptom Score (IPSS), prostate size (pre-op.), uroflowmetry and successful trial of voiding (TOV). Complications were also recorded.
Results: A total of 50 HoLEP's were performed in the time period. The mean age was 73.3 years. The average theatre time was 113 minutes. The average pre-op IPSS was 21, TRUS volume 80.6 mls (160-40), Qmax 8.3 ml/s, PVR 676 mls. Five patients had catheter *in-situ* pre-operatively due to urinary retention, 4 of whom passed their TWOC successfully. The average post-op IPSS was 5.8, Qmax 25.4 ml/s, PVR 75.7ml. Mean day of TWOC was 2.8 days and mean length of hospital stay of 0.84 days (21 day cases). Two patients developed bladder neck stenosis. None of the patients required blood transfusion.
Conclusion: HoLEP is a safe and efficacious bladder outflow surgery from our case series. Our complication rates were low, despite of the learning curve. In selected cases it can be managed safely as a day case procedure.

UP.148
Complications following TURP over an 18-Month Period at a Urological Tertiary Referral Centre Using the Clavien-Dindo Classification System
Stroman L, Ellis D, Tooley R, Mazaris E
St. Mary's Hospital, London, UK

Introduction and Objectives: Transurethral resection of the prostate (TURP) is still regarded as the gold standard for the treatment of lower urinary tract symptoms in patients with benign prostatic obstruction in prostates between 30 and 80 mL. Patients undergoing TURP are at risk of developing post-operative complications including bladder neck stenosis, urethral stricture, UTI, TUR syndrome and retrograde ejaculation. The clavien-dindo classification system is a standardised and validated tool designed around the level of management required to successfully manage the complication. This study aims to evaluate the rate and severity of post-operative complications of patients undergoing TURP in a urological tertiary referral centre over an 18-month period.
Materials and Methods: Data was analysed from all patients undergoing TURP at St Mary's Hospital, London from 1st May 2012 until 30th November 2013. Post-operative patient data was gathered using operative notes, inpatient notes, electronic discharge summaries, urology specialist nurse follow-up and urology clinic follow-up appointment documentation.
Results: Sixty-six men underwent TURP over an 18-month period. Mean age was 70 (range 52 – 87). No intraoperative complications took place. A total of 8 post-operative complications took place in 6 (9.5%) patients. Four patients suffered grade I Clavien-dindo classifaction complications – urinary retention requiring fluids, failed trial without catheter and retrograde ejaculation (n=2). Three grade II complications were seen (UTI, epidydimo-orchitis, LRTI) which required antibiotics. One patient suffered a grade III-b complication and required urethrotomy for post-operative stricture. No patients suffered grade IV or V complications.
Conclusions: TURP is safe and effective method on managing LUTS. Post-operative complication rates at St Mary's Hospital were relatively low when compared to literature.

UP.150
Daycase Laser Prostatectomy: Early Experience
Manley K, Banerjee S, Lipp A, Rochester M
Norfolk and Norwich University Hospital NHS Foundation Trust, Norwich, UK

Introduction and Objectives: Day case holmium laser enucleation of the prostate (HoLEP) has been previously described in the literature as a safe and efficacious management for small volume prostates. Performing HoLEP as a day-case procedure can confer significant benefits for patient satisfaction and reduced length of stay (LOS). The aim of this study was to review a new day-case service for HoLEP at a single centre where day-case procedures were performed regardless of prostate size, in order to compare results with those in the literature. Complications and outcomes were investigated, and reasons for increased length of stay (LOS) identified. In addition, a cost-effectiveness evaluation was performed.
Materials and Methods: All patients undergoing HoLEP over the first 14 months of a new day-case service at a single centre (September 2012 – December 2013) were included. Patients under 90 years old with no anaesthetic contraindications were listed as day-cases regardless of prostate size. LOS, specimen weight, reasons for failed discharges and 3-month post-operative IPSS scores were recorded, and a cost-effectiveness analysis of HoLEP vs. TURP performed.
Results: A total of 153 HoLEPs were performed in this period. Of those, 71.2% (n=109) were intended as day-cases. Median age was 70 years (range 44-89), mean specimen weight: 35.8g (range 1-190g), and mean surgical time: 57.9 min. Of intended day-case patients, 75% (n=81) were successfully discharged on the day of surgery. For unsuccessful day-cases, reasons for delayed discharge included: intraoperative factors: 21.4% (n=6); need for irrigation: 25% (n=7); outlying ward: 3.6% (n=1); medical/anaesthetic complications: 17.9% (n=5) and social factors: 25% (n=7). Readmission rate for successful day-cases was 4.9%. Mean IPSS score at 3 months was 4.25 (range 0-17).
Conclusion: Day-case HoLEP is a feasible, safe and effective treatment regardless of age or prostate size, with satisfactory post-operative symptom scores. The results of this study compare favourably with those in the published literature in terms of readmission rates and complications. As day-case HoLEP attracts an enhanced tariff plus savings from reduced LOS, developing a day-case pathway for HoLEPs is financially appealing – in this case a saving of £22,195 over 109 cases. Ensuring adequate home-care post-discharge and a designated day-case patient pathway could improve day-case rates.

UP.151
How Minimally Invasive Is Trans-Urethral Needle Ablation of the Prostate?
Chakrabarty A[1], Gupta A[2]
[1]Urologic Clinics of North Alabama PC, Huntsville, USA; [2]Dept. of Urology, VMMC and Safdarjang Hospital, New Delhi, India

Introduction and Objectives: Transurethral resection of prostate (TURP) has been the gold standard for surgical treatment of BPH with LUTS. Alternative in-office, minimally invasive therapies (MIT) such as Trans Urethral Needle Ablation (TUNA) have emerged as less invasive options with acceptable efficacy. The present study focuses on the safety, tolerability and satisfaction with TUNA procedure and its efficacy in the short term.
Materials and Methods: From April 2012 to March 2013 all undergoing in-office TUNA procedure by a single surgeon were evaluated for intra and post procedure discomfort, as per Visual Analog Scale; short term outcomes as per improvements in the pre and post procedure AUA symptom score and Patient Global Impression of Improvement (PGI-I) after 3 months of the procedure; and for any complication, graded by the modified Clavien system. All procedures were done with local and regional anesthesia with light oral sedation as per the surgeon's protocol.
Results: There were a total of 36 patients with a mean age of 64.6 years. Follow-up ranged from 6 to 18 months (Mean 199.78±151.77 days). Three were lost to follow-up after a successful trial of void. The mean AUA score and quality of life index decreased from 18.72±5.89 to 6.09±5.40 and from 4.08±1.13 to 1.18±1.21 respectively (both $p<0.001$). The average duration of catheterization were 2.92±2.39 days with 11 patients not catheterized. The discomfort observed during and after surgery was 3.00±3.00 and 2.97±2.52 out of 10 respectively. Grade 1 complications were reported in 6 patients (16.67%) and grade 2 in 1 patient. Patients were very satisfied with the surgery (PGI-I scale 1.93±0.83), with 88.89% patients ready to undergo the same procedure again if

needed. Two patients underwent a Greenlight laser TUVP, 3 and 7 months post TUNA for continuing symptoms.
Conclusions: TUNA can be safely performed in-office with acceptable morbidity, efficacy and a high patient satisfaction rate. Majority of patients can defer a more invasive surgical option at least short term. Effective preoperative patient preparation and a successful local and regional block is important for patient satisfaction and tolerability. Long term follow-up is needed to assess the durability of efficacy.

UP.152
The Effect of Acetylsalicylic Acid on Postoperative Anaemia after Transurethral Resection of Prostate and the Impact of Bipolar versus Monopolar Resection on Postoperative Sodium Serum and Haemoglobin: A Prospective Single-Center Study
Goris Gbenou M, Khedime S, Mendes M, Rashed S, Combe M, Lopez J
Dept. of Urology, Centre Hospitalier de Valence, Valence, France

Introduction and Objectives: To evaluate the impact of low dose aspirin therapy on decline of postoperative hemoglobin in patients undergoing transurethral resection of prostrate (TURP) and to compare the impact of two types of electrocoagulation in the decline of postoperative serum sodium and hemoglobin.
Materials and Methods: A single-center non-randomized study has been conducted in the department of urology of Valence Hospital between October 2012 and October 2013. Data from consecutive patients who underwent TURP for symptomatic BPH were collected prospectively. The inclusion criterion was: TURP for LUTS secondary to BPH and the exclusion criteria were palliative TURP for urinary retention in patients with prostate cancer and/or additional endoscopic surgery.
Results: A total of 104 patients were selected for the final analysis. Twenty-four patients (23%) did not discontinue their aspirin therapy because of cardiovascular comorbidities. The median age was 74 years ± 9.68 (49-89). Forty one patients (39%) underwent bipolar TURP and 63 patients (61%) were treated by monopolar TURP. The mean preoperative Hb and the average postoperative Hb were respectively 13.93 and 12.36 g/dl (p = 0.000). The means preoperative versus postoperative Hb were 14.04 versus 12.74 g/dl for monopolar TURP and 13.82 versus 12.33 g/dl for bipolar TURP groups, respectively (NS). In sub-group analysis, the means preoperative versus postoperative serum Na were 139.40 versus 138.44 mmol/l for monopolar TURP and 138.44 versus 138.00 mmol/l for bipolar TURP groups, respectively (NS). The mean preoperative serum sodium and the mean postoperative serum sodium were respectively 139.53 and 137.48 mmol/L (p = 0.000). The mean postoperative Hb in patients who have been continued aspirin therapy and those who did not have anti-thrombotic treatment were respectively 11.71 and 12.86 g/dl (p = 0.006). There were 2 cases of clinically significant anaemia and 1 case of significant hyponatremia in the monopolar group in contrast of 1 case of TURP syndrome in bipolar group. In multivariable regression, postoperative anaemia was positively associated with a continuing aspirin therapy (p = 0.034), the low preoperative Hb (0.000) and the age over 65 years (p = 0.008). The postoperative hyponatremia was related only to low preoperative serum sodium (p = 0.000).
Conclusion: This study provides further evidence that men undergoing TURP for BPH have postoperative anaemia and hyponatremia. Aspirin is a risk factor for postoperative anaemia.

UP.153
Prognostic Factors of Low Urinary Flow Rate after Transurethral Resection of Prostate
Kim B, Ha J, Jung W**, Park C**, Kim C
Keimyung University, Daegu, South Korea

Introduction and Objectives: Transurethral resection of prostate (TURP) is the gold standard treatment of benign prostatic hyperplasia (BPH) and gives high satisfaction to patients. However, postoperative low urine flow is commonly observed. We analyzed patients' characteristics according to post TURP uroflowmetry.
Materials and Methods: From January 2006 to December 2012, 191 patients who underwent TURP in our hospital were included in this study. Their age, diabetes mellitus, hypertension, a history of stroke, prostate volume, preoperative prostate specific antigen (PSA), International Prostate Symptom Score (IPSS), preoperative medication period, a history of acute urinary retention (AUR), the volume of resected tissue were reviewed. Patients were divided into two groups by post TURP Qmax lesser than 10ml/s. More than five points of irritative symptom score and more than four points of obstructive symptom score were defined as dominant.
Results: The mean age of the patients was 71 years old. There were 122 cases (63.8%) of diabetes mellitus, 134 cases (70.1%) of hypertension, and 78 cases (40.8%) of stroke were noted. Median prostate volume was 57gm (4-130); median PSA was 12.1ng/ml (0.2-1320). Irritative symptom dominant cases were 47 (24.6%) and obstructive symptom dominant cases were 94 (49.2%). There were 103 cases (48.1%) that had BPH medication history over six months before surgery. Eighteen cases (9.4%) had acute urinary retention previously. The mean volume of resected tissue was 11.1gm. Thirty eight cases (19.9%) of the patients had post TURP Qmax lesser than 10ml/s. They were older (p=0.040), had diabetes mellitus (p=0.042), had dominant irritative symptom score (p<0.01) and had no AUR history (p=0.043) in multivariate analysis. However, prostate volume, PSA, preoperative medication period, hypertension, stroke and volume of resected tissue were not related to post TURP Qmax lesser than 10ml/s.
Conclusion: The patients who had low urinary flow rate post TURP was 19.9%. We must be concerned about older age, diabetes mellitus, dominant irritative symptom score and history of acute urinary retention when planning TURP.

UP.154
Morbidity of Holmium Laser Enucleation of the Prostate (HoLEP) for the Treatment of Benign Prostatic Hyperplasia (BPH)
Choi S
Kosin University Hospital, Busan, South Korea

Introduction and Objectives: To evaluate morbidity of HoLEP in 380 patients undergoing holmium laser enucleation of the prostate (HoLEP) at our institution.
Materials and Methods: The author analysed the patients' demographic, peri-operative and follow-up data, and the complications during and after surgery. All procedures of HoLEP were done by a single surgeon.
Results: The mean patient age at the surgery was 67.5 (45-85), and the mean PSA was 3.7 ng/ml (0.4-19.4). Mean operation time was 77.6 minutes (range, 30-180). Mean prostate volume was 64.3 ml (range, 20-192) and mean resected tissue weight was 12.3 g (range, 2-83), with 20 (5.3%) patients diagnosed with adenocarcinoma. Mean catheter indwelling time was 2.7 day (1-6), and mean hospital stay was 3.2 day (1-7). The blood loss was minimal, only two patients (0.5%) required postoperative transfusions. No deaths, major complications (myocardial infarction or pulmonary embolism) or TUR syndrome episodes occurred. Intraoperative complication was minor capsular perforation (n=5, 1.3%). Postoperative complications were acute urinary retention (n=9, 2.4%), transient incontinence (n=17, 4.4%), urinary tract infection (n=6, 1.5%), urethral stricture (n=4, 1.0%) and bladder neck contracture (n=18, 4.7%).
Conclusion: HoLEP can be performed with minimal complication risks and blood loss.

UP.155
Bipolar Transurethral Resection of the Prostate: Is Blood Grouping Required?
Goonewardene S[1], Dickinson A[2]
[1]*Homerton University Hospital, London, UK;*
[2]*Plymouth Hospitals, Plymouth, UK*

Introduction and Objectives: Transurethral resection of the prostate (TURP) is the most common surgical treatment for benign prostatic hyperplasia (BPH) worldwide. Bipolar TURP has advantages such as shorter catheter indwelling times and hospital stays, and fewer bleeding

episodes without any risk of transurethral resection syndrome. We aim to analyse whether blood grouping is required for this surgery pre-procedure.
Materials and Methods: A retrospective audit of patient information was conducted, for 100 patients admitted under a single surgeon for bipolar TURP over three years. Details on demographics, surgical procedure, pre- and post-operative haematology, blood product ordering and usage were collected for patients admitted over a one year period. Results were analysed via percentages.
Results: Average was 74.8 years (range 52-92 years). A total of 96.4% of patients had complete resection of the gland; 100% had bipolar resection with complete haemostasis achieved post op; 12.7% had a high bleeding risk (on warfarin). One hundred percent were grouped and saved, but none required transfusion and no units were crossmatched. Transfusion index was 0 as was crossmatched to transfusion ratio. The average haemoglobin drop is 1.4. Average pre-operative INR 1.0, (range 1.1-2.7). Average length of stay was 2.4 days (range 1-5). Complications: UTI 5.4%, clots 5.4%.
Conclusions: We conclude pre-operative G+S is not required for bipolar TURP. We compare our results with other published data.

UP.156
Effect of Holmium Laser Enucleation of Prostate on Nocturia
Oh T[1], **Kwak K**[1], Ryu D[1], Bae Y[2], Choi S[3]
[1]Samsung Changwon Hospital Sungkyunkwan University, Changwon, South Korea; [2]Ulsan Jeil Hospital, Ulsan, South Korea; [3]Kosin University Gospel Hospital, Busan, South Korea

Introduction and Objectives: Nocturia is one of the most bothersome symptoms and the main predictors of symptoms in benign prostatic hyperplasia (BPH) patients with lower urinary tract symptoms (LUTS). We evaluated the change of nocturia and predictive factors for improvement after Holmium laser enucleation of Prostate (HoLEP) as the treatment of BPH.
Materials and Methods: A total 102 patients who underwent HoLEP for BPH between April 2010 and July 2013 were included in this retrospective study. All of them had the baseline and postoperative (6 weeks after HoLEP) International Prostate Symptom Score (IPSS), 3-day frequency-volume chart (FVC), and flowmetry. The efficacy of HoLEP was evaluated at 6 weeks postoperatively by use of IPSS and FVC. Improvement in nocturia was defined as a reduction of ≥50% in nocturia frequency compared with baseline.
Results: The median of total prostate volume, Prostate specific antigen (PSA), enucleation weight and enucleation ratio (enucleation weight/transitional zone volume) were 56.6ml (transitional zone: 33ml), 4.0ng/ml, 27gm, and 0.82gm/ml, respectively. All of them had at least 1 episode of nocturia and 88 men (86.3%) had 2 or more nocturia episode at baseline. Nocturia was significantly decreased from a baseline median of 4 to 2 episode at 6 weeks after HoLEP and improvement of nocturia was shown in 84 (82.4%) men. Of the baseline parameters, including age, total prostate volume, baseline IPSS and nocturia frequency and enucleation ratio, higher baseline nocturia frequency was associated with improvement of nocturia.
Conclusion: HoLEP for BPH significantly reduced nocturia in early postoperative period. The baseline nocturia frequency influenced improvement in nocturia.

UP.157
Intratrigonal Botulinum Toxin-A in Refractory Patients of Painful Bladder Syndrome/IC
Shimpi R
Div. of Urology, Uro-Andrology Clinic, Pune, India

Introduction and Objectives: PBS/IC is a distressing, chronic, severely debilitating disease characterized by urinary frequency and pelvic pain in absence of obvious bladder pathology. An increased number of nocioceptive sensory fibre receptor populations in the trigone have been shown in these patients. Botulinum Toxin-A (Botox) was shown to have analgesic properties (by blocking these nocioceptors) apart from the Detrusor muscle paralysis. The main objective is to assess the impact, efficiency, tolerability of Intra-trigonal injection of Botox upon bladder pain, urinary symptoms in PBS/IC patients who are refractory to Intravesical therapy and PPS.
Materials and Methods: Eleven patients in the age group of 32-50 with a mean of 48 years of PBS/IC treated between January 2009 and March 2011 are included in the present study. Clinical evaluation, laboratory evaluation has been done to rule out other bladder diseases. Baseline Cystometry was done in all the patients. 200 IU Botulinum Toxin diluted in 20 ml Normal saline was injected at 20 sites in the trigone excluding the orifices using a rigid, flexible cystoscope on OPD basis and were discharged with antibiotic prophylaxis. All the patients were followed-up at 1, 3, 6 months.
Results: All patients reported subjective improvement in the bladder symptoms. Urinary frequency decreased from 16.2 ± 4.1 to 7.9 ± 6.2 at 3 months and 9.4 ± 2.2 at a 6 months follow-up. Bladder volume for the pain increased from 40 ± 20 ml at baseline to 120 ± 28 ml at 3 months or 130 ± 32 ml at 6 months. The maximum cystometric capacity increased from 90 ± 35 ml to 270 ± 50 ml at 3 months and 325 ± 85 ml at 6 months. After 10 months, 2 patients showed worsening of the symptoms and on their request, patients were given re-injection of 200 IU Botox. One patient had a large PVR necessitating CIC once a day and the clinical improvement was for the mean duration of 10.6 months.
Conclusion: Intratrigonal injection of 200 IU Botox is safer, effective and relieves most of the distressing symptoms of PBS/IC, and can last for a mean of 10.6 months.

UP.159
What after Flexible Cystoscopy Guided Catheterization in Difficult Cases? One-Year Audit
Fung D**, El Hassan R**, Dixon S, Menezes P
Sunderland Royal Hospital, Tyne and Wear, UK

Introduction and Objectives: An increasing number of patients are discharged from geriatric medical wards with indwelling urethral catheter. Some routine catheter changes are unsuccessful requiring flexible cystoscopy guided change. The objective of this study was to determine what should be the ideal subsequent method of catheter change.
Materials and Methods: In this retrospective study, consecutive patients were identified in whom a change of catheter in the community had failed and required flexible cystoscopic guided catheterization in our unit for a one-year period from January 2012. Their case notes and electronic records were examined to establish how many of these patients were re-referred to our unit with further failed catheterization requiring cystscopic guided catheter changes.
Results: Fifteen male patients were identified to have cystoscopic guided catheter insertions. Ten (67%) catheters were initially placed for bladder outflow obstruction, 3 (20%) for neuropathic bladder and 2 (13%) as per specific post procedure indications. At the next catheter change, 7 (47%) were successful in the community; of these, 5 had bladder outflow obstruction and 2 had neuropathic bladder. Eight (53%) patients required cystoscopic guidance; of these, 5 had bladder outflow obstruction, 1 had neuropathic bladder and 2 were post procedure.
Conclusion: With the ageing population, an increasing number of patients are discharged from geriatric medical wards with a long-term urethral catheter, which requires regular change. Sometimes catheter changes require flexible cystoscopy guided catheter changes. In our audit, more than 50% required further cystoscopic guided changes; but they were all subjected to a distressing trial of change in the community. We should be offering better services to these patients by arranging routine flexible cystoscopy guided catheter changes, which would minimize distressing catheter attempts in the community. However, currently, without further research and audit, we are unable to select candidates who may benefit from regular cystoscopic change of catheter.

Perhaps the concept of 'catheter passport' for every patient with a catheter in the community should be widely adopted. This may go a long way in understanding the magnitude of associated problems.

UP.160

Efficacy of Holmium Laser Enucleation of Prostate according to Preoperative Patients' Characteristics: Prostate Size, Bladder Outlet Obstruction, Detrusor Overactivity and Detrusor Contractility

Ryoo H, Shin S, Sung H, Jeong J, Lee K
Sungkyunkwan University, Seoul, South Korea

Introduction and Objectives: Holmium Laser Enucleation of the Prostate (HoLEP) has been one of the standard therapy for surgical relief of benign prostatic obstruction. We evaluate the efficacy of HoLEP according to prostate size, bladder outlet obstruction (BOO), detrusor overactivity (DO), detrusor contractility and evaluate the factors influencing to success of HoLEP.
Materials and Methods: Patients that underwent HoLEP from 2009 to 2013 and completed a postoperative follow-up at least 6 months were included. Of these, medical records of 174 patients were reviewed. Preoperative evaluation included PSA, prostatic size, urodynamic study, and International Prostate Symptom Score (IPSS)/QoL. At postoperative 6 months, surgical outcome was evaluated with IPSS/QoL, maximum flow rate (Qmax) and post void residual urine (PVR). Based from estimation criteria suggested by Homma, treatment was considered successful if median value of efficacy score demonstrates more than 2. Patients were analyzed by prostate size (< 40ml, 40-80 ml, ≥ 80ml), BOOI (< 40, ≥ 40) DO (present or not), and BCI (< 100, ≥ 100). Multiple logistic regression analysis was used to find the predictors of success of HoLEP.
Results: The patients' mean age was 69.3 years. Preoperative Qmax was significantly low and PVR was high in the groups of BOOI ≥ 40. All parameters showed significant improvement at postoperative 6 months (IPSS; 21.7±6.6 to 6.8±5.2, QoL; 4.5±2.4 to 1.7±1.3, Qmax; 8.7±3.8 to 24.1±35.1, PVR; 107.7±111.0 to 25.6±24.3). Improvement of IPSS and PVR was more significant in a group of BOOI ≥ 40 compared to group of BOOI < 40. The overall success rate was 93.7%. Factors to predict success of HoLEP were degree of BOO and PedtQmax in univariate analysis and degree of BOO in multivariate analysis.
Conclusion: HoLEP improved LUTS and urine flow in most of the patients with BPO, irrespective of the pre-operative urodynamic and prostate size parameters. But, surgical outcome was more significant in patients with higher degree of BOO. These results will be useful to predict the effectiveness of HoLEP.

UP.161

One-Day Surgery in the Treatment of Benign Prostatic Enlargement with Thulium Laser: A Single Institution Experience

Carmignani L, Macchi A, Ani Bani M, Marenghi C, Ratti D, Finkelberg E, Bozzini G, Casellato S, Maruccia S, Picozzi S
Dept. of Urology, IRCCS Policlinico San Donato, Milano, Italy

Introduction and Objectives: Recently, different articles deal with the introduction of new surgical laser therapy for enlarge prostate gland causing obstructive symptoms. The objective of this study was to report the feasibility of performing in a one-day surgery the endoscopic surgical treatments for benign prostatic obstruction with the ThuLEP procedure.
Materials and Methods: From September 2011 to September 2013, we start a prospective study on patients who underwent ThuLEP in a one-day surgery. Perioperatively the primary outcomes measured included operative time, resected tissue weight, hemoglobin decrease, transfusion rate, postoperative irrigation and catheterization time, and postoperative hospital stay. Also the preoperatory and post-operatory IPSS score and an uroflowmetry performed at the 7th and 30th post-operatory days were recorded. All perioperative and postoperative complications were monitored.
Results: Fifty three patients performed the surgical treatment in one-day surgery. Seven patients continued anti-aggregant therapy with aspirin. Mean preoperative prostatic adenoma volume was 56.6 mL. Mean operative time was 71 min. The average catheter-time was respectively of 14.8 hours. The 7th day peak urinary flow rate improved from 9.3 to 17.42 ml/s (P < 0.001) and IPSS from 18 to 10,2 (P < 0.01). Patients were routinely discharged the same day of catheter removal. Complications were not recorded.
Conclusion: ThuLEP can be conducted safely as a one-day surgery procedure. This strategy results cost saving. ThuLEP shows a good standard outcomes considering flow parameters improvement, length of bladder catheterization.

UP.162

Holmium Laser Enucleation of the Prostate: The First 100 Cases, Experience of a Single Center

Claici D
Center for Urology and Laser Timisoara, Timisoara, Romania

Introduction and Objectives: Holmium laser enucleation of the prostate HoLEP is the most rigorously studied current option for the surgical management of the Benign Prostatic Hyperplasia (BPH). In randomized controlled trials it has been compared with TURP, open simple prostatectomy and photoselective vaporization of the prostate, and in all studies it has been found to be associated with superior outcomes – Lingeman 2011. We present the experience of a single center and a single surgeon with the first 100 cases of HoLEP.
Materials and Methods: We have acquired a Versapulse Holmium 100 W laser in June 2010. We subsequently started HoLEP for BPH and our 100th patient was treated in July 2013. All the procedures were performed by one consultant urologist. Efficiency of the procedure increased steadily from the first 20 cases to the last ones from 0.5gr/minute of tissue enucleated to 1-1.1 grams/minute. Consecutively the operating time decreased and the weight of tissue enucleated and morcellated increased. The largest amount of prostatic tissue that we have extracted was 147.9 grams, and the longest time for surgery was 3hrs and 45 minutes. The technique that I have used started with a classic three lobes approach and evolved to a two lobes approach after the first 25 cases or so. The two lobes technique allows for a swifter and quicker result while the three lobes technique is useful when confronted with a large median lobe. There were two patients in their 80-ties for which the entire procedure consisted of enucleating only the median lobe. The most challenging part was keeping the same plane of dissection, especially in the large glands.
Results: Postoperatively the main complain that we had encountered was represented by the storage symptoms mainly the urgency. We have treated those patients with antimuscarinic agents and lately with β3 adrenergic agonists. Stress incontinence was less bothersome – only 2 of the 100 patients complained of it. Three patients required additional urethral catheterization for failure to void two-three weeks after the procedure. The catheter was not left in place. We did not encounter any major intraoperative incident, nor did any of the patients need blood transfusions. The blood loss was minimal. A majority of the procedure were performed as one day surgery with the patients leaving the premises the same day.
Conclusion: HoLEP is a very safe and efficient surgical treatment for BPH. The initial investment is considerable and the learning curve is steep. Though, in my opinion, it can and probably will become the next "golden standard" of prostate surgery. A proper selection of the cases would help, with smaller glands in the beginning. Also a particular care should be given to keeping the same plane of dissection, especially at the apex. Lowering the laser output there would also reduce the postoperative urgency, which could be bothering.

UP.164

Holmium Laser Enucleation of the Prostate for Prostates ≥80 mL

Birring A, West A, Gowda B
James Cook University Hospital, Middlesbrough, UK

Introduction and Objectives: To examine the subgroup of patients treated with holmium laser enucleation of the prostate (HoLEP) for bladder outlet obstruction due to larger prostates (≥80 mL).
Materials and Methods: We analysed retrospectively all men with prostates 80 mL and over, who underwent HoLEP between February 2010 and October 2013.
Results: Out of a total of 213 HoLEP procedures, 86 patients were identified. The mean (range) age was 73 (57-87) years and the mean estimated prostate volume on transrectal ultrasound was 127 (80-300) mL. The most common indication for surgery was urinary retention in 53 patients (62%). Five patients had previously had a TURP with 1 also having a previous Greenlight laser prostatectomy. The mean operative duration was 116 mins (75-195), and mean enucleated tissue weight was 75g (23-179). There was complete enucleation of all lobes in 47 (55%) patients with the remaining 39 patients (45%) having the median (if present) and the larger of the two lateral lobes enucleated. Continuous bladder irrigation overnight was required in 11 patients (18%) post operatively. One patient required blood transfusion in the early postoperative period for persistent haematuria. Mean catheterization time was 22 hours (10-56), with a mean hospital stay of 1.3 (1-6) days. Three patients failed the initial trial of voiding; all patients were ultimately able to void following surgery and remain catheter-free. Among the early complications were epididymo-orchitis (3.5%), urinary tract infection (4.7%) and delayed haematuria (3.5%). Temporary postoperative stress urinary incontinence occurred in 4 patients (4.6%) and resolved in all by 6 to 8 weeks. Permanent stress urinary incontinence occurred in one patient (1.2%; 0.5% of total). Significant improvements were seen in patient symptom scores and voiding outcome parameters at early follow-up.
Conclusion: HoLEP can be performed on patients with very large prostates with acceptable morbidity, regardless of the indication for surgery. It is a particularly safe and effective treatment for men with larger prostates who present with urinary retention and may be the ideal surgical treatment modality for this subgroup.

UP.165
The Use of the 180W XPS 'GreenLight' Laser in the Management of Troublesome Lower Urinary Tract Symptoms and Urinary Retention in Men with Prostate Cancer
Jones J, Laird A, Lingard J, Riddick A, Cuttress M, Phipps S
Dept. of Urology, NHS Lothian, Western General Hospital, Edinburgh, UK

Introduction and Objectives: Despite considerable evidence supporting the use of 'Greenlight' Laser Prostatectomy (GLL) in men with benign prostatic hypertrophy (BPH), few reports exist of the use of 80W/120W GLL in men with prostate cancer, and none of the 180W XPS-GLL in this setting. Epidemiological studies illustrate 10% of men with prostate cancer will undergo transurethral resection of prostate (TURP) and experience poor functional outcomes, with high rates of treatment failure and incontinence. We reviewed the use of 180W XPS-GLL in men with prostate cancer in our institution to determine safety and efficacy.
Materials and Methods: From a prospectively maintained database, patients with diagnosed prostate cancer undergoing XPS-GLL between October 2010-2013 were identified. Notes were reviewed retrospectively for age, PSA, presenting symptoms, oncological management, IPSS/QOL scores, intraoperative details, complications and outcomes.
Results: A total of 38 patients were identified with a mean age of 74 years (53-89 years) and PSA of 16.5 (0.1-89). Sixteen (42.1%) patients presented with refractory urinary retention. Eight patients had previously undergone bladder-outflow surgery. The mean lasing time was 15:08 minutes and energy 114,331kJ, with all patients routinely catheterised post-procedure. Thirty two men underwent trial without catheter within 24 hours and initial success rate was 86.8%. Thirty-day complication rate was 18.4% (3 urinary-tract infections, 3 haematuria which did not require intervention and 1 pulmonary embolus in a patient with hormone refractory prostate cancer). Minimum follow-up was 6 months (6-34 months, median 24 months) and 89% of men remain catheter free. Six patients developed bladder-neck stenosis and 1 developed a urethral stricture, of which 6/7 had received radiotherapy. Two of these same patients later developed stress incontinence. Seven patients (18.4%) have undergone secondary procedures: 1 patient underwent a further TURP, 6 underwent bladder-neck incisions and 2 await assessment for artificial urinary sphincter.
Conclusions: To our knowledge, this is one of the first reported series of the use of 180W XPS-GLL in this setting and we have shown it to be effective at treating urinary retention and lower urinary tract symptoms in men with prostate cancer. As well short catheterisation and hospitalisation times, it has a favourable safety profile and is therefore an excellent alternative to 'channel' TURP.

UP.167
Holmium Laser Enucleation of the Prostate versus Laparoscopic Retropubic Simple Prostatectomy in Large Benign Prostatic Hyperplasia
Kim T[1], **Lee K[1]**, Lee W[2], Cho W[1]
[1]Dong-A University, Busan, South Korea;
[2]DIRAMS, Busan, South Korea

Introduction and Objectives: To evaluate the feasibility of laparoscopic retropubic simple prostatectomy (LRsP) by comparison with holmium laser enucleation (HoLEP) in cases of large prostate with regard to surgical efficacy and peri-operative outcomes.
Materials and Methods: A total of 23 benign prostatic hyperplasia (BPH) patients with prostate volume > 100 g, maximum flow rate (Qmax)<10 mL/s and international Prostate Symptom Score (IPSS) > 15 were randomized in the two study arms. Fourteen patients were performed by HoLEP and 9 by LRsP. All cases were assessed preoperatively and at 1, 3, 6 months after surgery by IPSS, Qmax, quality of life score (QoL) and post-voiding residual urinary volume (PVR). The prostate volume and prostatic specific antigen (PSA) level were measured at 6 month.
Results: There was no significant difference between the HoLEP and LRsP groups in patient age (70.2 years HoLEP vs. 72.4 years LRsP), prostate volume (108 cc vs. 112 cc), and weight of resected tissue (98 g vs. 102 g). There were significant differences in the mean operative time (188 vs. 126 minutes; P<0.001). Both surgical techniques resulted in postoperative improvement in symptom socres, peak urinary flow rate, and postvoiding residual volume (P<0.001). Blood transfusions were required in 0 HoLEP patients vs. 2 LRsP patients.
Conclusion: Both of HoLEP and LRsP were safe in large benign prostatic hyperplasia. LRsP entails significantly less operative time. The perioperative outcomes were not significant differences except blood transfusion rate.

UP.168
The Comparison of Intra-Operative Parameters between Modified Enucleation Technique and Three Lobe Technique of Holmium Laser Enucleation of the Prostate
Oh J, Kim T, Kim K, Chung K, Lee H, Kim C, Kim K, Jung H, Yoon S
Gachon University, Incheon, South Korea

Introduction and Objectives: Holmium laser enucleation of the prostate (HoLEP) has been known as a potentially new gold standard for treating benign prostatic hyperplasia (BPH). Recently, modified enucleation technique was introduced to facilitate learning HoLEP more easily than traditional three lobe enucleation technique. Our study is designed to assess the intra-operative feasibility of modified enucleation technique comparing three lobe technique.
Materials and Methods: We retrospectively reviewed consecutive patients' data who underwent HoLEP by two surgeons (TBK & JKO) from 2012 to 2014. Group 1 consisted of patients who underwent HoLEP using modified enucleation technique to manage BPH by a single surgeon (TBK). Group 2 consisted of patients who were performed HoLEP using three lobe technique by a single surgeon (JKO). We compared intraoperative parameters such as enucleation weight, enucleation time and

morcellation time and enucleated weight per enucleation time between two groups.
Results: A total of 158 patients were enrolled in this study (Group 1 = 60, Group 2 = 98). Between Group 1 and 2, mean age (±SD) was 68.52 (±6.20) and 68.06 (±9.40) years, respectively (p=0.714). Mean enucleated weight was 24.19 (±20.67) and 19.71 (±17.60) g (p=0.165). Group 1 showed significantly more enucleated weight per enucleation time than Group 2 (0.59 (±0.33) vs. 0.40 (±0.25) g/min) (p<0.001). However, there were no significant differences in enucleated weight per morcellation time between the two groups (2.37 (±1.32) vs. 2.53 (±2.08) g/min) (p=0.595).
Conclusion: Modified enucleation technique showed more efficient enucleation than previous three lobe technique, intraoperatively. However, long-term follow-up should be considered to assess the feasibility of modified technique for comparing post-operative outcomes between two techniques.

UP.169
Botulinum Toxin A Treatment Outcome of Interstitial Cystitis: 1-Year Follow-Up
Maeda Y, Hashimoto Y
Tokyo Women's Medical University Aoyama Hospital, Tokyo, Japan

Introduction and Objectives: In Europe and the United States, botulinum toxin type A (BTX-A) is approved to treat conditions like chronic migraine, excessive sweating, muscles spasms. BTX-A is currently being used in a number of urological conditions such as neurologic bladder, over active bladder and interstitial cystitis (IC). This study was designed to assess the efficacy of intravesical BTX-A in IC.
Materials and Methods: Patients were evaluated with Interstitial Cystitis Symptom Index (ICSI) and Problem Index (ICPI), Quality of life (QOL), Visual analog scale (VAS) 1, 3, 6, 9 and 12 months post operatively. Statistical analysis was performed using the Student *t* test, in which $P<0.05$ was considered statistically significant. BTX-A injection was performed 13 times for 11 patients. 100 U of Botox® (Allergan, Irvine, Calif; USA) was diluted in 10 ml 0.9% NaCl. Under local anesthesia and sedation, BTX-A was injected through a flexible cystoscope into 10~20 sites in the trigone and floor of bladder.
Results: The median patient age was 69 years (range 47 to 79). The study involved ten females and one male patient with IC. All were refractory to treatments and had symptoms that were severe enough. Every score was reduced after the treatment compared to before. ICSI, ICPI and QOL were improved statistically significant.
Conclusion: We injected BTX-A into the bladder wall for the treatment of intractable IC, which was safe and improved in symptoms of IC.

UP.170
Is Bipolar Transurethral Resection of Prostate Causing Less Delay Haematuria?
Ng C[1], Yee C[1], Chan C[1], Lee W[1], Tsui J[2], Teoh J[1], Wong J[1], Hou S[1]
[1]The Chinese University of Hong Kong, Hong Kong, China; [2]University of Hong Kong, Hong Kong, China

Introduction and Objectives: Bipolar resection of prostate has gained its' popularly among urologists due to its potential benefit of less TUR syndrome and also intra-operative bleeding. However, the effect of the technique on delayed haematuria after transurethral resection of prostate (TURP) was uncertain. Therefore, we would like to investigate the use of bipolar technique on delayed haematuria in a group of patients who underwent TURP by different approaches.
Materials and Methods: This was a retrospective study of 374 patients who had TURP in our institutes from June 2010 to August 2013. We defined delayed haematuria as any haematuria where the patient needed to seek medical advice. The patients received either one of the following 4 approaches of TURP (Group): (1) monopolar, (2) pure bipolar resection, (3) combined bipolar resection and vapourization, and (4) pure bipolar vapourization. The TURis® system (Olympus) was used for all bipolar procedures. Logistic regression analysis was used to identify predicting factors for delayed haematuria. Potential factors assessed include, age, prostate size, pre-operative PSA level, usage of antiplatelet / anticoagulation, usage of 5-alpha reductase inhibitors, surgical approaches etc.
Results: During the study period, the number of patients in the 4 groups was, 57 (15.2%), 153 (40.9%), 100 (26.7%) and 64 (17.2%) respectively. Except for younger patients' age in Group 1 and 4, other baseline parameters for the four groups were comparable. A total of 77 patients (20.6%) had delayed haematuria (presented from 1 week to 3 months) after discharged from hospital. The incidences of DH for the 4 Groups were 5 (8.8%), 34 (22.4%), 27 (27%) and 13 (20.3%) respectively. Logistic regression showed younger patient age (OR 0.95, 0.91-0.99) patient on antiplatelet / anticoagulation (OR 2.98, 1.33-6.66), TURP performed by pure bipolar resection (OR4.53, 1.53-13.45) and combined bipolar resection with vapourization (OR 3.72, 1.25-11.04) had statistically higher chance of having delayed haematuria. However, pure vapourization, when compared to monopolar resection, was not associated with increase in delayed haematuria.
Conclusions: Bipolar resection, with or without vapourization, was associated with higher chance of delayed haematuria after TURP. However, bipolar vapourization alone was not associated with increase in the complication.

UP.171
Short Stay Transurethral Prostate Surgery: A Randomized Controlled Trial Comparing Bipolar Transurethral Vaporization of Prostate with Monopolar Transurethral Resection
Ng C[1], Yee C[1], Lee W[1], Wong J[1], Chan C[1], Tsui J[2], Teoh J[1], Hou S[1]
[1]The Chinese University of Hong Kong, Hong Kong, China; [2]University of Hong Kong, Hong Kong, China

Introduction and Objectives: Transurethral resection in saline (TURis) bipolar vaporization of prostate is one of the major advances in surgical management of BPE. Our objective is to establish the safety and efficacy profiles of this technique compared with monopolar TURP, and to test the hospital stay efficiency of TURis vaporization.
Materials and Methods: It is a multi-center, double-blinded, prospective, randomized controlled trial. Men aged 50 to 75 years old were randomized into 2 arms: TURis bipolar vaporization and monopolar TURP. Intra-operative details, peri-operative parameters and post-operative functional outcomes were assessed after intervention. Only the surgeon in operating theatre and the person involved in randomization were aware of the type of surgery given. Follow-up with symptom score assessment, prostate volume measurement and uroflowmetry were performed at 3 months and 6 months.
Results: A total of 84 patients were randomized into each study arm with a mean age of 65.0 ± 5.6 years. TURis bipolar vaporization had a longer operative time than monopolar TURP (51.6 ± 24.5 mins versus 38.5 ± 20.3 mins; p<0.001). Post-operatively, TURis group achieved a shorter catheter time (33.6 ± 23.7 hours versus 40.8 ± 29.4 hours, p=0.013) and a shorter length of hospital stay (43.14 ± 18.79 hours versus 52.33 ± 30.58 hours, p=0.013). Post-operative dysuria score was higher in the TURis vaporization arm. There was no statistically significant difference between the 2 arms in terms of haemoglobin change and post-operative complication. No significant difference was observed in quality of life score and uroflowmetry at 3 months and 6 months.
Conclusions: TURis bipolar vaporization of prostate is a safe and comparable alternative to monopolar TURP. It leads to a reduction in catheter time and a reduction in the length of hospital stay. A longer follow-up is required for a more comprehensive assessment.

UP.173
European Registry Evaluating Management Practices of General Practitioners and Urologists and Pharmacological Treatment Outcomes in Patients with Lower Urinary Tract Symptoms Associated with Benign Prostatic Hyperplasia
Tubaro A[1], Berges R[2], **Speakman M**[3], de la

Taille A[4], Martínez-Piñeiro L[5], Patel A[6], Caris C[6], Witjes W[6]
[1]Sant' Andrea Hospital, Rome, Italy; [2]Pan Klinik, Cologne, Germany; [3]Taunton and Somerset Hospital, Taunton, UK; [4]CHU Henri-Mondor, Creteil, France; [5]Hospital Infanta Sofia, Madrid, Spain; [6]EAU Research Foundation, Arnhem, The Netherlands

Introduction and Objectives: Information on pharmacological management practices and outcomes in patients with LUTS/BPH treated in real-life is sparse. We collected data from 2175 males treated for their LUTS/BPH and evaluated its effects on symptoms, quality of life and sexual function.
Materials and Methods: Between February'10 and April'11, 2175 males, aged ≥50 years, were enrolled in 5 countries by GP's and urologists. Among those, 337 patients were not evaluable mainly because of missing questionnaires (8%); no pharmacological treatment (40%) or ineligibility (44%). A total of 575 untreated patients (UG) with an IPSS ≥8 and 1263 treated patients (TG) commenced pharmacological treatment and were allowed to stop or change the type of treatment. Visits took place at 6 (UG only), 12 and 24 months. Patients completed self-assessment questionnaires. The primary objective was to evaluate symptom persistence defined as IPSS ≥8 at 2 years.
Results: Patients in the UG and TGs started with the following treatments: 393 (68%) and 791 (63%) alpha-blockers; 91 (16%) and 66 (5%) phytotherapeutics; 21 (4%) and 88 (7%) 5-ARInhibitors; 45 (8%) and 222 (18%) alpha-blockers combined with 5-ARInhibitors, respectively (Table 1). The proportion of patients with symptom persistence decreased in both groups during the registry period as follows: BL; M12; and M24: Treated: 0.77 (95%CI:0.75–0.80); 0.64 (95%CI:0.61–0.67) and 0.62 (95%CI:0.58–0.65),respectively; Untreated: 1.0; 0.67 (95%CI:0.62–0.71) and 0.59 (95%CI:0.54–0.64), respectively. The 95%CIs for the proportions of patients with clinical progression at M12 (Treated:0.10[95%CI:0.09-0.12]; Untre ated:0.13[95%CI:0.11-0.16]) and M24 (Treated:0.17[95%CI:0.15-0.19]; Untreated:0.16[95%CI:0.13-0.19]) were clearly overlapping and thus not significantly different between initial treatment categories. In UK, the proportion of patients with clinical progression was higher than in other countries.
Conclusion: The quick decrease in proportions of patients with symptom persistence is due to a positive treatment effect while at longer term the continuing decrease may be due to continuous improvement of LUTS of men on treatment or selection bias of non-responders dropping out or undergoing surgical treatment.

UP.174

Transurethral Injection of Botulinum A Toxin for the Management of Neurogenic Detrusor External Sphincter Dyssynergia

Lu S[1], Lin A[2], Cheng H[2]
[1]Dept. of Urology, Taipei City Hospital and National Yang-Ming University, Taipei, Taiwan; [2]Dept. of Urology, Taipei Veterans General Hospital and National Yang-Ming University, Taipei, Taiwan

Introduction and Objectives: We investigated the effectiveness of transurethral injection of botulinum A toxin as a treatment for the patients with neurogenic detrusor-external sphincter dyssynergia.
Materials and Methods: The patients with neurogenic detrusor-external sphincter dyssynergia were treated with transurethral injection of botulinum A toxin. A validated questionnaire and video-urodynamic study for the evaluation of the voiding condition of the patients were made at the time-points of pre-treatment, 2 weeks and 3 months after injection. International prostate symptom score (IPSS), Quality of life (QOL), cystometric capacity, postvoid residual (PVR) and detrusor leak-point pressure (DLPP) were evaluated.
Results: Post-operatively, IPSS decreased by 8.14% at 3 months as compared with the pre-treatment status; but there was no significant change of IPSS at 2 weeks; QOL decreased by 18.08% at 3 months and decreased by 9.62% at 2 weeks than pre-treatment status; no significant difference were observed in bladder cystomeric capacity after injection of botulinum A toxin treatment ; post-void residual urine decreased by 35% at 2 weeks and decreased by 40% at 3 months ; DLPP decreased by 32% at 2 weeks and decreased by 27.86% at 3 months. There is no major complication noted.
Conclusion: Transurethral injection of Botulinum A toxin into the sphincteric muscle may be a safe and promising therapeutic option for voiding dysfunction in the patients with neurogenic detrusor-external sphincter dyssynergia.

UP.175

The Role of Posterior Tibial Nerve Stimulation in Male Patients with Storage Lower Urinary Tract Symptoms: Is Urodynamics Mandated?

Arumuham V, Green L, Graham D, Dadswell R, Kraszewski M, Sangaralingam S, Godbole H, Almpanis S, Nair G, McDonald J
North Middlesex University Hospital NHS Trust, London, UK

Introduction and Objectives: Overactive bladder is known to have a significant impact on

UP.173, Table 1.

		France (%)	Germany (%)	Italy (%)	Spain (%)	UK (%)
alpha blockers	TG	91 (43)	348 (82)	136 (65)	100 (54)	116 (50)
	UG	46 (52)	129 (68)	96 (74)	54 (68)	68 (78)
alpha blockers and phytotherapy	TG	24 (11)	6 (1)	4 (2)	9 (5)	0
	UG	1 (1)	1 (1)	5 (4)	0	0
phytotherapy	TG	41 (20)	13 (3)	6 (3)	5 (3)	1 (1)
	UG	30 (34)	39 (21)	15 (12)	7 (9)	0
anticholinergics	TG	0	2 (1)	0	0	4 (2)
	UG	0	2 (1)	0	0	5 (6)
5 ARI	TG	19 (9)	20 (5)	15 (7)	15 (8)	19 (8)
	UG	5 (6)	3 (2)	2 (2)	3 (4)	8 (9)
5ARI and alpha blockers	TG	28 (13)	29 (7)	47 (23)	48 (26)	70 (30)
	UG	5 (6)	14 (7)	12 (9)	10 (13)	4 (5)
other	TG	7 (3)	9 (2)	0	9 (5)	22 (9)
	UG	2 (2)	2 (1)	0	5 (6)	2 (2)

quality of life (QOL) in both women and men. Posterior Tibial Nerve Stimulation (PTNS) is used to stimulate the sacral nerve plexus which concurrently neuromodulates the bladder and pelvic floor and has a relatively low risk of adverse events. Despite similar prevalence rates, OAB in men is often treated inadequately with medical therapies targeted to Bladder Outflow Obstruction. In women PTNS is offered in the absence of a formal Urodynamics. This study assessed the response rate of male patients with Storage Lower Urinary Tract symptoms treated with PTNS prior to further investigation.
Materials and Methods: Over a 2 year period, 29 male patients with no known neurological disease, no voiding LUTs and negligible post-void residual (<50ml) were consented and offered PTNS prior to consideration of second line anti-cholinergic treatment and after intravesical assessment with Flexible Cystoscopy. Patients were prospectively provided with the ICIQ-OAB, UDI-6 and IIQ-7 scoring pro-formas pre-PTNS. All underwent 1 PTNS session lasting 30mins each week for 12 weeks. A repeat pro-forma was performed on completion of the course.
Results: The average age was 64 (range 31-82). Pre-intervention scores for ICIQ-OAB, UDI-6 and IIQ-7 were: 9.55, 48.11 and 54.29 respectively. Post-intervention scores showed an improvement; 7.79, 41.17 and 39.89 which were all statistically significant (P= 0.0104). There were no adverse events documented.
Conclusion: PTNS is often considered as an intervention for refractory OAB before consideration of more invasive techniques and after Urodynamic Studies (UDS). OAB in men is often complicated with Voiding LUTS; however in those with purely Storage LUTs, this study shows good adherence rates and similar improvements to symptom and QOL scores and could be considered before more invasive treatment options. Long term outcomes will require follow-up.

UP.176
Prostate Artery Embolisation for Benign Prostate Enlargement: Prospective Short-Term Outcomes from a University Teaching Hospital
Coyne J**, Flowers D**, Dyer J, Somani B, Harris M, Bryant T, Hacking N
University Hospital Southampton, Southampton, UK

Introduction and Objectives: To evaluate the safety and clinical efficacy of prostate artery embolization (PAE) for benign prostatic enlargement (BPE).
Materials and Methods: Ethical approval was obtained from the new procedures committee and all patients had informed consent prior to their recruitment in the study. Between 20/4/12 and 30/4/13, 25 consecutive patients with moderate to severe lower urinary tract symptoms (LUTS) with proven outflow obstruction due to BPE on Urodynamic studies (UDS) underwent PAE. Under local anaesthesia PAE was performed via a unilateral transfemoral approach using non-spherical polyvinyl alcohol (PVA) particles. Clinical effectiveness was evaluated using validated scoring systems; International Prostate Severity Score (IPSS), Quality of Life (QOL) and International Index of Erectile Function (IIEF). Three-day Urinary diaries were recorded. Prostate volume reduction (PVR) and peak urinary flow rates (Qmax) were recorded at baseline and on subsequent clinical follow-up.
Results: Patients meeting inclusion criteria were very symptomatic with mean baseline IPSS of 25.8, QOL score of 4.9 and IIEF of 34.7. IPSS decreased by 53% at 1/12, sustained at 50% on 6/12 follow-up. Bother score reduced by 46% at 1/12 and trend towards further reduction 50% at 6/12. IIEF showed an overall increase of 16% at 6/12 which correlates to symptomatic improvement. Mean prostate volume in the study was 95cm^3 with 52% PVR post-treatment. Baseline peak urinary flow was low at 7.6ml/s rising to 11.6ml/s post-procedure (+52%).
Conclusion: PAE is a safe and effective procedure with encouraging results post-procedure and sustained at 6 months follow-up. As well as being effective, the risks of morbidity associated with this procedure is significantly less than other minimally invasive techniques for BPE.

UP.176, Table 1.

Inclusion criteria	Exclusion criteria
Age >50/<80	Severe atherosclerosis/ectasia of iliac vessels on CTA
Moderate/severe LUTS IPSS >18, QOL ≥4	Surgical indications (large bladder diverticulae, urethral stenosis, detrusor instability, neurogenic bladder)
Peak urinary flow (Qmax) <12ml/s	Prostate volume <40cm^3
Medically refractory BPE	Malignancy
	Non-obstructive UDS

UP.177
Green Light XPS-Photo Selective Vaporization of the Prostate is True Day Case Alternative to Bipolar TURP: Single UK Centre Experience
Emara A, Drinnan N, Barber N
Frimely Park Hospital, Camberley, UK

Introduction and Objectives: Increasing interest in the concept of day case surgery has been encouraged by many authorities in different countries including UK, both from the cost-effectiveness and patient's satisfaction point of view. Although Bipolar TURP (B-TURP) has been originally introduced as a safer option to the traditional mono polar TURP (M-TURP) most reports have described similar hospital stay. In our centre we have been using both techniques for the last 8 years, and more recently we have introduced the new XPS- GreenLight laser PVP (XPS-GL PVP) system as a day case procedure in 2010.
Materials and Methods: Since July 2010 we have performed over 250 cases using the new XPS-GL PVP with nearly double this number having B-TURP. In this study we have audited cases only from 2013, including 135 patients treated with B-TURP (Group 1) and another 75 had XPS-GL PVP (Group 2). Hospital stay and readmissions have been retrospectively recorded and also patient safety parameters as evidenced by complications rate.
Results: Average age group for both groups was 71.3 and 70.82 respectively, mean ASA grade was 2 for both groups. Mean hospital stay was 2.6 days for Group 1 in comparison to 0.4 days in the second group, readmissions rate was 8.8% in the first group while in the second group was 9.3%, in both groups the readmissions were mainly up-to Clavien-Dindo grade II (predominantly urosepsis or retention), with no cases necessitating further surgical intervention.
Conclusion: This data confirms that in a busy UK district general hospital, XPS-GL PVP is performed on a true day-case basis with no increased risk of readmission compared to bipolar TURP which remains associated with a longer in-hospital stay.

UP.178
Holmium Laser Enucleation of Prostate (HoLEP) as a Day Case Procedure: Is It a Safe Option?
Bonatsos V[1,2], Suraparaju L[1], Gupta S[1]
[1]James Paget University Hospitals NHS Foundation Trust, Great Yarmouth, UK; [2]Athens School of Medicine, University of Athens, Athens, Greece

Introduction and Objectives: Holmium laser enucleation (HoLEP) has been proven to be an effective alternative to transurethral resection (TURP) of the prostate for symptomatic prostatic obstruction however there is not enough data regarding its safety as a day case procedure. The aim of this study is to evaluate the efficacy, safety and outcome of Holmium laser enucleation of the prostate (HoLEP) for relief of bladder outlet obstruction (BOO) and mainly to assess the feasibility of performing it as a day case procedure.
Materials and Methods: A prospective review was performed on the clinical data of 100

consecutive patients who underwent HoLEP at our institution (James Paget University Hospital) between 2011 and 2014 by a single surgeon. Patients were evaluated preoperatively with uroflows, IPSS and QoL scores and fitness for having it as a day case procedure. Peri- and postoperative parameters like length of stay, complications, re admissions rates were also evaluated. All patients were seen in follow-up clinic at 3 months.

Results: The patients' mean age was 72 years. Mean enucleation and morcellation times were 53.5 and 15.9 minutes respectively. Mean catheter indwelling period was 4.2 days and mean hospital stay was only 0.85 days with >50% of being day cases. Significant numbers of patients stayed in just for social reasons or because they were operated late in the afternoon list. Significant improvements were noted in Qmax, IPSS, and QoL at follow-up. Only one patient experienced persistent obstructive symptoms that required reoperation (re do TURP). No blood transfusion was required. Complications (<15%) included mainly haematuria that required irrigation but settled without any intervention. Readmission rate was <10%.

Conclusions: Our study confirms that HoLEP is a safe and effective day case procedure for BOO with a low complication rate. Most importantly this study suggests that it can be performed as a day case procedure with the same safety and outcomes at much reduced cost. Moreover, day case rates can be further increased if morning theatre lists are utilised and the social issues that can lead to prolonged patient stay are identified earlier and dealt with.

UP.179

Prostatic Urethral Lift Using the Urolift® Device: A Prospective Study from Three UK Centres

Drinnan N[1], McNicholas T[2], Emara A[1], Barber N[1], Speakman M[3]

[1]Frimley Park Hospital, Surrey, UK; [2]The Lister Hospital, Stevenage, UK; [3]Taunton and Somerset Hospitals, Taunton, UK

Introduction and Objectives: Men with LUTS secondary to BPH are often seeking a less invasive alternative to TURP particularly as regards the established potential side effects on sexual

UP.179, Table 1. Symptoms, Quality of Life and Flow Results for the Prostatic Urethral Lift

	2 Week	6 Week	3 Month	6 Month	12 Month
IPSS					
n (paired values)	56	95	82	75	51
Baseline	22.7±5.6	22.9±6.1	23.3±6.0	23.2±5.9	23.9±6.3
Follow-Up	14.5±7.2	12.2±6.6	10.7±6.3	11.4±6.0	11.6±5.6
Change	-8.2	-10.7	-12.6	-11.8	-12.3
% Change (95% CI)	-36% (-26% – -46%)	-47% (-40% – -53%)	-54% (-48% – -61%)	-51% (-44% – -58%)	-52% (-45% – -58%)
p-value	<0.001	<0.001	<0.001	<0.001	<0.001
QoL					
n (paired values)	55	73	65	59	43
Baseline	4.9±0.9	4.7±1.0	4.8±0.9	4.7±1.0	4.8±1.0
Follow-Up	3.0±1.6	1.8±1.3	2.0±1.4	2.0±1.3	2.3±1.5
Change	-1.9	-2.9	-2.8	-2.7	-2.6
% Change (95% CI)	-39% (-32% – -47%)	-62% (-55% – -68%)	-59% (-52% – -66%)	-58% (-51% – -66%)	-53% (-44% – -62%)
p-value	<0.001	<0.001	<0.001	<0.001	<0.001
BPHII					
n (paired values)	48	68	65	64	47
Baseline	7.3±2.5	7.7±2.5	7.6±2.5	7.6±2.5	7.7±2.6
Follow-Up	5.5±3.6	3.4±2.7	3.3±2.8	3.4±2.6	2.9±2.8
Change	-1.8	-4.3	-4.3	-4.2	-4.7
% Change (95% CI)	-24% (-7% – -42%)	-55% (-46% – -64%)	-57% (-47% – -66%)	-55% (-46% – -65%)	-62% (-51% – -73%)
p-value	0.005	<0.001	<0.001	<0.001	<0.001
Qmax (mL/sec)					
n (paired values)	32	67	80	53	41
Baseline	9.6±3.2	8.9±3.5	8.6±3.8	8.5±3.9	7.8±4.0
Follow-Up	13.3±4.7	13.6±5.3	12.9±4.5	12.9±5.0	11.9±3.5
Change	3.7	4.7	4.3	4.4	4.0
% Change (95% CI)	38% (29% – 48%)	53% (34% – 71%)	50% (31% – 70%)	52% (26% – 78%)	51% (17% – 86%)
p-value	<0.001	<0.001	<0.001	<0.001	<0.001

function. The Prostatic Urethral Lift (PUL) has been shown to offer rapid symptom relief and improved flow while preserving sexual function. We present the results of three UK centres in a prospective study of consecutive patients.
Materials and Methods: Transurethral placement of UroLift® implants opens the prostatic urethra by retracting the lateral lobes. Twenty four men were treated at 3 British centres and evaluated at a median of 1 year by IPSS, BPH Impact Index, Qmax, patient satisfaction and adverse event reports, including sexual function. Average age, prostate size and baseline IPSS were 60 years, 43 mls, and 24, respectively.
Results: Patients experienced symptom relief by 2 weeks, seeing further improvement to 3 months and sustained to 12 months (Table 1). Urinary flow (Qmax) also significantly improved at 12 months. Adverse events were generally mild and transient. There were no reports of ejaculatory or erectile dysfunction. One patient progressed to TURP without complication. A total of 92% patients reported improvement and would recommend procedure when asked at 3 months.
Conclusion: The PUL procedure offers a new option in the treatment of LUTS secondary to BPH. These results from three UK institutions corroborate those of a larger randomized study; the PUL procedure offering rapid and sustained relief of LUTS and improved flow with minimal side effects, whilst uniquely preserving all aspects of sexual function.

UP.181
Treatment Efficacy of Low-Dose Propiverine in Male Patients with Low Urinary Tract Symptoms with Storage Symptoms
Jung S[1], Chung H[1], Hwang I[1], Yu H[1], Hwang E[1], Kim S[1], Kang T[1], Kwon D[1], Park K[1], Cho W[2], Lim D[2], Lee C[2]
[1]Chonnam National University Medical School, Gwangju, South Korea; [2]Chosun University School of Medicine, Gwangju, South Korea

Introduction and Objectives: This study was done to evaluate the efficacy of low-dose (10 mg) propiverine combined with (0.2 mg) tamsulosin in patients with lower urinary tract symptoms (LUTS) and benign prostatic hyperplasia (BPH), and to investigate whether combined treatment would improve storage symptoms in patients with benign prostatic hyperplasia (BPH).
Materials and Methods: One hundred and forty eight men with LUTS/BPH with storage symptoms (International Prostate Symptom Score ≥ 12: storage symptoms ≥ 4) were retrospectively reviewed from January 2007 to December 2011. Patients were divided into two groups: control group (tamsulosin 0.2 mg, once daily) and combined group (tamsulosin 0.2 mg, once daily and propiverine 10 mg, once daily). International Prostatic Symptom Score (IPSS), maximal urinary flow rate (MFR), and post-voided residual urine (PVR) and impact on quality of life (QoL) were reviewed at the start of the study and after 1 and 2 months.
Results: After treatment, subjective and objective outcomes were improved. In the combined group, the voiding symptoms storage symptom score was significantly improved compared with the control group at 1 and 2 months after treatment. The improvements in the IPSS total score, MFR, PVR, and QoL were not significantly different between the groups. No serious adverse events were found.
Conclusion: Treating tamsulosin combined with low-dose propiverine improved the voiding and storage symptom score compared with the tamsulosin only group in patients with LUTS/BPH. The initial combination medication could be an effective treatment for LUTS/BPH patients with storage symptoms.

UP.182
Twelve-Week, Prospective, Open Label, Randomized Trial for the Effect of Anticholinergic Agent or Antidiuretic Agent as Add-On Therapy to Alpha-Blocker for Lower Urinary Tract Symptoms
Lee S[1], Shin Y[2,3], Kim J[2,3], Zhang L[2,3], Zhao C[4,5], Kim Y[2,3], **Park J**[2,3]
[1]Dept. of Urology, Sungkyunkwan University Medical School, Seoul, South Korea; [2]Dept. of Urology, Chonbuk National University Medical School, Institute for Medical Sciences, Chonbuk National University, Jeonju, South Korea; [3]Biomedical Research Institute and Clinical Trial Center of Medical Device, Chonbuk National University Hospital, Jeonju, South Korea; [4]Dept. of Urology, Renji Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China; [5]Shanghai Institute of Andrology, Shanghai, China

Introduction and Objectives: Effects of anticholinergic or antidiuretic agent add-on therapy to an alpha-blocker for LUTS according to a 3-d voiding diary (VD) are unknown. The aim of this study was to analyze the efficacy of anticholinergic or antidiuretic agent as add-on therapy for nocturia in men previously treated with an alpha-blocker for LUTS.
Materials and Methods: Patients were randomly subdivided into two groups. All patients had a 4-week wash-out. Group A had alpha blocker for 4 weeks, alpha-blocker + anticholinergic agent for 4 weeks and finally 4 weeks of alpha-blocker + antidiuretic agent. Group B had alpha blocker for 4 weeks, alpha-blocker + antidiuretic agent for 4 weeks, and finally 4 weeks of alpha blocker + anticholinergic agent. In both groups, patients were subdivided into nocturnal polyuria (NP), decreased nocturnal bladder capacity (NBC), or nocturia by both causes. A 3-d VD, total IPSS, IPSS subscores, overactive bladder symptom score (OABSS), uroflowmetry, and post-void residual urine volume were assessed at baseline, and 4, 8, and 12 weeks.
Results: A total of 405 patients completed the study. During treatment, the changes from baseline in total IPSS and IPSS subscore significantly were decreased at 4 weeks and were maintained for 12 weeks. In the NP subgroup of Group A and B, nocturia number for 3-d, nocturnal urine volume, and nocturnal index were significantly decreased using alpha-blocker + antidiuretic agent. In the decreased NBC subgroup of Group A and B, IPSS storage subscore, OABSS, 3-d nocturia number, 3-d urgency number, and NBC index were all significantly decreased using alpha-blocker + anticholinergic agent.
Conclusion: Anticholinergic agent or antidiuretic agent add-on therapy in men previously treated with an alpha-blocker improves nocturia including LUTS. Patient Summary: We found that the add-on therapy of anticholinergic or antidiuretic for LUTS patient previously treated by alpha-blocker needs 3-d VD.

UP.184
The Influence of Concomitant Prostatic Calcification to the Therapeutic Result in Patients with Chronic Prostatitis
Kim S[1], Kim S[2], Sohn D[1]
[1]Yeoeuido St. Mary's Hospital Catholic University Medical College, Seoul, South Korea; [2]Jeju National University Hospital, Jeju-si, South Korea

Introduction and Objectives: Prostatic calcification is frequently found among patient with chronic prostatitis. However, a relation with clinical significance or symptoms and its effect on treatment were not known clearly. Under this background, the author intended to explore a correlation between prostatic calcification, its symptom with treatment effect.
Materials and Methods: A total of 482 patients who underwent prostrate ultrasonography and National Institutes of Health Chronic Prostatitis Symptom Index (NIH-CPSI) among the patients who received treatment due to chronic prostatitis at the urology department of hospital were targeted for this study. Depending on calcification aspect being shown in prostrate ultrasonography, those patients were classified into Group I (A group in which calculus was not found), Group II (discrete, multiple small echoes, usually diffusely distributed through the gland) and Group III (large mass or multiple, coarser echoes) and change of total score of NIH-CPSI and scores of each domain before and after medication were compared.
Results: Number of patients of Group I, II & III was 233, 176 and 73 persons, respectively, and average age of each group was 38.9±7.5, 40.1±6.3 and 42.0±4.9 years old and the age of Group III was significantly older than that

of Group I. In addition, any difference of total score of NIH-CPSI by each group before medication was not represented between Group I and II but total score of Group III was significantly higher than that of Group I and in terms of urination and quality of life also, Group III was significantly higher than Group I. Total score of NIH-CPSI and scores of each domain after medication were decreased in every groups but decreased rate of pain, urination and total score of Group III was significantly marginal compared with that of Group I.

Conclusion: Symptom of prostatitis was observed to be more severe in patient whose prostatic calcification was progressed than in patient without prostatic calcification and its treatment response was also slow. Therefore, in case that prostatic symptom is severe, it is required to doubt a possibility of prostatic calcification onset and if its calcification was progressed, more positive treatment would be required.

UP.187

Prevalence and Medication Costs of Benign Prostatic Hyperplasia: Korean Nation-Wide Health Insurance Database Study

Park J[1], Lee Y[2], Lee J[3], Yoo T[4], Chung J[5], Yun S[6], Hong J[7], Seo S[8], Cho S[1], Son H[1]

[1]Seoul Metropolitan Government Seoul National University Boramae Medical Center, Seoul, South Korea; [2]Seoul National University Hospital, Seoul, South Korea; [3]Sanggye Paik Hospital, Seoul, South Korea; [4]Eulji General Hospital, Seoul, South Korea; [5]Inje University Busan Paik Hospital, Busan, South Korea; [6]Chungbuk National University Hospital, Cheongju, South Korea; [7]Asan Medical Center, Seoul, South Korea; [8]Samsnug Medical Center, Seoul, South Korea

Introduction and Objectives: Using Korean nation-wide health insurance data, we aimed to analyze prevalence and medication cost of BPH patient management

Materials and Methods: We obtained the recent 5-year data (2007–2011) on the treatment

UP.187, Table 1. 2007-2011 BPH patients with medication and medication costs (\)

	2007	2008	2009	2010	2011
Total (n) (costs (won))	666,243 (133,695,557,672)	754,842 (161,245,082,391)	888,000 (161,245,082,391)	988,804 (217,999,356,443)	1,045,538 (237,036,148,033)
Age classification					
40s	69,079 (6,062,265,538)	75,549 (6,889,372,071)	88,586 (7,906,635,819)	94,226 (8,334,561,349)	91,036 (8,117,163,133)
50s	149,808 (22,681,561,786)	167,963 (26,248,487,513)	196,870 (30,439,305,047)	219,701 (33,803,861,082)	229,479 (35,974,579,128)
60s	219,244 (48,630,529,141)	248,767 (58,763,548,147)	290,059 (68,969,481,215)	318,099 (76,665,987,486)	334,341 (82,394,457,648)
70s	166,327 (43,122,638,330)	192,367 (53,081,761,379)	228,448 (64,515,280,403)	260,961 (75,137,417,642)	285,331 (83,237,159,318)
Over 80s	47,556 (12,236,096,184)	55,082 (15,232,994,268)	65,754 (19,028,541,926)	77,127 (22,832,988,637)	86,063 (26,059,201,754)
Hospital classification					
Tertiary hospital	89,120 (27,008,868,385)	102,802 (32,749,629,390)	124,439 (41,957,094,626)	137,168 (43,946,869,484)	142,427 (44,646,033,595)
Secondary hospital	153,005 (38,195,824,411)	178,263 (46,339,318,520)	193,088 (50,710,269,887)	217,397 (57,986,222,610)	231,467 (62,398,453,314)
Primary hospital	36,868 (6,597,241,479)	37,925 (6,644,940,572)	47,257 (8,662,917,548)	52,306 (10,072,534,604)	53,559 (10,695,038,120)
Clinic	375,155 (59,102,590,747)	421,835 (72,017,846,727)	505,832 (86,528,253,162)	563,332 (101,187,256,002)	599,243 (114,211,662,882)
Public health center	12,095 (2,791,032,650)	14,017 (3,493,347,182)	17,384 (4,257,147,523)	18,601 (4,806,473,743)	18,842 (5,084,960,122)
Department classification					
Urologists	425,402 (92,290,130,806)	491,261 (113,200,712,800)	576,124 (135,628,174,720)	640,982 (154,011,683,815)	676,233 (167,571,865,000)
Non-Urologists	240,841 (41,405,426,866)	263,581 (48,044,369,591)	311,876 (56,487,508,026)	347,822 (63,987,672,628)	369,305 (69,464,283,033)
Area classification					
Big city	355,420 (72,689,793,125)	403,296 (87,479,865,157)	465,435 (102,470,721,377)	512,811 (113,361,970,980)	538,644 (121,463,585,485)
Small city	249,544 (49,741,403,755)	283,570 (60,135,339,362)	341,027 (73,068,448,700)	395,239 (86,738,478,087)	426,337 (97,423,834,444)
Rural area	61,279 (11,264,360,792)	67,976 (13,629,877,872)	81,538 (16,576,512,669)	80,754 (17,898,907,376)	80,557 (18,148,728,104)

\ : Korean won, average exchange rate in 2011 was $1=\1126.8

of BPH from the national health insurance system.
Results: The number of registered BPH patients in Korea was 844,931 (2007), 961,983 (2008) 1,116,549 (2009), 1,238,573 (2010), 1,297,750 (2011), respectively. And the prevalence per 10,000 people was 468 (2007), 527 (2008), 606 (2009), 666 (2010), 689 (2011) for each year. The number of patients and the prevalence tended to increase gradually. At age distribution, the numbers of 60s were largest, 80s patients had the highest prevalence. Among total registered BPH patients, about 80% of patients were treated with medications. From 2007 to 2011, the number of BPH patients with medications was increased by 57%, while the costs of medications were increased by 77%. Sub-analysis for the statics, the rates of growth were different depending on the situations. For old age, especially at over 70, the increments of both the patient number and the medication costs were relatively large. In small cities, both of these two variables also showed larger increments than in big cities and rural areas. Whereas, the increase of medication costs was remarkable in clinic and public health center. And urologists showed the larger rate of growth of medication costs than non-urologists (Table 1).
Conclusion: The number of BPH patients in Korea increased steadily without distinction of age. While the increment of medical costs outstripped increments of patient numbers. Appropriate health policy should be supported at this situation.

UP.188

Prostate Screening Should Be Performed in Men with Parkinson's Disease as in General Population

Park H[1], Kim J[1], Ko O[2], Shin Y[3], Park S[4], Cheon M[5], **Jeong Y**[2]
[1]Chonbuk National University Hospital, Jeonju, South Korea; [2]Chonbuk National University Medical School, Jeonju, South Korea; [3]The Armed Forces Medical Command, Seoul, South Korea; [4]Wonkwang University School of Medicine, Iksan, South Korea; [5]Presbyterian Medical Center, Jeonju, South Korea

Introduction and Objectives: As the population is aging, the burden of neurological disorders is increasing but access to care is limited. Especially, considerable number of patients with Parkinson's disease (PD) suffers from gait disturbance as well as lower urinary tract symptoms (LUTS). There are no reports that have evaluated prostate activity of patients with PD. We retrospectively evaluated the prostate activity in men with PD.
Materials and Methods: We reviewed PD patients' medical records between January 2001 and December 2012 from database of 3 different centers, in which all of the enrolled patients had visited or been consulted to urologic department to evaluate their prostate for the relevant LUTS. And age-matched non-PD patients' data were collected randomly from 3 centers. All subjects including PD as well as non-PD patients had LUTS at presentation. We compared the prostate volume (PV) which measured using a transrectal ultrasonography and serum prostate-specific antigen (PSA) level between PD and non-PD age-matched control group.
Results: A total of 169 PD patients and 169 age-matched non-PD patients' data were collected. The mean ages of both groups were 70.30±7.60 in PD and 69.13±8.47 in non-PD (p=0.129). There were no significant statistical differences between two groups in total PV (29.13±12.69 in PD vs. 30.95±14.91 in non-PD, p=0.164) and total serum PSA (2.42±3.56 vs. 2.26±3.42, p=0.312). Prostate cancer was detected in 11 patients of PD group and in 10 of non-PD group, respectively.
Conclusion: Our data show that prostate activity including prostate volume as well as serum PSA in men with PD is not different compared to age-matched control group. Therefore, the regular prostate evaluation in men with PD is necessary not only to manage the symptoms effectively but also for prostate cancer screening like general population whether they have LUTS or not.

UP.189

New Methods of Pelvic Floor Plasty in Women Suffering from Urinary Incontinence and Long-Term Results of Correction

Neimark A[1], Kondratyeva J[1], **Aliev R**[2]
[1]Dept. of Urology, Altai State Medical University, Barnaul, Russia; [2]Andrology Center of Altai Region, Barnaul, Russia

Introduction and Objectives: Up to the present day surgical treatment of women with urinary incontinence has been an important problem of modern urologic gynecology. By the present moment more than 200 different types of surgery have been developed but none of those methods leads to 100% full recovery. The research described is aimed at analyzing the results of combined surgical treatment of women with pelvic floor incapacity and stress urinary incontinence (a combination and modification of existing methods).
Methods and Materials: Within the time period from 2000 to 2010 we estimated the results obtained in course of examining of 516 women at the age of 21-72 suffering pelvic floor incapacity and stress urinary incontinence, who underwent surgical treatment. The patients underwent the following surgery: anterior colporrhaphy with bladder sphincter plasty according to standard practice subjected to our modification, cystourethropexy (fixation of the paraurethral tissue and the neck of urinary bladder to the anterior abdominal wall by means of ligatures), as appropriate it was supplemented with posterior colporrhaphy with perineolevatoroplasty and cervicectomy according to generally accepted rules. The operation duration varied from 1 hour 30 minutes to 3 hours and depended on the scale of intervention needed. Foley catheter was removed on the second day after the surgery thus preventing ascending infection development. There were 62 women (12%) who showed lack of independent urination within 2-7 days thus requiring administration of stimulating therapy and bladder catheterization followed by urination recovery. In 2 (0.4%) cases vaginal wound healed by secondary adhesion and in 1 case (0.2%) it was anterior abdominal wall.
Results: Within the period of observation from 1 to 10 years 449 patients (87%) noted a good result, 53 patients (10.2%) showed satisfactory result and 14 patients (2.8%) noted the result was poor. The results were obtained while questioning the patients, taking into consideration the absence of clinical signs of colpoptosis or stress urinary incontinence relapse. In the course of examination on a gynaecological chair 474.7 (92%) patients showed no signs of colpoptosis or stress urinary incontinence. The results of surgical treatment were estimated by means of ultrasonic bladder and urethra examination, and upon surgery, posterior vesicourethral angle became more acute at rest and on straining (130.0±1.02 and 140.4±1.02 gr correspondently) and urethra lengthened at rest as well as on straining (3.38±0.3 ⁄ 3.16±1.1 sm correspondently). Moreover, urodynamic parameters changed, upon surgery such results were observed as statistically valid decrease in maximum volumetric uroflow rate down to 17.8±2.42 ml/sec and statistically valid increase in urination duration up to 26.08±2.74 sec.
Conclusion: This method of treatment influences all the stages of pathogenesis and performs the tasks of surgical treatment of patients with stress urinary incontinence, eliminates all the changes of anatomic and functional state of lower urinary tract fully enough and restores "the whole sphincter mechanism of pelvis".

UP.190

Does Female Urethral Dilatation Confer Any Symptomatic Benefit?

Mistry Pain T[1], Rajput G[2], **Otite U**[2]
[1]Alexandra Hospital, Redditch, UK; [2]Sandwell and West Birmingham Hospitals NHS Trust, Birmingham, UK

Introduction and Objectives: Despite the paucity of evidence relating to its efficacy, female urethral dilatation (UD) is a commonly performed procedure for a variety of lower urinary tract complaints. The aim of this retrospective audit was to assess the indications and outcomes following female UD performed at a UK hospital.
Materials and Methods: All female patients undergoing UD during 2010 at our Trust were

identified using hospital records. Patient notes and clinic letters were reviewed using computerised hospital records and data collected relating to patient demographics, indications, procedure details and outcome.
Results: A total of 173 female patients undergoing UD during 2010 at our trust were identified, and follow-up data was available for 125 patients. Age range was from 19 to 94 years (median 51 years). Indications for UD were: recurrent urinary tract infections (UTIs) and storage, voiding or mixed lower urinary tract symptoms (LUTS). UD was performed predominantly with rigid cystoscopy, and dilatation ranged from 20 – 32 French (median 30 French). Eighty five (68%) of all patients described some symptomatic improvement. Out of these 85 patients, 11 (13%) were found to have a "normal" urethra at cystoscopy, 56 (66%) had urethral stenosis and 5 (6%) had urodynamically proven bladder outflow obstruction. Eleven (13%) had repeat UD and 53 (62%) were discharged following one UD. Seventy one percent of patients with recurrent UTIs with or without LUTS had symptomatic improvement after UD (with 49% after 6 months and 14% after 12 months). Sixty five percent of patients with LUTS alone had symptomatic improvement after UD (with 33% after 6 months and 4% after 12 months). Symptomatic improvement was noted across all ages. No significant adverse effects or side effects were noted.
Conclusion: Our study demonstrates that female UD is a safe procedure that confers symptomatic benefit in the short-term for both recurrent UTIs and LUTS, irrespective of patient age. In a proportion of patients, UD may result in resolution of symptoms allowing patients to be discharged from follow-up.

UP.191

Prospective Outcomes of Sacral Neuromodulation for the Treatment of Detrusor Overactivity in Females after 1 Year

Vyas L[1], Gullamhusein A[1], Simmons R[1], Radley S[1], Reid S[1,2]
[1]Royal Hallamshire Hospital, Sheffield, UK; [2]Spinal Injuries Unit Northern General Hospital, Sheffield, UK

Introduction and Objectives: To prospectively evaluate symptom outcomes, after 1 year, in females who have undergone implantation of the Interstim™ neurostimulator for the treatment of detrusor overactivity.
Methods and Materials: Twenty two females were identified with detrusor overactivity and urinary incontinence refractory to medical management and implanted with a sacral neuromodulator. ePAQ questionnaires were used prospectively pre, post first stage and after 1 year.
Results: Two patients failed their first stage trial and were not implanted. Prospective ePAQR data was available for twenty patients. Of the incomplete data 2 patients have delayed activation due to co-morbidities (unrelated to their device). Two patients of the remaining twenty did not benefit from their device and one device was removed due to lack of efficacy. One patient is non-compliant. Infection necessitating wire removal occurred in two patients who have both subsequently had a successful full implant. Two leads have been re-sited, one successfully. There have been no battery infections.
Conclusion: The results demonstrate a clear improvement in symptoms and quality of life in most of the patients receiving permanent implants. One patient found less benefit, after 1 year, the overall outcomes are encouraging. The use of ePAQ[R] provides an efficient and uncomplicated means for patients to record symptoms and clinicians to evaluate them. Further patient numbers are required to assess this treatment modality in our centre and ePAQ[R] as an assessment tool.

UP.193

Low Invasive Implantation of the Cell-active Material "LitAr" in the Treatment of Pelvic Prolapse and Stress Urinary Incontinence: Long-Term Results

Dubrovin V[1], Kislov A[1], Litvinov S[2], Egoshin A[1], Tabakov A[1], Shakirov R[1], Mihailovskiy O[1]
[1]Republic Clinical Hospital, Yoshkar-Ola, Mari El Republic, Russia; [2]National Research University, Samara, Russia

Introduction and Objectives: The application of cell-active implants makes possible formation of the connecting tissue for the treatment of pelvic prolapse and stress urinary incontinence. Regeneration and angiogenesis in the replacement zone should proceed without toxic products formation.
Materials and Methods: The 51 middle-aged patients of 42.3 years (37 to 61) with prolapse of vagina's wall and stress urinary incontinence were subjected to the low-invasive colposuspension procedure with the use of the original biodegradable implant "LitAr". With the use of low-invasive colposuspension method the biodegradable implant has been placed on paravaginal area both sides from the bladder neck between the surfaces to be sutured. The change of the condition implants has been checked by means of MRI on the 4th, 16th and 30th days after performing the procedure and existed for five years.
Results: In the course of MRI research observed on the 4th day there has been revealed hydration and the start of biodegradation of the material, by the 30th day there was no hydration at the place of implant, in the places of implantation we observed formation of the connecting tissue. We were observing the process of healing the wound without complications for all the patients. All the patients could achieve continence without postoperative complications. Forty seven (92.1%) woman are satisfied results and have no pelvic prolapse and incontinences three years after procedure, 4 (7.9%) note reduction of the vagina's wall prolapse and sign incontinences, but they don't require surgical procedures.
Conclusion: These results of five year observation have shown that the introduction of the biodegradable implant into paravaginal area has provided formation of the native connective tissue in the operation zone and effective in the treatment of pelvic prolapse and stress urinary incontinence. There were no by-effects for the patient. Low-invasive access is preferred for this procedure.

UP.194

Sacrocolpopexy: Is It Really Necessary to Associate a Transobturator Sling?

Chavez Roa C, Resel Folkersma L, Parra Ayala F, Calderon Plazarte V, Moreno Sierra J
Hospital Clinico San Carlos, Madrid, Spain

Introduction and Objectives: Adding a technique for incontinence (transobturator tape sling, TOT) to the surgery of cystocele is controversial, only 30% develop a *de novo* urinary incontinence. We want to evaluate the effectiveness of the transvaginal repair of cystocele using sacrocolpopexy, and quantify the occurrence of *de novo* stress urinary incontinence (SUI) when was not associated to a TOT placement.
Materials and Methods: Prospective study of 106 patients, intervened from 2008 to 2013, undergoing cystocele repair (mesh) associating a TOT only in cases where incontinence was evident. Were studied by medical history, physical examination, urethrocystogram and urodynamic study. Follow-up was performed at one

UP.191, Table 1.

Median Pre-Implant urinary ePAQ score	Median Pre-Implant quality Of life ePAQ score	Median Pre-Implant urinary ePAQ score	Median Pre-Implant quality Of life ePAQ score	Median Pre-Implant urinary ePAQ score	Median Pre-Implant quality Of life ePAQ score
174	100	47	16.5	48	22

UP.194, Table 1.

Surgery:	N=	Cystocele results	SUI results	*De Novo* SUI
Sacrocolpopexy without TOT	48p	Success: 44p Improvement: 2p Failure: 2p	0	4p (11.6%)
Sacrocolpopexy with TOT	58p	Success: 55p Improvement: 0p Failure: 3p	56p (96.6%)	0

month, six months and annually. The cystocele treatment success was defined as complete correction or grade I cystocele on physical examination. Improvement was defined as a decrease from baseline cystocele situation. Success in the treatment of SUI was defined as no use of pads, and improvement as use of ≤ 1 pad per day.
Results: The mean age was 69.14 years (SD 12.44), median follow-up of 29 months (16.5-44). Cystocele I in 0.9% of patients, grade II 32.1%, 62.3% grade III and grade IV in 4.7%. 58 patients (55.7%) associated SUI, of which 32 had associated urgency incontinence (54%). The surgery results listed in the Table 1.
Conclusions: The Sacrocolpopexy was an effective method in the treatment of anterior prolapse. In our series, the systematic application of TOT to patients without SUI had been an 89.4% overtreatment.

UP.195
Klinefelter's Syndrome: Historical Background of the Syndrome Described by American Physicians with a Critical Contribution by British Geneticists
Khan R, Mukherjee A, Bekarma H, Hendry D
Gartnavel General Hospital, Glasgow, UK

Introduction and Objectives: Klinefelter's syndrome is a condition commonly encountered by Urologists dealing with male factor infertility. The syndrome was described in 1942 by American physicians as a clinical syndrome without the knowledge of the genetic basis. It was a British group which described the genetic basis of this syndrome 17 years later in 1959.
Materials and Methods: We reviewed the literature to establish the history of the Klinefelter's syndrome, its clinical description and subsequent discovery of genetic basis.
Results: The syndrome was first described by Harry Fitch Klinefelter Jr. (March 20, 1912 – February 20, 1990) who was an American rheumatologist and endocrinologist. He described how the syndrome was observed by him and his supervisor Dr Albright in Massachusetts General Hospital. They described that patients were tall with gynaecomastia, had very small testes and infertility. They reported it in 1942 in the Journal of Clinical Endocrinology titled "A Syndrome Characterized by Gynaecomastia, Aspermatogenesis without Aleydigism, and Increased Excretion of Follicle-Stimulating Hormone". It came to be popularly known as Klinefelter's syndrome although it was one of Dr Albright's discoveries. There was no known genetic basis known for the syndrome at the time of first description by Kilnefelter and his group. It was through the work of British geneticists Professor Patricia A. Jacobs (Born 1934 and currently a Professor of Human Genetics in University of Southampton at Salisbury District Hospital, UK) and Professor John A. Strong that the genetic basis of the syndrome was identified. They were working in Edinburgh in 1959 when they discovered the extra X chromosome (47XXY). This allowed better understanding of the clinical findings described by Klinefelter's group.
Conclusions: We present the history of this syndrome, popularly associated to an American physician. We explain the important and lasting British contribution to the syndrome's genetic basis as well as understanding of its signs and symptoms. We highlight how knowledge about scientific basis of syndromes and diseases can take many years of research to establish.

UP.196
"One Sex, Two Genders": Evolution of the Two-Sex Theory
Gietzmann W, Thomas G, Nawrocki J, Symes A, Larner T, Coker C, Thomas P, **Nair R**
Brighton and Sussex University Hospitals, Brighton, UK

Introduction and Objectives: Until the 18th century there was one sex. Man and woman shared the same organs. The only difference was that male genitals were external and female ones internal owing to a lack of "vital heat". We examine through literature and image, the social and historical development of the 'two-sex theory.'
Materials and Methods: Contemporary sources and manuscripts from the archives of the Wellcome History of Medicine Collection, Royal Society of Medicine, London, and the Whipple Library, Cambridge, were reviewed.
Results: Before the enlightenment, sex was not binary but a continuum from less perfect-to-perfect, from woman to man. The genders were merely different versions of one sex where "women menstruated and men had bleeding haemorrhoids." "Turn outward the woman's, turn inward… and fold double the man's and you will find the same." Antiquity is littered with such assertions. These were used as proof that no anatomical difference between man and woman existed. The vagina was an inverted penis, the uterus, an inverted scrotum. This view was mirrored in vocabulary, "testicle" being applied to both male and female anatomy until 1800. However as male and female roles in society differentiated, understanding of anatomy did too, women coming to be seen as "a series of oppositions and contrasts… all parts of her body present the same differences: all express woman…the organs, the tissues, the fibers, we encounter everywhere…the same difference."
Conclusion: History is littered through image and text, a belief that once women and men represented two forms of the same sex. The genders were merely different versions of the same sex. Development of the two-sex theory represents a fundemental change in understanding of anatomy.

UP.197
Philipp Bozzini (1773 -1809) and His Instrument: The Lichtleiter
Bozzini G, Marenghi C, Maruccia S, Casellato S, Finkelberg E, Picozzi S, Carmignani L
Dept. of Urology, IRCCS Policlinico San Donato, Milano, Italy

Introduction and Objectives: Philipp Bozzini was born on May 25, 1773, in Mainz, Germany. His father, Nicolaus Maria Bozzini de Bozza, came from a well-to-do Italian family that had to escape from Italy at approximately 1760. Bozzini started his medical studies in Mainz, and approximately in 1794 went to Jena to complete them. On June 12, 1797, Bozzini was granted the title of doctor of medicine, which allowed him to establish in Mainz as physician.
Materials and Methods: Sources from medical journals, German manuscripts and European medical chronicles were analyzed regarding the life and contribution of Philipp Bozzini.
Results: Bozzini traveled several times to France and the Netherlands in order to acquire professional experience. During the War of the Second Coalition against France, Bozzini served in the imperial army and was in charge of a 120-bed campaign hospital in Mainz. His extraordinary merits during this time were known by the Archduke Karl of Austria (1771–1847), who would protect in the future Bozzini's invention. The Lichtleiter was a primitive endoscope to inspect urethra, female bladder, rectum, cervix, mouth or wounds. Bozzini thought that the instrument could be incorporated into Austrian military hospitals. This required a device to be sent to Wien, and also the performance of an expertise by health authorities. After the review the judging committee suggested some changes. Once such changes were made, they were satisfied with the operation of the instrument in patients (only examinations of the peritoneal

cavity were not approved), particularly also because the procedure was painless. Bozzini's knowledge of mathematics, philosophy, and chemistry was outstanding. Aeronautic studies and drawings of a flying device were unfortunately lost. Like many idealist people, Bozzini had no experience in business matters, but devoted himself with enthusiasm to his scientific activities. From 1804 on, his dedication to the development of his instrument for endoscopy was virtually complete. To earn a living, Bozzini practiced obstetrics with extreme care. On April 4, 1809, Bozzini died at 36 years of age from that infection. He left his wife in a bad financial situation. She died 6 months later. Their 3 small children were given over to friends.
Conclusions: Bozzini with his insights and his ideas was three quarters of a century ahead of the technical and scientific possibilities of his time. His instrument with artificial light, mirrors and specula was the father of any endoscope and opened the gate of the modern laparoscopy.

UP.198
Female Genital Mutilation: Basic Notions for the Volunteer Urologist
Chavez Roa C, Santos Arrontes D, Galindo Herrero I, Moreno Sierra J
Hospital Clinico San Carlos, Madrid, Spain

Introduction and Objectives: The female genital mutilation (FGM) defined as "partial or complete removal of the external female genitalia or other injury for non-therapeutic reasons", an ancient and extended practice, is little known in the western world. The objective is to show, from an anthropological point of view, the FGM to the urologists.
Materials and Methods: A literature search was performed in MEDLINE, The Cochrane library, institutions such as WHO and UNICEF, anthropology books and broadcast.
Results: No clue about the origin of FGM, being found from aboriginal tribes of Australia, to African societies. Usually performed by traditional practitioners without anesthesia or antisepsis, with razor blades, cans, glass, etc. The WHO classified into 4 types: I. Clitoridectomy: removal partial or complete clitoris or prepuce; II. Excision: removal partial or complete clitoris and labia minora, with or without labia majora; III. Infibulation: narrowing of the vaginal opening through a covering seal with the inner or outer labia; IV. Others like pricking, piercing, scraping and cauterizing. There is a downward trend, but there are 100-140 million women affected, concentrated mainly in Africa. Some countries like Egypt and Ethiopia with 90-99%. Type I and II are the most common with close to 75% cases. FGM could have originated, as a birth control necessity, in areas with extremely poverty and food lack. Today, it is considered a step towards adulthood prior to marriage, trying inhibit libido. Present in different religions, but there are no foundations that endorse it, although still the excuse for local authorities in an attempt to maintain the local control of the power. Complications include, hemorrhaging, abscesses, HIV, lacerations of urethra, bladder, vagina and rectum, fractures of the pelvis and hip, obstruction of the meatus and urethral strictures and infibulation present an environment for UTIs and calculus formation.
Conclusions: The FGM is still widely practiced in some places, coexisting with other health and social needs, and it is likely that a urologist in humanitarian campaign had to deal with this situation, so it is indispensable the recognition and understanding of it.

UP.199
The Historical Journey of Condoms "From Tortoise Shell to Silk & Rubber"
Tukmatchy H, Nemade H
Basildon and Thurrock University Hospital, Basildon, UK

Introduction and Objectives: The condom has come a long way from a humble loin cloth, tortoise shell to silk, rubber and latex. We present this fascinating historical evolution of the condom.
Materials and Methods: Historical literature, newspapers and the archives of the Hunterian museum of the Royal College of Surgeons of England and the Royal Society of Medicine, London, were reviewed. Rare photographs will be presented with permission.
Results: Historians have fiercely debated the first use of the condom either for contraception or prevention of disease. The use of the condom is first depicted on a painting in the French cave *Grotte des Combarrelles*, which is 12,000–15,000 years old. However, the earliest documentation of condom use was by the Greek writer Antoninus Liberalis in150 AD who relayed the legend of Minos, a cursed king who allegedly used goat's bladder as female condom to protect his sexual partner from serpents in his semen. Ancient Japanese condoms were made of either tortoise shell known as Kabutogata or from animal leather. The 19th century marked the beginning of the condom manufacturing era with Rubber condoms made in 1855, after the invention of rubber vulcanization by Charles Goodyear in 1839. Latex condoms, however, came almost a century later by the Youngs Rubber Company. The use of condoms had been fiercely opposed throughout history. Remarkably, profound opposition came from the medical industry. In 1717, the English physician Daniel Turner published arguments to condemn the use of condoms. French medical professor, Jean Astruc, also condemned their use by labelling contraception as immoral. The etymology is widely controversial. It may have come from Dr. Condom, who supplied condoms made of animal sheath to King Charles II. Other reports suggest it came from Colonel Cundum, who designed condoms for soldiers during the English Civil War. However, it most likely originated from the Latin word *condus* meaning receptacle or *cumdum* meaning scabbard.
Conclusion: The historical journey of the condom is not only interesting but also controversial and the evolution of various materials used is utterly fascinating.

UP.200
A Night with Venus, a Lifetime with Mercury: They've Forgotten the Urethral Syringe
Pang K[1,2], Venugopal S[2], Nicholas J[3], Miah S[3], Wickramarachchi R[3], Catto J[1,2]
[1]Academic Urology Unit, University of Sheffield, Sheffield, UK; [2]Dept. of Urology, Royal Hallamshire Hospital, Sheffield, UK; [3]Dept. of Urology, Rotherham Hospital, Rotherham, UK

Introduction and Objectives: The history of Syphilis has been well evaluated, however, the exact origin of the infectious disease is unclear. The authors explore the developments in the management of Syphilis from the 15th Century to the modern era of medicine.
Materials and Methods: A literature review on Syphilis was performed through Medline, PubMed and Google Scholar.
Results: Syphilis is a bacterial sexually transmitted infection induced by *Troponema pallidum*. It is thought to be carried from the New World to Europe by the Christopher Columbus crew. Crew members on the voyage later joined King Charles VIII in his invasion of Italy, resulting in the disease spread across Europe. The initial recorded outbreak occurred during this French Invasion in Italy in 1495. The disease was termed 'French disease' as it was spread by returning French troops. This was re-termed 'Syphilis' by Italian physician Girolamo Fracastoro in 1530. Syphilis caused pustules to cover the genitalia, face, body and limbs of sufferers and was a major killer in Europe during the Renaissance. *Treponema paillidum* was identified by Fritz Schaudinn and Erich Hoffmann in 1905. There were originally no effective treatment for Syphilis, one remedy was mercury, which was administered by mouth, topically or by urethral injection with syringes. As the understanding of the disease increased, more treatments were discovered. An organo-arsenical drug, Salvarsan developed in 1908 by Noble Prize winner Paul Ehrlich's team, unfortunately, this drug was very toxic and not effective for late disease especially, neuro-syphilis. It was observed that those who developed high fevers were cured of syphilis. 1927 Noble Prize winner Julis Wagner-Jaureg used this theory to establish treatment via inoculation with Malaria. Syphilis was reliably cured after World War II following

the discovery of Penicillin by Alexander Fleming in 1928.
Conclusion: Syphilis was a major killer during the Renaissance, and it is thought to originate from the Columbus voyage. Traditionally, it was managed with Mercury, which formed the saying 'A night in the arms of Venus leads to a Lifetime on Mercury'. Nowadays, syphilis is readily treatable with antibiotics.

UP.201
Foleys in a Nutshell
Abusanad O, McCabe J
St Helens and Knowsley NHS Trust, Prescot, UK

Introduction and Objectives: Dr. Frederic Eugen Basil Foley, best known to modern urologists as the man whose name attached to the self-retaining balloon catheter, the commonest urethral catheter ever used.
Materials and Methods: Dr Foley was an American Urologist, from St. Cloud, Minnesota (5th April, 1891 – 24th March, 1966). He studied languages at Yale University, receiving a bachelor's degree in 1914, and trained in medicine at John Hopkins School of Medicine until his graduation in 1918. Foley worked as a urologist in Boston, Massachusetts and became chief of urology at Ancker Hospital, Minnesota.
Results: In 1930, Foley developed an indwelling catheter to provide continuous drainage of the bladder, preceded by describing self-retaining balloon catheter in 1929, used to achieve haemostasis after cystoscopic prostatectomy. Foley introduced latex balloon catheter at a urological meeting in 1935, which was adopted by C.R Bard Company of New Jersey for distributing these catheters, under the name of the inventor. Though Foley lost a legal battle with Davol Company for the patent later on, this catheter has since been known as the "Foley". Foley had further contributions in medical inventions in addition to urethral catheters; Foleys Procedure (or Foley Y-plasty Pyeloplasty) a novel technique for treating Pelvi-Ureteric Junction stricture, also described the first Artificial Urethral Sphincter.
Conclusion: Throughout the years, the materials used to make catheters have been evolved, but the basic design of the 1930s is unchanged as first described by Dr Foley in 1930. Foleys catheter has been sized using the French units, where 1Fr is equivalent to 0.33mm.

UP.202
Keeping Up with Priapism
Nicholas J[1], **Pang K**[2], Miah S[1], Venugopal S[3], Ali Z[4], Osman N[3], Mangera A[3], Catto J[2]
[1]Dept. of Urology, Rotherham General Hospital, Rotherham, UK; [2]Academic Urology Unit, University of Sheffield, Sheffield, UK; [3]Dept. of Urology, Royal Hallamshire Hospital, Sheffield, UK; [4]Dept. of Urology, Stepping Hill Hospital, Stockport, UK

Introduction and Objectives: Priapism is a urological emergency that requires prompt management. Here we explore the evolution of historical practices for priapism management starting from ancient times.
Materials and Methods: A literature review was performed on priapism utilising PubMed, Medline and Google Scholar.
Results: The earliest recorded references to the treatment of priapism come from Ancient Egypt. These included a number of ointments and balms designed to "loosen stiff parts of the body", composed chiefly from a mixture of plant and animal fats alongside acacia juice, ox's spleen and mud. In the nineteenth century, Tripe, Hulke and others published case reports detailing their attempts at medical management of the condition. These included the topical application of tinctures to ease the erection locally, containing ingredients such as rhubarb, colocynth and mercury, and systemic treatments intended to reduce the patients' sexual drive, such as potassium bromide and emetics. Other methods included the repeated application of leeches to the perineum, to little effect. In the mid-nineteenth century, documented cases of surgical evacuation of priapism were met with scepticism, and conservative methods remained the preferred course of treatment, despite little success. Surgical methods became the preferred treatment option only at the end of the nineteenth century.
Conclusion: Various conservative methods were employed for the treatment of priapism throughout history, all of which delivered little success. With the advent of more successful conservative measures, prompt surgical aspiration and a variety of surgical techniques, modern sufferers have been spared the gruesome sight of a tank of leeches in the corner of the doctor's office!

UP.203
The Commercialisation of Urine in Ancient Rome
Drinnan N, Ni Raghallaigh H, De Juniac A, Chetwood A, Emara A, Barber N
Frimley Park Hospital, Surrey, UK

Introduction and Objectives: We examine the ancient use of urine focusing on its use in industry and medicine throughout the Roman Empire. Although today, urinalysis (using its 3000 metabolites) detects diseases, infections and drug use, its importance dates back centuries.
Materials and Methods: Uroscopy (urine's colour, taste and smell) was a primary diagnostic method before 1800 and wound cleaning and oral intake for numerous infections was medically recommended. However, urine was first used commercially in Ancient Rome – from teeth whitening, to skin creams and treatment for sores and stings. Collected from all sections of Roman society (from cesspots and public latrines) and sold to the booming tanning and textile industries, where phosphorous and potassium was extracted to clean and whiten the woollen fabric. Ammonia in stale urine was used for yielding pigments for dyeing wool. Animal skins were soaked in urine to remove the hair fibres before tanning.
Results: Major users of urine were the 'Fulloners' (dry cleaners) who provided frequent serious cleansing to Roman clothing by soaking dirty garments (mainly wool) in a heated mixture of urine and water, separating dirt and sweat before rinsing. Their commercial success led to Emperor Nero levying a tax on the urine used. This was later re enacted by his successor Vespasian (69 – 79 AD).
Conclusion: Vespasian's urine taxes 'vestigial urinae' brought wealth and financial stability to the whole Empire.

UP.204
Jean Alfred Fournier and Fournier's Gangrene: A Historical Perspective
Mukherjee A, Khan R, Crooks J, Hendry D
Dept. of Urology, Gartnavel General Hospital, NHS Greater Glasgow and Clyde, Glasgow, Scotland, UK

Introduction and Objectives: Necrotising fasciitis of genitalia, also known as Fournier's gangrene is a life threatening emergency dealt by Urologists. The condition was described in 1883 by French venereologist Jean Alfred Fournier (1832-1914) and it became popularly known as Fournier's gangrene. This year marks the 100th anniversary of his death. We describe key historical accounts of this disease and its current management from a urological perspective.
Materials and Methods: We performed a literature search in PubMed with the words "Fournier's Gangrene". This resulted in 660 articles. Articles related to the historical perspective of the disease and its current management were reviewed.
Results: Our literature search indicated that Jean Alfred Fournier, perhaps the most prominent European venereologist of the second half of the 19th century, described the features of necrotising fasciitis of genitalia and scrotal gangrene. He described 5 cases of men suffering from this rapidly progressive gangrenous condition. Interestingly, the condition had been described previously by Avicenna (1025) and Baurienne (1764) but it's attributed in current urological literature to Fournier. These earlier descriptions were attributed to a single causal factor. Fournier described it as an idiopathic, rapidly progressive gangrene of the male genitalia. However, he often mistakenly attributed the disease to strange and obscure sexual practices, often calling upon physicians to try and obtain confession from patients of "*obscene practices*".

This gives us an insight into the socio-cultural practices of medicine at that time. In current clinical practice, the diagnosis of Fournier's remains entirely clinical with acute subcutaneous infective processes and rapid spread of gangrene. Immediate management includes surgical debridement, broad spectrum antimicrobials and intensive supportive care. Reconstructive surgery is often required to achieve better cosmesis.

Conclusion: Necrotising fasciitis of genitalia had been described in literature before the report by Fournier in 1883. The early descriptions of scrotal gangrene made by Fournier are still relevant in current clinical practice wherein the diagnosis remains entirely based on clinical suspicion. Fournier's association with venereal disease and his view of this condition being gender-specific has been refuted over the years. The management still includes early surgical debridement with supportive medical care.

UP.205

Arthur Jacobs: Father of Modern Urology in Glasgow

Cosgrove M

Dept. of Urology, USC, Los Angeles, USA

I had the privilege of being introduced to Urology by Arthur Jacobs who passed away 40 years ago in 1974. Mr. Jacobs started practicing surgery in the pre-antibiotic 1920s when Urology procedures in Great Britain were performed by general surgeons. He created in Glasgow a department within the Royal Infirmary exclusively devoted to Urology – wards, operating rooms, outpatient clinic, diagnostic and radiology facilities, and even an independent medical records department. Mr. Jacobs developed Urology as a specialty in Glasgow and trained the next generation of Urologists. He was at the forefront of Urologic political and clinical advances in Great Britain. He made major contributions to the treatment of genitourinary tuberculosis and to the use of intestine in Urologic surgery. He also introduced in his department the first hemodialysis machine in Glasgow. He was a compassionate physician and a great mentor.

UP.206

False Negative MRI Scans in Prostate Cancer Diagnosis

Serrao E[1], Wadhwa K[1,2], Barrett T[2], Frey J[2], Manke E[2], Koo B[2], Gallagher F[2], **Kastner C**[2]

[1]University of Cambridge, Cambridge, UK; [2]Addenbrookes Hospital, Cambridge, UK

Introduction and Objectives: With the advent of MRI guided biopsy, one important question is that of false negative scans: that is when the MRI has reported no lesion but the patient subsequently is found to have a tumour either on prostatectomy or by subsequent biopsy. This study aims to determine the rate and causes of false negative prostate MRI exams and suggest methods to improve current practice.

Materials and Methods: A total of 148 prostate MRI exams (T2WI, DWI and ADC maps) conducted in patients with suspected prostatic cancer, prior to transrectal ultrasound (TRUS)-guided biopsy were retrospectively reviewed and compared with histological Gleason grade (June 2011 to May 2013). False negative lesions on imaging were identified and retrospectively reviewed by a single experienced radiologist. The prostatic sectors where the histologic lesions were found were characterized.

Results: False negative lesions were identified in 28 exams out of 148 (18.92%; 46 lesions). This number was reduced by the second reader to 25 exams (35 lesions). Most false negative lesions were located in sector 1 (10/46) and 6 (11/46) followed by sectors 3L, 4L and 5L (6/46 each); Table 1.

Conclusions: Double reading decreased the number of false negative scans by 23.91% showing the potential value of doing this. Furthermore, we observed that many of the false negative lesions (15/46) were MRI-invisible, even after double-reading. This might be due to the limitations of the technique; the volume of diseased tissue required in each voxel for the lesion to be detected and the subtle nature of many areas of abnormality. In addition, anterior lesions were more likely to be missed than lesions elsewhere within the prostate, as has previously been shown.

UP.206, Table 1. Distribution of lesion location and MRI classification of the affected sectors. Number of significant cancers missed on MRI and their correspondent classification.

Lesion location (sectors)				
1	6	3L	4L	5L
10/46	11/46	6/46	6/46	6/46

MRI analysis	MRI report	Target lesion
True miss	10	7
Non-specific features	12	10
No features of a focal lesion	19	15
Miscalled zone	3	1
Difficult interpretation	2	2
Total (lesions):	46	35

MRI analysis	**Significant Cancer**	
	MRI report	Target lesion
True miss	8/10	5/7
Non-specific features	8/12	6/10
No features of a focal lesion	11/19	10/15
Miscalled zone	2/3	0/1
Difficult interpretation	1/2	1/2
Total (lesions):	30 out of 46	22 out of 35

UP.207

Defining the Learning Curve in the Implementation of Multi-Parametric MRI for Image Guided Prostate Biopsies

Gaziev G, Wadhwa K, Barrett T, Koo B, Gallagher F, Serrao E, Frey J, Warren A, Gnanapragasam V**, Kastner C**, Patruno G, Doble A

Addenbrookes Hospital, Cambridge, UK

Introduction and Objectives: This study aimed at determining the accuracy of Multiparametric Magnetic Resonance Imaging (mpMRI) during the learning curve of radiologists in a 'Cancer Centre' using MRI targeted, transrectal ultrasound guided transperineal fusion biopsy (MTTP, BiopSee™) to validate.

Materials and Methods: Prospective data on 340 consecutive patients was collated. Patients underwent mpMRI read by two radiologists in line with ESUR standards followed by MTTP biopsy of the lesion (targeted biopsy). A 5-point likert scale of probability was used to determine lesions suspicious for cancer, with scores ≥3 taken as a positive MR-target. We compared sequential groups to determine the learning curve. Results: We detected a positive mpMRI in 64 patients from the first cohort (Group A) (91%) and 52 patients from the latest cohort (Group B) (74%). Prostate cancer (CaP) detection rate on mpMRI increased from 42% (27/64) in Group A to 81% (42/52) in Group B (*p value* 0.003). CaP detection rate by targeted biopsy increased from 27% (17/64) in Group A to 63% (33/52) in Group B (*p value* 0.001). The negative predictive value of MRI for significant cancer (> Gleason 3+3) was 2/18 in Group B vs. 2/6 in Group A.

Conclusions: We demonstrate an improvement in detection of CaP for MRI reporting over time, suggesting a learning curve for the technique. Despite an improved negative predictive value for significant cancer, this did not reach a level whereby biopsy can be avoided in MR negative cases.

UP.208

Multiparametric MRI Guidance in the Initial Set of Prostate Biopsies: What is the Real Benefit?

Acar O[1], Esen T[1,2], Colakoglu B[3], Vural M[3], Peker O[4], Musaoglu A[1]

[1]Dept. of Urology, VKF American Hospital, Istanbul, Turkey; [2]Koc University, School of Medicine, Istanbul, Turkey; [3]Dept. of Radiology, VKF American Hospital, Istanbul, Turkey; [4]Dept. of Pathology, VKF American Hospital, Istanbul, Turkey

Introduction and Objectives: With the increased recognition of the capabilities of prostate Mp-MRI, attempts are being made to incorporate MRI into routine prostate biopsies. In this study, we aimed to analyze the diagnostic yield after cognitive fusion, blind and in-bore biopsies which were conducted as the initial sampling modality.

Materials and Methods: Charts of the patients (n=151), who have undergone transrectal prostate biopsy after the adaptation of Mp-MRI into routine clinical practice were retrospectively reviewed. Those patients with previous negative biopsies (n=24) and abnormal digital rectal examination findings (n=16) were excluded. Mp-MRI included 2D T2-weighted imaging, diffusion-weighted imaging, and dynamic contrast-enhanced imaging. Cognitive fusion biopsies were performed after the radiologist has reviewed Mp-MRI images whereas blind biopsies were done in the absence of such a feedback. In-bore biopsies were conducted by means of real-time targeting under MRI guidance.

Results: Between January 2012 and February 2014, a total of 102 patients, fulfilling the above mentioned criteria, have undergone blind (n=37), cognitive fusion (n=49) and in-bore (n=14) biopsies. Mean age, serum PSA value and prostate size did not differ significantly between study groups. In the blind biopsy group, 51.3% were diagnosed with prostate cancer, while the same ratio was 55.1% and 71.4% in the cognitive fusion and in-bore biopsy groups, respectively (p=0.429). Clinically significant prostate cancer (based on clinical criteria) ratio was 69.1%, 70.3% and 90% in the blind, cognitive fusion and in-bore biopsy groups, respectively (p=0.31). According to the histopathological variables in the prostatectomy specimen, 85.7%, 93.3% and 100% of the patients in the blind, cognitive fusion and in-bore biopsy groups, respectively had significant prostate cancer (p=NA). In the cognitive fusion group, prostate cancer was diagnosed outside the oversampled MRI-suspicious regions in 9 patients, while 16 patients had prostate cancer both inside and outside the MRI-suspicious regions.

Conclusion: Mp-MRI guidance did not increase the diagnostic yield in the first set of transrectal prostate biopsies at a significant magnitude. Mp-MRI may be more efficient after multiple negative biopsies and MRI-TRUS fusion softwares might be the ideal way of adapting image guidance to prostate biopsies.

UP.209

Is the Complete Resection of Prostatic Adenoma after Transurethral Resection of Prostate (TURP) Really True? Analysis of Structural Changes of Prostate on Transrectal Ultrasonography (TRUS)

Cho J, Cho H, Kang J, Yoo T

Eulji Hospital, Seoul, South Korea

Introduction and Objectives: To investigate the status of prostatic adenoma on TRUS after TURP.

Materials and Methods: We retrospectively investigated data from patients who were confirmed complete resection of prostate adenoma on resectosope after TURP by operators. International prostate symptom score (IPSS), maximum uroflow rate (Qmax), voided volume weight of resected adenoma and finding on TRUS were performed pre- and postoperatively 3 months. All surgeries were undergone by two right hand dominant and experienced surgeons (at least 100 pervious TURP performed).

Results: A total 87 patients were enrolled. The preoperative prostate and adenoma size was 63.8±33.8g and 33.9±16.3g. The preoperative Qmax was 8.4±3.3ml/sec, voided volume 156.8±82.9ml and IPSS 18.8±8.3. The resected adenoma was 21.8±11.7g and resection rate of adenoma (postoperative TZ volume/preoperative TZ volume) was 72.0%. The postoperative prostate size and adenoma was 17.9±4.5g and 5.5±2.6g. The increase in postoperative Qmax was 7.6±6.3ml/s and voided volume 105.3±120.4ml. The IPSS was decreased to 11.4±8.2. On postoperative TRUS, the axial diameter of opening on prostate was 9.9±5.7mm. In some case, a small amount adenoma remained around the verumontanum. Thirty (34.4%) patients did not have remaining adenoma. But 42 (48.3%) of patients had it remaining on left, 6 (6.9%) on right and 10 (10.3%) on both sides at verumontanum.

Conclusions: TURP is a surgical method that can remove sufficiently adenoma of benign prostatic hyperplasia. However, it is difficult to completely remove adenoma around verumontanum on the opposite side of the dominant hand of the operator. Therefore, more attention should be given around verumontanum at TURP.

UP.211

Use of Urinary Beta-2 Microglobulin as Renal Injury Index

Kontos S[1], Tsafrakidis P[2], Nalagatla S[1]

[1]Monklands Hospital, NHS Lanarkshire, Airdrie, Scotland, UK; [2]Broomfield Hospital, Chelmsford, UK

Introduction and Objectives: Human Beta-2 Microglobulin (B2MG) is a protein filtered by the glomeruli and reabsorbed by the proximal tubular cells where it is metabolized. B2MG is expressed on nucleated cells, and is found at low levels in the serum and urine of normal individuals. The aim of this study was to elucidate the relationship between urinary levels of B2MG and renal injuries and to correlate them with clinicopathological parameters.

Materials and Methods: Urine samples of 85 patients with renal injuries were collected after 24h, 2 days and 7 days for measuring B2MG. The control group consisted of 10 healthy subjects (<300ng/ml). The patients underwent image study by U/S and CT. Patients' age ranged from 18 to 70 years. Their diagnoses were reported as follows: 13 (15.3%) had Grade I, 21 (24.7%) had Grade II, 16 (18.8%) Grade III, 8 (9.4%) Grade IV and 12 (14.1%) Grade V. All patients with Grade IV and V underwent nephrectomy due to hemodynamic instability. Relationship between B2MG and Grade of renal injury was evaluated with Kruskal-Wallis and confirmed by the Cochran-Armitage test for trend.

Results: In the urine sample of 15 patients with negative image study for renal injury, we detected B2MG with median value 524 ng/ml. A statistically significant negative relationship was found between levels of B2MG across the early period after renal injury (r_s = -0.31, p-value= 0.004), meaning that when patients go to 7th day, this is followed by a decrease in B2MG. Patients with Grade IV have 2579.7 ng/ml greater B2MG compared to patients in Grade 0 and subjects with Grade V have a 4956.5 ng/ml greater B2MG compared to patients in Grade 0, meaning that the level of B2MG is increased. B2MG of patients with Grade IV-V, who underwent nephrectomy were normalized in 2nd and 7th day postoperatively.

Conclusions: B2MG constitutes reliable index for renal injury and it can be used when the image study is not available or not diagnostic for renal injury and the suspicion is placed by the existence microscopic or macroscopic hematuria.

UP.212

Is MRI-Directed Limited Transperineal Mapping Prostatic Biopsies a Feasible Strategy to Diagnose Prostate Cancer?

Mukherjee A[1], Morton S[1], Fraser S[2], Salmond J[2], Baxter G[3], Leung H[1,4,5]

[1]Dept. of Urology, NHS Greater Glasgow and Clyde, Glasgow, Scotland, UK; [2]Dept. of Pathology, NHS Greater Glasgow and Clyde, Glasgow, Scotland, UK; [3]Dept. of Radiology, NHS Greater Glasgow and Clyde, Glasgow, Scotland, UK; [4]Beatson Institute for Cancer Research, Glasgow, Scotland, UK; [5]Institute of Cancer Sciences, University of Glasgow, Glasgow, Scotland, UK

Introduction and Objectives: Transperineal prostatic biopsy is firmly established as an

important tool in the diagnosis of prostate cancer (PCa). The pros and cons of template mapping versus imaging-guided targeted biopsies remain to be fully addressed. We aim to study the risk of positive biopsies in the context of MRI findings and examine the accuracy of MRI in predicting the location of transperineal template mapping prostatic biopsy-detected (TTMB) PCa.
Materials and Methods: We studied consecutive patients undergoing TTMB carried out at a tertiary urology centre; histological data and MRI findings of each case were analysed. MRI scans before and/or after TTMB were analysed for localisation of lesion. MRI-identified lesions were categorised according to level of cancer suspicion. Comparative analysis of lesion localisation was done between histological position of PCa on MRI and TTMB.
Results: Over 27 months (February 2011 to May 2013), 44 patients (mean age 65 years) underwent TTMB: 34 patients for primary investigation of PCa and 10 patients with biochemical relapse. Mean PSA level was 15 ng/ml (range 2.5-79). Ten patients received three or more transrectal prostatic biopsies previously. Overall, 31 of 44 (70%) patients were positive for prostate cancer on TTMB with 58% harbouring tumours with Gleason scores ≥7. Ten patients had MRI of the prostate and pelvis both before and after TTMB. Suspicious MRI lesions were identified in 28 patients. Of note, all of these 28 patients had TTMB-confirmed Pca. MRI correctly predicted the outcome of TTMB in 33 of 42 cases (positive predictive value: 79%) in a right-left (R-L) laterality analysis and 25 of 42 cases (positive predictive value: 60%) in an antero-posterior (A-P) analysis. Combined data from the R-L and A-P versus histology identified 14 of 42 (33%) cases demonstrating concordance in localizing lesions to respective quadrants of the prostate.
Conclusion: Our data suggest the usefulness of MRI-directed TTMB in a hemi-gland approach, particularly in a R-L manner. A quadrant approach for identifying PCa without whole gland mapping biopsies is less useful. Our findings support the notion of MRI-based selection of patients for TTMB and that lesions revealed by MRI are useful for targeted-biopsies.

UP.213
Comparison of Effectiveness of Pericatheter Retrograde Urethrography and Cystography in Detecting Urethrovesical Anastomosis
Park K, **Kim S**, Kim Y, Huh J
Jeju National University, Jeju, South Korea

Introduction and Objectives: Urethro-vesical anastomosis (UVA) is a critical point of prostatectomy. UVA leaking can prolong catheterization. Properly evaluation of UVA leaking is important to remove the catheter. We evaluate the method of confirming UVA leaking.
Materials and Methods: We prospectively analyzed 30 patients who underwent robot assisted laparoscopic prostatectomy for prostate cancer at our institute from March 2013 to February 2014. All patients underwent pericatheter retrograde urethrography (RGU) and cystography at postoperative days 7. We compared the ability of detection of UVA leaking at minimal filling of radiopaque dye and patient discomforts and ability of providing additional information about UVA. In cystography, bladder filling was stop at patients' urinary urge sense or 300cc of filling and 50cc dye was injected intraurethrally in pericatheter RGU. Patients discomfort was evaluated with visual analogue pain scale.
Results: Among 30 patients, UVA leaking was observed in 6 patients. After postoperative 14 days, all patients could remove their urethral catheter without UVA leaking. Both methods detected UVA leaking of 6 patients at postop 7 days. RGU could detect UVA leaking at mean 15.6cc (10-25cc) of injection, cystography did it at mean 83.3cc (50-120cc) (P <0.001). However, patient's pain scale during procedure were mean 6.45 in RGU, 3.75 in cystography (P <0.001). Cytography could understand the bladder shape and functional capacity more effectively rather than RGU.
Conclusion: RGU could detect the UVA leaking with less usage of filling fluid and finely described the pattern of leaking flow than cystography. However, RGU produced more pain during procedure and was less informative rather than cystography.

UP.214
Diagnostic Accuracy of MRI Scanning in Predicting Tumour Detection at Transperineal Template Guided Sector Biopsy
Abusanad O[1], Iskander M[2], Patrick N[2], McCabe J[1]
[1]St Helens and Knowsley NHS Trust, Prescot, UK; [2]Royal Liverpool University Hospital, Liverpool, UK

Introduction and Objectives: To assess the accuracy of pre-biopsy MRI in detecting prostate cancer prior totransperineal template guided sector (TPTS) prostate biopsies.
Materials and Methods: Patients undergoing TPTS biopsy for diagnostic purposes (previous negative TRUS biopsies with persisting clinical suspicion of prostate cancer) were included in this prospective analysis. Patients underwent a pre-biopsy 1.5T diffusion weighted (DW) MRI scan. A 24-32 core transperineal biopsy was then undertaken from 6-8 anatomical sectors dependent upon prostate volume.
Results: A total of 106 patients were identified with a mean age 63.9 (range 29-80). Mean PSA and prostate volume was 10.7 (3.8-66.1) and 59.8 (20-140) respectively. Mean number of previous TRUS biopsies was 1 (0-4). Sensitivity of 1.5T DW MRI for prostate cancer diagnosis in this series was 58% with a specificity of 57%. A sub analysis of those with intermediate or high risk disease revealed a sensitivity of MRI of 58%.
Conclusion: With increased attention being focused on the reliability of MRI in prostate cancer diagnostics, this study serves as a timely reminder of the limitations of standard techniques. It remains to be seen whether newer MRI techniques and Tesla strengths will improve specificity in particular.

UP.215
The Importance of Different MRI Sequences in the Measurement of Prostate Cancer Lesion Volume
Petrides N[1,2], Robertson N[1,2], McCartan N[1,2], Freeman A[1], Kirkhan A[1], Allen C[1,2], Emberton M[1,2], Moore C[1,2]
[1]University College Hospitals, London, UK; [2]University College, London, UK

Introduction and Objectives: Multiparametric MRI is of interest for the initial assessment of cancer burden within the prostate more widely used. At present we do not have a clear understanding of the relative importance of the different MRI sequences of a multiparametric MRI scan for cancer detection and volume measurement. We report differences in volume measurement between the different multiparametric MI sequences in a cohort of men in an active surveillance study.
Materials and Methods: MAPPED is a double blind randomized controlled trial comparing dutasteride or placebo in men on active surveillance for prostate cancer with a minimum lesion of 0.2cc on T2 weighted MRI. In the study Multiparametric MRI scans were taken at baseline, 3 and 6 months and reported separately by each of 2 uroradiologists with expertise in prostate MRI. Volumes for the lesions were measured on T2, contrast enhanced and diffusion images. We present a comparison of the volume of the primary lesion on baseline MRI between each of the sequences.
Results: Data for 40 patients are reported. The mean index lesion volume on T2 weighted images was 0.53 mls, compared to 0.52mls on contrast enhanced sequences and 0.42 mls on diffusion weighted sequences. The T2 weighted volume was the highest in 11 patients, diffusion sequences in 6 and contrast enhanced images in 22 with 1 patient having equal T2 and contrast enhanced volumes. Clinically significant difference (more than 33% different from T2) was present in 24 out of 40 patients, with 13 showing an increase in volume. Of those 9 were in the contrast enhanced sequence, 3 in diffusion and 1 in both. Of the 11 showing a reduction in volume 10 were in diffusion weighted and 1 in contrast enhanced imaging.
Conclusion: We demonstrated, in a small

number of patients, a significant variation between the volumes recorded on different MRI sequences. Diffusion series tend to underestimate the volume of the lesion while T2 and contrast enhanced sequences seem to produce more similar results. The difference is often of clinical significance with all 3 modalities upgrading the overall volume of the lesion. That should be taken into account when reporting volumes.

UP.216

A Comparison of Multiparametric MRI and Histoscan Imaging in Active Surveillance Patients

Petrides N[1,2], Robertson N[1,2], Freeman A[1], McCartan N[1], Kirkham A[1], Allen C[1], Emberton M[1,2], Moore C[1,2]
[1]University College Hospitals, London, UK; [2]University College, London, UK

Introduction and Objectives: Radiological imaging is widely used in the assessment of prostate cancer. Multiparametric MRI (mpMRI) shows high levels of accuracy in detecting cancer within the prostate, but HistoScanning as an ultrasound based technique might provide a cheaper, portable alternative. We report differences between index lesion volume detected on mpMRI and Histoscan in an active surveillance cohort.
Materials and Methods: Patients were recruited for an active surveillance study with a minimum of 0.2cc measurable lesion on mpMRI. Each man underwent baseline assessment with mpMRI and HistoScan. The mpMRI scans were reported by 2 experienced uroradiologists. The HistoScan data was assessed by analysts at Advanced Medical Diagnostics. All reporters were blind to the PSA and biopsy details although they knew that the patient had a prostate cancer diagnosis. We compared the volume of the index lesion on T2 weighted imaging to the index lesion volume on HistoScan analysis.
Results: In total 33 patients were scanned with both modalities at baseline. For MRI we demonstrated 39 lesions in 33 men (range 1-3, median 1), whilst Histoscan showed 89 lesions in 33 men (range 1-5; median 3). The mean MRI defined index lesion volume was 0.57mls (range 0.13-2.4mls), whilst for Histoscan it was 4.1mls (range 0.36-9.46 mls). When total prostate volume was compared between the two modalities, the mean volume was 50.7 mls on MRI and 45.0 mls on Histoscan.
Conclusion: There seems to be a very large discrepancy between MRI and Histoscan lesion volumes. This can be partly explained by the fact that Histoscan images tend to demonstrate more lesions as suspicious, than MRI images and also tend to measure larger volumes per lesion. The PHS02 study will report HistoScan volumes compared to 3mm step-section histology reported on a 5mm grid. This will allow correlation of true tumour volume with HistoScan volume.

UP.217

MRI-TRUS Fusion of Standard End Firing 2D US to Pre-Interventional MRI for Prostate Biopsy: Initial Results of a Novel Coregistration Approach

Orczyk C[1,2,3], Taneja S[4], Valable S[2], Fohlen A[5], Bensadoun H[1], Rosenkrantz A[6], Mikheev A[6], Villers A[7], Rusinek H[6]
[1]Dept. of Urology, University Hospital of Caen, Caen, France; [2]CERVOxy, ISTCT, Caen, France; [3]New York University Medical Center, New York, USA; [4]Div. of Urologic Oncology, Urology, New York University Medical Center, New York, USA; [5]Dept. of Radiology, University Hospital of Caen, Caen, France; [6]Dept. of Radiology, New York University Medical Center, New York, USA; [7]Dept. of Urology, University Hospital of Lille, University of Lille Nord de France, Lille, France

Introduction and Objectives: With improving accuracy of prostate cancer detection and localization using multi-parametric MRI (mpMRI), there is an increasing interest in mpMRI guidance of diagnosis and surveillance biopsy. Widespread application of such concept must address the challenging issues, including the ability to perform MRI-guided biopsy in real-time with adequate accuracy, and in the simple urology office environment. We propose and assess a new approach a new approach to directly coregister 2D standard TRUS to MRI.
Materials and Methods: The developed concept is to use a raw 2D Ultrasound (US) (B&K 8848 device) prostate image and register it to the corresponding MRI slice. Pre-acquired MRI data represents the whole gland in 3D as an ordered collection of 2D MRI slices of known thickness. We have developed software for US-MRI coregistration based on image intensity, texture, and boundaries. The power parameter P is directly proportional to algorithm speed and accuracy. The result is source US overlaying target MRI for visualization. The system was prospectively tested on 8 data sets corresponding to US images matching with prostate MRI. These data come from patients who underwent MRI prior to biopsy. Coregistration results were evaluated as success/failure by an expert urologist who interactively adjusted the transparency of US-MRI overlays and recorded the alignment of anatomical landmarks in both modalities, especially the veru montanum.
Results: The system was able to find the matching slice of T2WI for all single 2D standard US slice. In all cases the location of the veru montanum confirmed the coregistration accuracy in axial plan. The median rank of the T2WI slice was the fifth one among median number of 10 T2WI slices. We tested the power parameter P=1; P=5 and P=20. Twenty three coregistrations over 23 were correct. There was a significant positive correlation between prostate volume and time of computation for each P value. The image similarity reached a 0.93 mean Dice index using rigid transform. Mean distance to US-MRI boundaries was 1.35 mm.
Conclusion: A promising accurate novel platform appears promising for fusion of MRI data on 2D US images. The method doesn't require 3D US acquisition or tracking device. These initial results comfort our approach for further development for clinical application.

UP.218

Combination of Hyperbaric Oxygen Therapy and Surgical Debridement in Management of Fournier's Gangrene

Abbar M, Janane A, Dakkak Y, Ghadouane M, Ameur A
Dept. of Urology, Mohammed V Military Hospital, Rabat, Morocco

Introduction and Objectives: Hyperbaric oxygen therapy (HBOT) concomitant to surgery has been reported to reduce Fournier's gangrene (FG) mortality compared to exclusive surgical debridement. Most report from centers with relatively few patients using only surgical procedure. To assess efficiency of aggressive debridement with adjunctive HBOT. To evaluate Fournier's gangrene severity score index (FGSI) predictive value.
Materials and Methods: Seventy Fournier's gangrene (FG) treated by surgical debridement and HBOT. Data were evaluated physical examination findings, admission and final laboratory tests, surgical debridement extent, and antibiotic used. Patients had adjunctive (HBOT). FGSI, developed to assign a score describing the acuity of disease, was used. This index presents patients' vital signs, metabolic parameters (sodium, potassium, creatinine, and bicarbonate levels, and white blood cell count) and computes a score relating to the severity of disease at that time. Data were assessed according to whether the patient survived or died. All patients underwent surgical debridement. Wound debridement was regularly performed in the post-operative period.
Results: Of 70 patients, 8 died (11.4%) and 62 survived (88.5%). Difference in age between survivors (median age, 50.0 yrs) and non survivors (median age, 54.5 yrs) was not significant ($p = 0.321$). Median extent of body surface area involved in necrotizing process in patients who survived and did not survive was 2.4% and 4.9%, respectively ($p = 0.001$). Except for albumin, no significant differences were found between survivors and non survivors. Median admission FGSI scores for survivors and non survivors were 2.1 ± 2.0 and 4.2 ± 3.8, ($p = 0.331$).
Conclusion: FGSI score did not predict disease severity and the patient's survival. Metabolic aberrations, extent of disease seemed to be

important risk factors for predicting FG severity and patient survival.

UP.219

Penetration of Piperacillin-Tazobactam into Human Prostate: Dosing Considerations for Prostatitis Based on Site-Specific Pharmacokinetics and Pharmacodynamics

Kobayashi I[1], Ikawa K[2], Nakamura K[1], Nishikawa G[1], Kazikawa K[1], Yoshizawa T[1], Watanabe M[1], Kato Y[1], Zennami K[1], Kanao K[1], Yamada Y[3], Mitsui K[4], Narushima M[5], Morikawa N[2], Sumitomo M[1]

[1]Dept. of Urology, Aichi Medical University School of Medicine, Aichi, Japan; [2]Dept. of Clinical Pharmacotherapy, Hiroshima University, Hiroshima, Japan; [3]Dept. of Urology, Gifu Social Insurance Hospital, Gifu, Japan; [4]Dept. of Urology, Tokoname Municipal Hospital, Aichi, Japan; [5]Dept. of Urology, Meitetsu Hospital, Aichi, Japan

Introduction and Objectives: Piperacillin-tazobactam (PIPC-TAZ) is used for various infections such as urinary tract infections, and is also a therapeutic option for the treatment of prostatitis. However, its prostatic penetration has not been investigated in detail, and its pharmacokinetics-pharmacodynamics (PK-PD) at this site has not been evaluated. This study aimed to investigate the penetration of PIPC-TAZ into human prostate, and to assess effectiveness of PIPC-TAZ against prostatitis by evaluating site-specific PK-PD.

Materials and Methods: Patients with prostatic hypertrophy (n = 47) prophylactically received a 0.5 h infusion of PIPC-TAZ (8:1,2 g-0.25 g or 4 g-0.5 g) before transurethral resection of the prostate. PIPC-TAZ concentrations in plasma (0.5 to -5 h) and prostate tissue (0.5 to -1.5 h) were analyzed with a three-compartment PK model. The estimated model parameters were, then used to estimate the drug exposure time above the minimum inhibitory concentration for bacteria (T > MIC, the PD indicator for antibacterial effects) in prostate tissue for six PIPC-TAZ regimens (2.25 or 4.5 g; once, twice, three times or four times daily; 0.5 h infusions).

Results: Prostate tissue/plasma ratio of PIPC was about 36% both for the maximum drug concentration (Cmax) and the area under the drug concentration-time curve (AUC), regardless of the dose. PIPC:TAZ ratio of drug concentrations kept about 8:1 in prostate tissue as well as in plasma. Against MIC distributions for isolates of Escherichia coli, Klebsiella species and Proteus species, regimens of 4.5 g twice daily and 2.25 g three times daily achieved a >90% probability of attaining the bacteriostatic target for PIPC (30% T > MIC) in prostate tissue; regimens of 4.5 g three times daily and 2.25 g four times daily achieved a >90% probability of attaining the bactericidal target for PIPC (50% T > MIC) in prostate tissue. However, against Pseudomonas aeruginosa isolates, none of the tested regimens achieved a >90% probability.

Conclusion: This study investigated the penetration of PIPC-TAZ into human prostate tissue by monitoring the time course changes of the drug concentration in prostate tissue. PIPC-TAZ is appropriate for the treatment of prostatitis from the site-specific PK-PD perspective.

UP.220

Extravaginal Transposition of Urethra in Treatment of Postcoital Cystitis

Komyakov B, Fadeev V

Dept. of Urology, Mechnikov's Medical University, Saint-Petersburg, Russia

Introduction and Objectives: Cystitis is one of the most widespread urinary tract infections among females. This occurs mainly due to anatomical features of female urethra associated with some enhancing congenital or acquired risk factors, as urethral hypospadia and hypermobility. During sexual intercourse urethra displaces into vagina and retrograde contamination with vaginal flora may occur. Clinical manifestations of urinary tract infection can be observed in young females and are associated with the beginning of sexual relations. Complains may vary between rare episodes of dysuria and severe pain syndrome, affecting the sexual relations, social adaptation and quality of life. Surgical treatment is the most effective option in such patients, but conventional intervention has some potential drawbacks like continuous tension of urethra and compressing of vaginal sutures. Such situation increase risk of suture dehiscence and recurrence of disease. In order to improve the results of surgical treatment we have modified classic method of urethral transposiution.

Materials and Methods: From 2005 to 2013, in our clinic, we performed surgical treatment in 106 female patients with recurrent postcoital cystitis. In 19 (17.9%) hypospadia with localization of external urethral orifice in vagina was revealed and 87 (82.1%) demonstrated distal urethra hypermobility. Twenty-eight (26.4%) females underwent conventional distal urethroplasty according to O'Donnell technique and in 78 (73.6%) we've performed modified original extravaginal transposition of urethra.

Results: Six (5.7%) patients experienced suture dehiscence, back up displacement of urethra and recurrence of pathological condition. Five of them were operated using conventional technique. From all 28 patients, treated by O'Donnell intervention satisfactory results were achieved in 23 (82.1%), unsatisfactory – in 5 (17.9%). In women, who underwent new modified transposition of distal urethra, satisfactory results were reached in 77 (98.7%) and no effect only in 1 (1.3%) patient ($p<0.05$).

Conclusion: Our original technique of extravaginal urethral transposition compared with conventional operation enable to increase the reliability of urethra binding and decrease morbidity of intervention and risk of development of urethral stricture and recurrence of disease.

UP.221

Why Do We Need a Classification of Urogenital Tuberculosis

Kulchavenya E

Novosibirsk Research TB Institute, Medical University, Novosibirsk, Russia

Introduction and Objectives: Urogenital tuberculosis (UGTB) remains an important problem. Accurate classification is a base for good results of the therapy.

Materials and Methods: We classified 131 UGTB patients in 3 basic groups: kidney tuberculosis (KTB), male genital tuberculosis (MGTB) and generalized UGTB (gUGTB). KTB was divided in 4 stages with possible complications (tuberculosis of urinary tract (TB of ureter, bladder 1-4 grades, urethra), strictures, fistula, renal failure). MGTB implied orchiepidydimitis (mono- and bilateral), prostate TB (infiltrative or cavernous forms), TB of seminal vesicles, TB of penis with possible complications (strictures, fistula, infertility, sexual dysfunction).

Results: Among 131 patients in 67.2% the isolated KTB was diagnosed, in 25.2% – MGTB; 7.6% men had gUGTB with KTB-4. Total KTB was diagnosed in 75% of patients (including 8% of gUGTB). In spectrum of KTB more than half of the cases were destructive forms. KTB-3 was diagnosed in 22.4%, isolated KTB-4 - in 21.4%. But as 10 men gUGTB also had KTB-4, total share of destructive forms got 54.0%. KTB-1 was diagnosed in 10.2%, KTB-2 – in 39.8%. Clinical features and symptoms significantly varied between different forms of UGTB.

The approach to the therapy and management of UGTB was differential as well. KTB 1-2 stages were treated with chemotherapy, KTB-3 required partial nephrectomy, KTB-4 was indicated for nephrectomy. Stricture of ureter was indicated for reconstructive surgery in KTB 1-3 stages only. MGTB was treated with chemotherapy; fistula, discharge sinus were indicated for surgery. gUGTB was managed depending on forms of KTB and MGTB.

Conclusion: UGTB is a multivariant disease, and standard unified approach is impossible. Join term "UGTB" has insufficient information in order to estimate therapy, surgery and prognosis – as well as to evaluate the epidemiology. Using clinical classification will improve the efficiency of the therapy of UGTB.

UP.222

Prevalence of Urogenital Tuberculosis in Siberia

Kulchavenya E
Novosibirsk Research TB Institute, Medical University, Novosibirsk, Russia

Introduction and Objectives: Real estimation of urogenital tuberculosis (UGTB) is impossible, this disease is very difficult for early diagnosis, it used to hide under the guises of another disease and for ages patients are managed as "urogenital tract infections (UTI)", "urolithiasis", "recurrent cystitis" etc. So we can estimate only incidence rate, but we don't know how many patients are unrevealed.
Materials and Methods: Estimates of incidence and spectrum of extrapulmonary tuberculosis (EPTB) in Siberia have been made on the basis of the data available in the official reporting forms.
Results: As a whole 747 patients got sick of EPTB in Siberia in 2012, 30.0% among them were patients with UGTB. Age-gender proportion of UGTB patients is shown in diagram (Figure 1). UGTB was overlooked for 5.6 years on average: patients were managed with misdiagnoses of pyelonephritis (27%), cystitis (43%), cancer (8%) or urolithiasis (22%). Positive smear was in 17.2%, positive PCR results in 24.3% and positive culture of M.tuberculosis was in 44.3%. Young men with UGTB were sub-fertile in 54.2% and infertile in 25.9%, 14 patients had family UGTB.
Conclusion: Estimated prevalence of EPTB in Siberia is 2.0 per 100000 inhabitants, the share of UGTB is 30.0%, but there is big reservoir of non-reveled patients. It is necessary to improve the awareness on this disease both amongst doctors and within the population. At a glance we have a small number of UGTB patients. But if UTI is a problem of one patient, UGTB, as any other TB, has a social importance, as it is: i. a contagious disease, ii. a sexually transmitted disease, and iii. it leads to infertility.

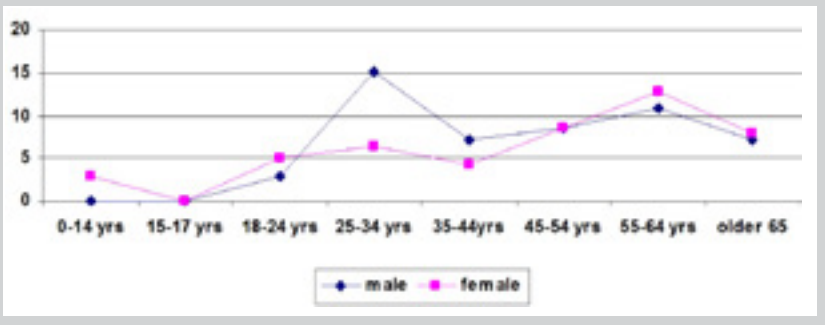
UP.223

The Role of Contraception and Phytotherapy in Prophylaxis of Cystitis Relapse: Gender Features of Cystitis

Kulchavenya E, Brizhatyuk E, Khomyakov V
Novosibirsk Research TB Institute, Medical University, Novosibirsk, Russia

Introduction and Objectives: The urinary tract is one of the most frequent sites of bacterial infection in humans, especially in women.
Materials and Methods: With purpose to estimate the influence of the method of contraception on a frequency of relapse of bacterial cystitis, 215 female patients with acute bacterial cystitis were analyzed retrospectively, as well as 89 female patients with recurrent cystitis were enrolled in open prospective comparative study. All these women were in reproductive age (on average of 31.4±2.8), all used the condom as contraceptive. These women were divided in 3 groups: 1st – 26 patients were treated for recurrent cystitis with standard therapy and continue contraception with condom, 2nd group - 31 patients, who after standard therapy changed contraception to oral pills, and 3rd group - 32 patients, who changed contraception to oral pills and took phytotherapy (canephron). Follow-up was 6 months.
Results: Among 215 patients in the retrospective part of the study, 44 were menopausal. Among the rest 219 patients in reproductive age, 19 took oral pills, 63 practiced coitus interrupted, and 129 (61.1%) used condoms. Thus there was significant negative correlation between barrier method of contraception and relapse of cystitis. In the prospective part of the study in 1st group relapse in 6 months was in 43.3%, and in 26.9% - twice. In 2nd group relapse was in 25.8%, in 12.9% - twice. Best results were in 3rd group - relapse occurred in 15.6% only, and no patients had relapse twice.
Conclusion: Barrier contraception predisposed to recurrent course of cystitis, and oral contraceptives reduced a risk of a relapse twice, additional intake of canephron – in three times.

UP.222, Figure 1.



UP.224

Clinical Characteristics of Acute Pyelonephritis after Radical Cystectomy according to Methods of Urinary Diversion

Nam J, Lee D, Han J, Park S, Lee S, Chung M
Pusan National University Yangsan Hospital, Yangsan, South Korea

Introduction and Objectives: We evaluated and compared the incidence of acute pyelonephritis and its bacterial identification according to urinary diversion method.
Materials and Methods: We analyzed data on 45 patients who underwent radical cystectomy and urinary diversion for bladder cancer between 2010 and 2012 and were observed at least 1 year postoperatively. Of the patients, 15 received an orthotopic bladder substitute (Group 1), ileal conduits (Group 2) and ureterocutaneostomy (Group 3) were created in 18 and 12 patients, respectively. The numbers of episodes of APN, identified microorganism were compared by diversion method.
Results: Compared with Group 1 patients in Group 2 and 3 demonstrated a significantly higher incidence of febrile urinary tract infection (p=0.032) and between Group 2 and 3 were similar (Group 1, 46.7% vs. Group 2, 16.7% vs. Group 3, 16.7%). Identified microorganism differed among the group. Enterococcus faecium, Escherichia coli and Pseudomonas aeruginosa were 5, 2, and 2 patients in Group 1. Enterococcus faecium were 3 patients in Group 2. Additionally Enterococcus faecium, Acinetobacter baumannii, Klebsiella pneumonia, and Enterobacter species were 1, 1, 1, and 2 patients in Group 3, respectively.
Conclusions: An orthotopic bladder substitution with a higher rate of diversion related acute pyelonephritis. Mostly identified microorganism after radical cystectomy related nosocomial infections. Especially, in the diversion method using intestine Enterococcus faecium and Escherichia coli were higher.

UP.225

Kidney Tuberculosis Therapy: How to Improve Tolerance

Kulchavenya E
Novosibirsk Research TB Institute, Medical University, Novosibirsk, Russia

Introduction and Objectives: Patients with tuberculosis (TB), including kidney tuberculosis (KTB) need long multi-drag chemotherapy, and compliance depends of the drug tolerance.
Materials and Methods: We analyzed side effects (SE) of the anti-TB chemotherapy in 117 patients with KTB. KTB 3-4 stages was diagnosed in 79 (67.5%), KTB 1-2 stages – in 38 (32.5%); 58 (49.6%) had bilateral KTB. Following complications, were revealed: TB of ureter – 17 (14.5%). Bladder TB – 30 (25.6%), chronic renal failure (CRF) – 24 (20.5%). Some co-morbidities were diagnosed: allergy

– 34 (29.1%), gastrointestinal tract disease – 18 (15.4%), cordial system diseases – 20 (17.1%), non-specific pyelonephritis – 12 (10.6%), chronic obstructive bronchitis – 6 (5.1%).
Results: Among all 117 patients, 48 (41.0%) had SEs, mostly in the beginning of the therapy: in 1 month – 32 (66.7%), 6 (12.5%) – in 2 months. Ninety five patients were treated by intravenous administration of isoniazid and rifampicin and by intramuscular injection of streptomycin, and took pyrazinamide per os (1st group). Twenty two received standard chemotherapy: isoniazid, pyrazinamide and rifampicin per os and intramuscular injection of streptomycin (2nd group). In the 1st group, SEs were in 35 (36.8%), and in the 2nd group – in 13 (59.1%) – P<0.005. More often SEs had women (62.5%). Most toxic drugs were pyrazinamide (87.5%), streptomycin (26.4%), ethambutol (23.3%), Isoniazid (18.2%). Bilateral KTB, CRF were factors of high risk of SEs development. But destructive forms as well as co-morbidity didn't show positive correlation with SEs.
Conclusion: Anti-TB therapy for KTB is complicated by SEs in 41.0%. Intravenous therapy has significantly better tolerance, than standard per os treatment. Most toxic drugs are pyrazinamide, streptomycin and ethambutol. Chance to have SE is higher in woman with bilateral KTB, complicated by CRF.

UP.226

Role of Chlamydia Trachomatis in Patients with Complicated Urinary Tract Infections

Kamel A[1], Badawy H[2], Abou Eitta A[2], El Saied M[2]
[1]Dept. of Urology, Theodor Bilharz Research Institute, Giza, Egypt; [2]Dept. of Microbiology, Theodor Bilharz Research Institute, Giza, Egypt

Introduction and Objectives: Complicated urinary tract infections occur in patients with a functionally or structurally abnormal genitourinary tract. Many different abnormalities may lead to a designation of complicated urinary tract infection, and these abnormalities will have different influences on the frequency of infection and occurrence of chronic complications. The aim of this study was to assess the role of Chlamydia trachomatis in the persistence of lower urinary tract symptoms (LUTS) and occurrence of chronic complications in male patients with complicated urinary tract infections (UTIs).
Materials and Methods: The study population consisted of 228 male patients with clinically diagnosed complicated UTIs. Patients included were either admitted to the Urology department or attending the Urology outpatient clinic in Theodor Bilharz Research Institute (TBRI). All patients were subjected to full clinical, biochemical and radiological (PUT & IVU) investigations. First voided urine (FVU) samples, mid-stream urine (MSU) and blood samples were collected from all patients. FVU samples were investigated for Chlamydia trachomatis antigen using direct fluorescent antibody (DFA). MSU samples were used for inoculating of conventional culture media. Blood samples were investigated for the presence of Chlamydia (C.) trachomatis IgG antibodies using Enzyme Immunoassay (EIA).
Results: This study included 228 male patients with complicated UTIs. Age range was 19-63 years old (median 37 years). All patients have associated genitourinary pathologies, namely: non-muscle invasive bladder cancer (10/228), chronic prostatitis (93/228), stones (18/228), urethritis (14/228), obstructive uropathy (25/228), urinary bilharziasis (20/228), epididymorchitis (23/228) and indwelling urethral catheter (25/228). Diabetic patients were 28% (64/228). Cultures of MSU samples showed significant bacterial growth in all patients, with E. coli as the predominant micro-organism (46.4%). C. trachomatis antigen was detected in urine in 53% (121/228) of patients, whereas serological evidence was detected in 96.7% (117/121) of positive cases. Chronic complications requiring surgical intervention occurred in seven patients (5.7%) with positive C. trachomatis tests; three patients with 2ry vaginal hydrocele on top of chronic epididymorchitis, two patients with a firm epididymal mass on top of chronic epididymitis and two patients with bladder neck obstruction on top of chronic prostatitis.Whereas chronic complications requiring prolonged medical therapy (>1 month) occurred in 76 patients, 35.5% (27/76) of them had positive C. trachomatis tests.
Conclusion: The management of complicated UTI is individualized depending on patient variables and the infecting organisms. Our study detects a high prevalence rate of C.trachomatis in cases with complicated UTI. Patients with persistent LUTS should be evaluated for this pathogen as it may act as an important factor in the occurrence of chronic complications.

UP.227

Uncomplicated Recurrent Urinary Tract Infections in Women: Fact or Myth?

Kolesnyk M[1], **Stepanova N[1]**, Lebed L[1], Romanenko O[1], Stashevska N[1], Kundin V[2]
[1]State Institution "Institute of Nephrology of the National Academy of Medical Sciences", Kyiv, Ukraine; [2]Dept. of Nuclear Medicine, Cardiology Center, Kiev, Ukraine

Introduction and Objectives: The aim of our study was to analyze the possible causes of recurrences in women with uncomplicated recurrent urinary tract infections (RUTIs).
Materials and Methods: We retrospectively evaluated 386 sexually active, non-pregnant women (mean age 32.7±9.3 yrs). The patients had been diagnosed with uncomplicated recurrent pyelonephritis in the primary treatment at the Clinic of our Institute between November 2004 and October 2013. All the data were collected from the medical records of the patients, namely: the clinical and laboratory evaluations; the gynecological examination; the 24-h urinary oxalate excretions; the results of urine, vaginal and the urethral samples cultures; the diagnostic imaging. In addition, pyelonephritis was documented by dimercaptosuccinic acid renal scintigraphy scan. The direct radioisotope cystography was performed in 35 women.
Results: This study showed that all of the women with uncomplicated RUTIs had: 1) pelvic inflammatory diseases, namely: cervicitis was diagnosed in 42% (162/386) of them; colpitis in 77% (297/386) of the patients; oophoritis in 21.8% (84/386) of the women; salpingitis in 70% (271/386) of patients. The concentration of Lactobacillus species in the vaginal microflora was significantly inverse correlated with the number of recurrences pyelonephritis per year (R=-0.62, P=0.007); 2) hyperoxaluria (≥ 45 mg/d) was identified in 78.2% (302/386) of the women and significantly correlated with the number of recurrences during the year (R=0.37, P<0.001); 3) Mollicutes: 33% (126/386) of the patients with uncomplicated RUTIs were infected by Mollicutes. The determination of U. urealyticum in the urethra was correlated with a large number of recurrences of UTI (R=0.19, P=0.04); 4) bilateral vesicoureteral reflux: 28.6% (10/35) of the women were diagnosed with vesicoureteral reflux. Seventeen percent (6/35) of them had bilateral vesicoureteral reflux. The presence of reflux was significantly associated with delayed emptying of the bladder (P=0.37; P=0.01).
Conclusions: We found that RUTIs in sexually active premenopausal women were associated with pelvic inflammatory diseases, hyperoxaluria, Mollicute infections and vesicoureteral reflux. It is therefore necessary to continue the studies in order to resolve the issue of evaluation of these symptoms as the complicating factors.

UP.228

A Comparison of the Safety and Efficacy of Thrombomodulin vs. Fragmin on Disseminated Intravascular Coagulation with Severe Urinary Tract Infection

Takeda H, Nakano Y, Narita H
Dept. of Urology, Tosei General Hospital, Aichi, Japan

Introduction and Objectives: Disseminated intravascular coagulation (DIC) is a clinical condition with high mortality that is characterized by the systemic activation of coagulation pathways resulting in multiple organ failure. Although no standard treatment for DIC has been established, recent reports have indicated that recombinant human soluble thrombomodulin (rTM) is effective against DIC.
Materials and Methods: To elucidate the

clinical characteristics and outcomes of DIC, we retrospectively analyzed 22 DIC patients who were treated with rTM (10) and Fragmin (12) at Tosei General Hospital over a 4-year period (All patients had urinary infectious diseases). A diagnosis of DIC was made based on the diagnostic criteria of the Japanese Association for Acute Medicine (JAAM) and Japanese Ministry of Health and Welfare (JMHW) for infectious diseases respectively.
Results: Initial mean Acute Physiology and Chronic Health Evaluation (APACHE) II, Sequential Organ Failure Assessment (SOFA) scores and DIC score were 5.31±2.5 (rTM: 4.23, Fragmin: 6.16), 10.36±4.43 (rTM: 8.00, Fragmin: 12.33), and 4.12±1.76 (rTM: 4.09, Fragmin: 4.07),respectively. In this study, 18 of the 22 DIC patients (81.8%) experienced resolution of DIC seven days after administration. There was no significant difference in the assessment of resolution of DIC seven days after administration and survival rate between the two groups of treatment. A higher survival rate was observed after a 28-day observation period in 20 of the 22 patients. A lower DIC score at the initiation of rTM treatment was closely related to a higher rate of resolution of DIC.
Conclusion: Our findings indicate that there was no significant difference in the assessment of the safety and efficacy between the two groups of treatment. Furthermore, making an accurate and early diagnosis of DIC and providing subsequent immediate treatment with rTM may improve the resolution of DIC.

UP.229
Utility of the UTI Severity Index in the Optimization of the Diagnostic and Therapeutic Effort for Urinary Tract Infection
Takeda H, Nakano Y, Narita H
Dept. of Urology, Tosei General Hospital, Aichi, Japan

Introduction and Objectives: The objective was to evaluate the utility of the UTI (urinary tract infection) severity index (USI) developed by Tosei General Hospital as a tool to streamline diagnostic and therapeutic effort.
Materials and Methods: USI included 1) SIRS index (negative, 1 positive, 2 positive), 2) Systolic blood pressure (>100 mm Hg, 90-100 mm Hg<90 mm Hg), 3) Plt (x1000/ul) (>120, 80-120, <80), 4) Hydronephrosis (negative, with urinary retention, positive), 5) Days after the onset of symptoms (<2 days, 2-3 days, 3 days<). Site of care of patients was recommended in accordance with the USI class: classes I (very low risk) and II (low risk) underwent treatment at home and classes III (intermediate risk), IV (high risk), and V (very high risk) were hospitalized. Class I comprised 31 patients, class II had 22, class III had 27, class IV had 9, and class V had 14 patients.
Results: A total of 78 patients were admitted into the hospital, 5 of whom required admittance to the intensive care unit, and 47 were managed as outpatients from the emergency room. Overall mortality was 3 patients (2.8%). Of these 3, all belonged to class V. Four original Critical Path for USI class >I were introduced and used under the Japanese diagnosis procedure combination based payment system.
Conclusions: In our experience Fine's USI classification, with rationalization and adaptation to the particularities of our hospital, is an effective tool for deciding on hospitalization for selecting the most suitable battery of diagnostic tests based on cost-benefit criteria. Therefore, although hospitalization of patients with UTI should be mainly based on clinical criteria, Fine's USI classification could help physicians and ER doctors in making more rational decisions in this respect. The USI and critical path method could make large undertakings easier to manage.

UP.230
Serum Procalcitonin Level for the Prediction of Severity in Acute Pyelonephritis
Lee J, Kim S, Park K, Huh J, Kim Y
Jeju National University, Jeju, South Korea

Introduction and Objectives: It is difficult to predict the progression to poor outcomes in patients of acute pyelonephritis (APN) without obvious symptoms and signs. Delay in diagnosis and treatment often results in rapid progression to septic condition. The aim of this study was to investigate the value of procalcitonin (PCT) level in women with APN.
Materials and Methods: We measured inflammatory biomarkers, and the severity of APN was assessed by 4 grade of disease classification system and stage of sepsis. We analyzed the value of PCT for the prediction of disease severity.
Results: A total of 681 female patients with APN were included. Patients were divided into 4 groups on the basis of systemic inflammatory response syndrome criteria (Infection no SIRS, Sepsis with SIRS, Severe sepsis and Septic shock). The median PCT level was higher in the septic shock group compared with other groups. White blood cell count was significantly different among the groups, whereas high-sensitivity C-reactive protein level and erythrocyte sedimentation rate revealed no differences. The area under the curve for PCT in predicting 28-day mortality was 0.62. For predicting mortality, a cut off value of 0.48 ng/mL had a sensitivity of 85% and a specificity of 50%. However, the disease classification systems were demonstrated to be superior to PCT in predicting 28-day mortality.
Conclusion: The serum PCT combined with other classic markers of inflammation was a helpful marker for the diagnosis of APN. In addition, PCT levels could be a useful predictor of the classification of severity and its respective treatment.

UP.231
Antimicrobial Prophylaxis Is Avoidable in Minimally Invasive Partial Nephrectomy Even When It Involves Urinary Tract Opening
Nakayama T, Kijima T, Nakanishi Y, Yoshida S, Ishioka J, Matsuoka Y, Numao N, Saito K, Fujii Y, Kihara K
Dept. of Urology, Tokyo Medical and Dental University, Tokyo, Japan

Introduction and Objectives: Recent guidelines have tentatively categorized partial nephrectomy (pN) as clean-contaminated surgeries. However, it remains controversial whether or not pN should be managed in the same manner as other procedures in this category. Given that our preliminary data demonstrated that antimicrobial prophylaxis (AMP) is avoidable in pN without urinary tract opening (UTO), the optimal management of patients with UTO is especially important in clinical practice. In this study, we prospectively evaluated the feasibility of intraoperative administration of antibiotics after UTO (on-demand AMP), as well as the non-use of AMP in patients with unexpected UTO during pN performed using the gasless laparoendoscopic single-port surgery techniques.
Materials and Methods: We evaluated 252 consecutive patients who underwent gasless single-port pN. After exclusion of 15 patients with uncontrolled diabetes, steroid use or concomitant infectious disease, the remaining 237 patients received pN without AMP. From August 2006 to April 2012 (n = 176), single-dose cephalosporin was administered as on-demand AMP if UTO occurred. From May 2012 to July 2013 (n = 61), no antibiotics were used regardless of UTO status. Postoperative infectious complications occurring within 30 days were investigated and categorized into superficial surgical site infection (SSI), deep SSI, and febrile urinary tract infection (UTI). When perioperative infection was found, antibiotics were administered immediately.
Results: Overall, infectious complications were observed in 7 (3.0%) patients. No patients had superficial SSI. UTO occurred in 61 (26%) patients: 40 (17%) with on-demand AMP and 21 (9%) without AMP. Of these 61 patients, febrile UTI occurred in one patient who received intraoperative ureteral stenting but no AMP. There was no significant difference in the incidence of infectious complications between patients who did or did not receive on-demand AMP for unexpected UTO. In multivariate analysis, perioperative ureteral stenting (p = 0.005) and higher blood loss (p = 0.038) were factors associated with increased risk of febrile UTI. All observed perioperative infections were successfully treated with additional antibiotics.
Conclusions: AMP is avoidable in minimally invasive pN even when UTO is involved,

UP.231, Table 1.

	Over all	UTO (–)	UTO (+)		*p* value
		AMP (–)	On-demand AMP (+)	On-demand AMP (–)	
Period		August 2006 – July 2013	May 2012 – April 2012	May 2012 – July 2013	
Number	237	176	40	21	
Superficial SSI (n) (%)	0 (0)	0 (0)	0 (0)	0 (0)	–
Deep SSI (n) (%)	1 (0.4)	1 (0.6)	0 (0)	0 (0)	0.742
Febrile UTI (n) (%)	6 (2.5)	5 (2.8)	0 (0)	1 (4.8)	0.293
Total (n) (%)	7 (3.0)	6 (3.4)	0 (0)	1 (4.8)	0.256

UTO: Urinary tract opening
AMP: Antimicrobial prophylaxis
SSI: Surgical site infection
UTI: Urinary tract infection

although patients with intraoperative ureteral stenting or higher blood loss should receive especially careful postoperative management.

UP.232

Analysis of Therapeutic Alternatives in the Treatment of Chronic Prostatitis/ Syndrome Chronic Pelvic Pain

Jimenez-Pacheco A[1], Jimenez-Pacheco A[2], Nogueras-Ocaña M[3]
[1]Santa Ana Hospital, Granada, Spain; [2]Virgen de las Nieves University Hospital, Granada, Spain; [3]San Cecilio University Hospital, Granada, Spain

Introduction and Objectives: Chronic / chronic pelvic pain syndrome (CP/CPPS) prostatitis is a disease whose exact prevalence and impact on patients, knowledge about the aetiology, pathophysiology, and optimal therapy is still uncertain, from being considered for years an infectious process, currently a syndrome with a variety of presentations, diagnostic and therapeutic challenges. Standard medical therapy with anti-inflammatory drugs, alpha-blockers, antibiotics and inhibitors of 5-alpha-reductase has not been uniformly effective, probably due to the multifactorial in its pathogenesis. The aim of this paper is to analyze the available evidence on different therapeutic in the treatment of patients with CP/CPPS alternatives.
Materials and Methods: We conducted a literature search of articles published in Pubmed database from 2000 to November 2013 on alternative therapies in the treatment of CP/CPPS, using keywords, with CP/CPPS included: *complementary, alternative, integrative, therapies, interventions, nutrition, phytotherapy, myofascial physical therapy, stress management/ cognitive behavioral therapy, biofeedback, extracorporeal shock wave therapy and acupuncture* in others. We have rejected the articles published in languages difficult to translate, lacking abstract and not adapted to the definition of this disease.
Results: Several of the existing alternative medical therapies for CP/CPPS treatment includes modification of diet and lifestyle, herbal medicine, oral immunostimulant bacterial extracts, acupuncture, biofeedback, hyperthermia, electrostimalation, extracorporeal shockwave, myofascial therapy and drugs action on the central and peripheral nervous system. Most studies use a placebo or sham control by control group, while others are compared with different modalities or treatment combinations directly.
Conclusions: The CP/CPPS often requires a multimodal approach alternative therapies should be deemed as an option in refractory to conventional therapies. Although many studies show a significant improvement priori total scores and subscores different NIH-CPSI (Index symptoms of chronic prostatitis the National Institute of Health), more controlled trials randomized are needed to get a statistically validation significant for many of these techniques become suitable therapeutic option for this complex pathology.

UP.233

Making of the Disease Severity Prediction Score in the Occlusive Pyelonephritis with the Urinary Calculi

Imaizumi K[1], Fujita K[1], Horie S[2]
[1]Dept. of Urology, Juntendo University, Shizuoka Hospital, Shizuoka, Japan; [2]Dept. of Urology, Juntendo University Hospital, Tokyo, Japan

Introduction and Objectives: For the occlusive pyelonephritis with the urinary calculi, because of rapid urinary tract confinement, the bacteria which increased in the renal pelvis invaded the renal vein easily and progressed to sepsis. I wanted to foresee the outcome of this disease at the time of the first medical examination, but there is little evidence in response to it. I examined the factor which predicts the disease severity and made a disease severity prediction score.
Materials and Methods: I attended 134 cases that I experienced in 13 years from 2001 through 2013. I experienced it at our hospital and related hospitals. I defined the cases using the vasopressor and blood culture-positive case after hospitalization as a serious case. Average age was 63.9 years old. Out of 134 cases, 35 were serious, and 96 were non-serious. I examined various kinds of factors about the serious illness examples and non-serious examples.
Results: Body temperature, heart rate, serum creatinine, white blood-cell count, the plates, age, which accepted a statistical significant difference ($P<0.05$). I made the disease severity prediction score in the occlusive pyelonephritis with the urinary calculi based on these factors. I defined 0 ~ 2 points as Very low risk, 3 ~ 5 points as Low risk, 6 ~ 9 points as High risk, 10 ~ 21 points as Very high risk. The ratio of severity is Very low risk: 0%, Low risk: 13%, High risk: 54.8%, Very high risk: 100%. And AUC was 0.86184 which has a high predictive ability. In addition, I examined the results of the prior days before finding that the last few days decreased to less than CRP5ng/ml. using the disease severity prediction score in the occlusive pyelonephritis with the urinary calculi downturn. A Very low and Low risk was for 4.3 days, High risk was for 6.3 days, Very high risk was for 9.7 days.
Conclusion: Our score had high precision for distinction of the aggravation, and it was thought that the disease severity prediction score in the occlusive pyelonephritis with the urinary calculi was proper clinically, and a primary care guidance of the occlusive pyelonephritis with the urinary calculi and the possibility that it was, was suggested.

UP.234

Possible Role of Corynebacterium Sp. in Causing Ulcerative Form of Bladder Pain Syndrome/Interstitial Cystitis (BPS/IC) and Results of Comprehensive Treatment

Loran O[1], Sinyakova L[1], **Vinarova N**[1], Kaprelyanc A[2]
[1]Dept. of Urology and Surgical Andrology, Russian Medical Academy of Postgraduate Education, Moscow, Russia; [2]Institute of Biochemistry, Bach Academy of Sciences, Moscow, Russia

Introduction and Objectives: BPS/IC is one of the leading causes of the chronic pelvic pain. There are many studies conducted for patients with BPS/IC, but the pathogenesis remains unknown. The aim of our study was to elucidate the frequency of infection agent presence in the urine of patients with BPS/IC using new cultural and PCR methods.
Materials and Methods: From 2012 to 2014 in our clinic, we examined 186 patients with recurrent infections and 27 patients of them had cystoscopycally proven BPS/IC. Eleven of these 27 patients had ulcerative changes and 16 had glomerulationes. In addition to the standard approach to screening patients, which included a urine culture to determine the growth of microorganisms, from 2012 we also conduct the PCR test for the presence of S16 rRNA which was performed in 13 IC/BPS and 17 patients with recurrent infections of the lower urinary tract (RLUTI), as a control group. The urine culture was negative in all patients.
Results: All strains isolated from patients with BPS/IC cases demonstrated the ability to form biofilms *in vitro*.PCR analysis in6 patients with BPS/IC showed the presence of S16 rRNA. Then in the control group, the results were negative. The DNA sequence unique to Corynebacterium sp. was identified in 6 patients. After analyzing the results, we found that all patients in urine of which have been isolated Corynebacterium sp, by PCR method has ulcerative form of BPS/IC. All patients underwent a comprehensive treatment which recommended by ESSIC and also include antibiotic therapy, which can penetrate biofilms, namely the group of Fluoroquinolones. Also in period after hydrodistention and ulcer coagulation, patients received course of hyperbaric oxygen (HBO) therapy, intravesicalinstillation include hyaluronic acid, heparin sulfate. Against the background of the treatment of all patients with BPS/IC was marked positive result: decreased urination during the day, increased urine, pain stopped. It was noted that in the context of comprehensive therapy, remission increased from up to12-14 months.
Conclusion: Our results raise again the possibility of biofilm forming bacteria Corynebacterium sp. involvement in the pathogenesis of BPS/IC, and specifically in ulcerative form. Complex therapy allows stabilize status of patients with BPS/IC, and increase disease-free period, helps to prevent disease progression and improves its forecast.

UP.235
Surfactant Protein A Prevents UPEC Adhesion to the Urothelial Surface and Inhibits Growth of UPEC in Urine
Hashimoto J[1], Ariki S[2], Uehara Y[3], Hasegawa Y[3], Takamiya R[2], Hiyama Y[1], Kurimura Y[1], Takahashi S[1], Takahashi M[2], Masumori N[1], Kuroki Y[2]

[1]Dept. of Urology, Sapporo Medical University, Sapporo, Japan; [2]Dept. of Biochemistry, Sapporo Medical University, Sapporo, Japan; [3]Dept. of Respiratory Medicine and Allergology, Sapporo Medical University, Sapporo, Japan

Introduction and Objectives: Uropathogenic Escherichia coli (UPEC) is the most frequent causative organism of urinary tract infection (UTI). Adhesion of bacterial pili to the host urothelial surface is the first step of infection. FimH, a lectin located on bacterial pili, binds to uroplakin Ia (UPIa), which is a membrane glycoprotein expressed on the bladder urothelium "umbrella cell". Surfactant protein A (SP-A) plays important roles in innate immunity against pulmonary infections in the lung. The expression of SP-A is reported in some organs besides the lung, but its function is not well understood. The purposes of this study were to investigate the existence of SP-A on the bladder and the function of SP-A in the innate immunity when a host develops UTI.
Materials and Methods: Expression of SP-A in the bladder was examined by immunohistochemistry and immunoblotting. Binding of SP-A to UPEC (J96) was determined by ELISA and immunoblotting. To determine the effect of SP-A on the growth of UPEC, J96 was cultured in human urine supplemented with recombinant SP-A. Binding of the FimH receptor-binding domain (FimH-RBD) and UPIa was determined by ELISA. The competitive effect of SP-A on binding between FimH-RBD and UPIa was also examined by ELISA. The effect of SP-A on adhesion of EGFP-expressing J96 to 5637 cells was observed with fluorescence microscopy.
Results: The expression of SP-A was detected in human bladder urothelial cells by immunohistochemistry and also in bladders of mice by immunoblotting. SP-A directly bound to UPEC in a Ca2+-dependent manner. SP-A dose-dependently inhibited the growth of UPEC in urine. Binding of FimH-RBD to UPIa was significantly inhibited in the presence of SP-A. Consistent with the competitive effect of SP-A on FimH binding to UPIa, adhesion of UPEC to bladder epithelial cells was decreased in the presence of SP-A.
Conclusion: Our data suggest that SP-A expressed in the bladder plays important roles in innate immunity against UTI. SP-A inhibits the adhesion of UPEC to urothelium and growth of UPEC in urine.

UP.236
Pathological Feature and Immunoprofile of Cystitis Glandularis Accompanied with Upper Urinary Tract Obstruction
Li A, Liu S, Zuo X, Zhang F, Lu H, Li W, Fang W, Zhang B
Dept. of Urology, Yangpu Hospital, School of Medicine, Tongji University, Shanghai, China

Introduction and Objectives: To explore the pathological feature and immunoprofile of cystitis glandularis accompanied with upper urinary tract obstruction.
Materials and Methods: Pathological sections from 32 cases of cystitis glandularis with upper urinary tract obstruction in Group A and 34 cases of cystitis glandularis without upper urinary tract obstruction in Group B were observed to pathological feature on microscopy. Meanwhile, an immunohistochemical analysis was employed to determine the expression of p53, Ki67, p21, MMP-9, MUC1, MUC2 and COX-2.
Results: In the two groups, main pathological type was transitional epithelial [17 cases (54.84%) in Group A; 21 cases (61.76%) in Group B], followed by intestinal epithelial [9 cases (29.03%); 7 cases (20.59%)], prostatic epithelial [2 cases (6.45%); 0] and mixed type [3 cases (9.68%); 6 cases (17.65%)], and the difference between the two groups was not significant. All immunohistochemical expressions of p53, Ki67, p21, MMP-9, MUC1, MUC2 and COX-2 in cystitis glandularis were positive in varying degrees, and there was no significant difference between the groups. The transitional epithelial type of cystitis glandular was compared with the mixed type, the difference of COX-2 was significant, $P<0.05$. The differences of immunohistochemical expression of p53, Ki67, p21, MMP-9, MUC1, MUC2 and COX-2 among other different pathologic types were not significant.
Conclusion: It is suggested that glandular cystitis accompanied with upper urinary tract obstruction share the same pathological feature and immunoprofile as that without upper urinary tract obstruction. Meanwhile, immunohistochemical expressions of P53, Ki67, p21, MMP-9, MUC1, MUC2, and COX-2 in cystitis glandularis have changed. The differences of Immunohistochemical expressions in different types of cystitis glandularis were not significant and the differences between the accompanied with or without upper urinary tract obstruction were also not significant. It is hard to anticipate the malignant tendency of glandular cystitis by the determination of immunohistochemical expression in tissue. Therefore, to the cystitis glandularis accompanied with upper urinary tract obstruction, the most important thing is to identify and remove the causes of upper urinary tract obstruction. Cystitis glandularis should be actively treated when the lesions are more serious; in other cases, long-term close follow-up should always be done.

UP.237
The Use of Hyaluronic Acid in Chronic Cystitis Treatment
Hasan P, Perepanova T
S.R. Urology Institute, Moscow, Russia

Introduction and Objectives: Hyaluronic Acid

(HA), a stabilizer of glycosaminoglycan layer, has been suggested to be an effective means of treatment at chronic cystitis. The objective of the study was to improve the results of chronic cystitis treatment.

Materials and Methods: A selection of 130 women (18-77 years, the mean age 42 years) were recruited. On the basis of standard urological tests added by cystoscopy and biopsy, 3 groups of patients have been determined: I- recurrent bacterial cystitis- 40%, II- chronic cystitis of postmenopausal period- 18%, III -non-bacterial forms of chronic cystitis- 42%. In 92% cases morpho-immunohistochemical study of bladder found a common sign of inflammatory infiltration in the bladder wall. The infiltration consisted of limfogystiocitarial cells with different correlation of the types of mononuclears: I: CD4- 24.72±1.29, CD8- 19.39±1.74, CD4\CD8- 1.27±0.74, CD16- 7.19±1.92, CD95- 4.15±0.84. II: CD4- 23.13±1.93, CD8- 11.72±0.97, CD4\CD8- 1.97±0.53, CD16- 5.34±1.23, CD95- 2.21±0.53. III: CD4- 23.94±4.56, CD8- 18.23±1.23, CD4\CD8- 1.31±0.86, CD16- 6.57±0.83, CD95- 6.24±0.89. These alternations are evidence of aggressive types of inflammatory infiltration resulting in disreparatory processes in interstitial tissue and bladder urothelium. Randomly chosen 30 patients from the 3 groups were treated with HA instillations 2 times a weak (10 instillations a course/3 courses in 1 month interval). The patients received instillations of HA at the dose of 40mg/10ml. taken 1:1 with 0.9% NaCl sol. exposed for not less than 2h. The control cystoscopy and biopsy were carried out on the 21th day.

Results: Considerable positive impact of the therapy (47% in VAS assessment) was reported by 83.3% of women. Recurrence intervals shortened 2.5 times. The post-treatment study of limfogistiocitarial infiltration revealed increase in regenerative capacity of epithelium and less signs of alteration in the interstitial and mucous membrane of bladder: I: CD4- 26.82±1.36, CD8- 16.21±1.33, CD4\CD8- 1.65±0.82, CD16- 5.35±0.78, CD95- 7.53±1.46. II: CD4- 22.47±2.04, CD8- 11.24±0.67, CD4\CD8- 1.99±0.45, CD16- 5.61±1.34, CD95- 2.43±0.44. III: CD4- 28.12±3.24, CD8- 16.45±1.51, CD4\CD8- 1.711±0.82, CD16- 4.98±0.65, CD95- 8.78±1.57.

Conclusions: HA, a stabilizer of glycosaminoglycan layer, has proved to be safe and effective means of local intravesicular therapy of various pathogenetic forms of chronic cystitis.

UP.238

Treatment Effects of Recombinant Human Soluble Thrombomodulin in Patients with Septic Urinary Tract Infection-Induced Disseminated Intravascular Coagulation

Hashimoto Y, Okuda N, Koiwa S, Hamamoto S, Kamiya H, Iwase Y
Toyota Kosei Hospital, Toyota, Japan

Introduction and Objectives: Urinary tract infection (UTI) complicates sepsis and/or disseminated intravascular coagulation (DIC) when the disease becomes severe; mortalities of septic DIC is reported to reach to 37% despite current therapy. Cross-talk between the coagulation system and inflammatory reactions during sepsis causes organ damage followed by multiple organ dysfunction syndrome or even death. Therefore, anticoagulant therapies have been expected to be beneficial in the treatment of severe sepsis. Recombinant human soluble thrombomodulin (rhTM) binds to thrombin to inactivate coagulation, and the thrombin-rhTM complex activates protein C to produce activated protein C. The purpose of this study was to examine the efficacy of rhTM for treating patients with septic UTI-induced DIC.

Materials and Methods: This study comprised 45 patients with septic UTI-induced DIC. All patients fulfilled the criteria of severe sepsis and the International Society on Thrombosis and Haemostasis criteria for overt DIC. The initial 25 patients were treated without rhTM (control group), and the following 20 consecutive patients were treated with rhTM (0.06 mg/kg/day) for six days (rhTM group). The primary outcome measure was 28-day mortality. Stepwise multivariate Cox regression analysis was used to assess which independent variables were associated with mortality. Comparisons of Sequential Organ Failure Assessment (SOFA) score on sequential days between the two groups were analyzed by repeated measures analysis of variance.

Results: Cox regression analysis showed 28-day mortality to be significantly lower in the rhTM group than in the control group (adjusted hazard ratio, 0.301; 95% confidence interval, 0.104 to 0.867; P = 0.028). SOFA score in the rhTM group decreased significantly in comparison with that in the control group (P = 0.029). In the post hoc test, SOFA score decreased rapidly in the rhTM group compared with that in the control group on day 1 (P < 0.05).

Conclusion: We found that rhTM administration may improve organ dysfunction in patients with septic UTI-induced DIC. Further clinical investigations are necessary to evaluate the effect of rhTM on the pathophysiology of septic UTI-induced DIC.

UP.239

Comparison between Spontaneous Acute Prostatitis and Biopsy-Related Acute Prostatitis

Kim J[1], Chae J[1], Yoon C[1], **Kang S**[2], Park H[1], Kim J[2], Moon D[1]
[1]Dept. of Urology, Korea University Guro Hospital, Seoul, South Korea; [2]Dept. of Urology, Korea University Anam Hospital, Seoul, South Korea

Introduction and Objectives: To investigate the clinical characteristics and pathogens of acute bacterial prostatitis and to verify the differences between spontaneous acute prostatitis group and biopsy-related acute prostatitis group.

Materials and Methods: We retrospectively reviewed the records of 109 patients hospitalized for acute prostatitis between June 2007 and June 2012. Acute bacterial prostatitis was diagnosed in all patients according to typical

UP.239, Table 1. Comparison of clinical characteristics and laboratory data between spontaneous acute prostatitis group and biopsy-related acute prostatitis group

	S-ABP (n=82)	BX-ABP (n=27)	*p*-value
Age	60.0 ± 14.3	66.7 ± 7.4	0.002*
Hospitalization (day)	7.9 ± 5.1	8.6 ± 5.5	0.586
Peak fever (°C)	38.2 ± 0.8	38.9 ± 0.9	0.000*
WBC (x10^3/㎕, peak level)	13.78 ± 6.10	13.39 ± 5.07	0.764
ANC (x10^3/㎕, peak level)	10.51 ± 4.81	11.75 ± 4.47	0.308
ESR (mm/hr, peak level)	56.0 ± 33.7	49.1 ± 35.8	0.473
CRP (mg/L, peak level)	101.0 ± 79.8	85.7 ± 48.4	0.471
TRUS (g, total volume)	39.4 ± 24.6	52.3 ± 24.0	0.030*
TRUS (g, transition volume)	17.8 ± 17.1	29.6 ± 19.7	0.007*
Urine culture positive	44 (53.6%)	12 (44.4%)	0.406
Blood culture positive	9 (10.1%)	15 (55.6%)	0.000*
Overall culture positive	45 (54.9%)	17 (63.0%)	0.951
E. coli	29 (64.4%)	15 (88.2%)	0.037*
Quinolone resistance	9 (20.0%)	11 (64.7%)	0.001*
EBSL positive	4 (8.9%)	9 (52.9%)	0.024*

symptoms (fever, voiding difficulty, pain on digital rectal examination) and laboratory tests. Clinical variables (age, underlying disease, symptoms, admission and treatment duration, fever duration), prostate volume, laboratory tests such as CBC with differential count, ESR (erythrocyte sedimentation rate), CRP (C-reactive protein) and urine analysis were reviewed. Patients were divided into two groups (spontaneous acute prostatitis group; S-ABP and biopsy-related acute prostatitis group; BX-ABP) and compared.
Results: The mean age of patients was 61.7 (18-87). Of the 109 patients, 62 (56.9%) had positive urine and/or blood cultures. Patients in BX-ABP showed significantly higher age, prostate volume, peak fever and septicemia than patients in S-ABP. Of the 82 patients with S-ABP, 45 (54.9%) had positive urine and/or blood cultures, including E. coli (64%), ESBL-producing bacteria (8.9%). Of the 27 patients with BX-ABP, 17 (63.0%) had positive urine and/or blood cultures, including E. coli (88.0%), ESBL-producing bacteria (52.9%).
Conclusion: Patients in BX-ABP showed greater incidence of septicemia, E. coli, quinolone-resistance bacteria, ESBL-producing bacteria than patients in S-ABP.

UP.241
Proposal of Routine Percutaneous Drainage for Emphysematous Pyelonephritis: Evidence from Single Institutional Experience and Systemic Review
Luo H, Chaing P
Chang Gung Medical Center, Kaohsiung, Taiwan

Introduction and Objectives: Emphysematous pyelonephritis (EPN) is an acute necrotizing renal infection which associates with high mortality rate. Though the mortality rate gradually decreased according to the reviewed literatures, EPN is still a challenging condition during clinical practice at emergency room or intensive care unit. The aim of this study is to set a treatment flowchart in which routine use of PCD intervention was applied for patients with EPN.
Materials and Methods: A systemic search on the Pubmed was made from 1980 to 2012. Finally eighteen series included our institutional data (33 patients) were analyzed in this study. Safety, renal function and survival outcome of PCD intervention for patients with EPN was analyzed according to single institutional experience and systemic review.
Results: In the era of PCD intervention, the mortality rate of patients with EPN dramatically decreased. For severe EPN disease with the need of nephrectomy, preoperative PCD intervention cause less mortality. For less severe disease, PCD still shows benefit in renal function preservation and low mortality rate. Few major complications related to PCD were observed in this series. Reassessment by CT image should be considered for progressed disease and repeated PCD also carried high success rate.
Conclusion: This study proposed a treatment flow chart in which routine PCD for patients with EPN in order to achieve better survival and renal function outcome.

UP.242
Treatment of Cyst Infection in Autosomal Dominant Polycystic Kidney Disease Patients
Onitsuka S[1], Inui M[1], Koike M[2], Toda J[3]
[1]Dept. of Urology, Yachiyo Medical Center, Yachiyo-shi, Japan; [2]Dept. of Nephrology, Yachiyo Medical Center, Yachiyo-shi, Japan; [3]Dept. of Radiology, Yachiyo Medical Center, Yachiyo-shi, Japan

Introduction and Objectives: It is often that the cyst infection of Autosomal Dominant Polycystic Kidney Disease (ADPKD) suffers from treatment. We review the treatment cases in our institution experience.
Materials and Methods: Between December 2006 and December 2013, cyst infection of the ADPKD in hemodialysis patients who made hospitalizing in our institution was eight cases.
Results: Mean patient age was 64.8 years (range 46 to 71) and male to female ratio was 3:5. Mean hemodialysis career was 16.2 years (range 0.5 to 28). The renal artery embolization reducing ADPKD volume size had been performed by four patients in another hospital. Antibacterial treatment was taken in all cases and percutaneous cyst drainage was performed in two cases. Finally, nephrectomy was performed in two cases. Pathogenic bacterium confirmed by blood culture was Klebsiella in three cases, E.coli in one, Citrobacter in one. Antibacterial agent which had been used was ciprofloxacin in three cases, tazobactam / piperacillin in three, meropenem in two, ceftazidime in one and vancomycin in one. In one severe infectious case used γ-globulin, endotoxin absorption was performed. In two nephrectomy cases, each operative side was left. Each operative time was 150 and 108 minutes and surgical bleeding was142 and 50ml. Blood transfusion was not performed. Each hospital stay was 29 and 15 days. One case developed postoperative pancreatitis. Excised kidney weight of each two cases was 1254g and 2411g.
Conclusion: ADPKD cyst infection recurring by conservative treatment performed nephrectomy family, but careful treatment preferences are required in consideration of a complication with the surgery and general overall status. The case that the identification of the infection site has difficulty with is present for a multiple cyst and suffers from treatment.

UP.243
Risk Factors of Septic Shock in Obstructive Acute Pyelonephritis
Cho D, Jang S, Son J, Lee J
Dept. of Urology, Bundang Jesaeng General Hospital, Seongnam, South Korea

Introduction and Objectives: The aim of this study was to identify the risk factors for developing septic shock in patients with obstructive acute pyelonephritis (APN) associated with upper urinary tract calculi.
Materials and Methods: Between January 2004 and December 2013, 73 patients with obstructive acute pyelonephritis associated with upper urinary tract calculi admitted at our institution. Medical records of 73 patients (14 men and 59 women, mean age of 56.6 years) were retrospectively reviewed. The risk factors for septic shock were analyzed using multivariate logistic regression analysis.
Results: Of the 73 patients, 37 patients (50.7%) developed septic shock. Old age, poor performance status and history of hypertension in septic shock group were more common than in non-septic shock group ($p<0.001$, $p=0.001$ and $p=0.012$). Platelet to lymphocyte ratio (PLR), neutorophil to lymphocyte ratio (NLR), C-reactive protein (CRP) level and grade of hydronephrosis in septic shock group were significantly higher than in the non-septic shock group ($p=0.042$, $p<0.001$, $p=0.006$ and $p<0.001$ respectively). Platelet count and albumin level in septic shock group were significantly lower than in the non-septic shock group ($p=0.008$ and $p<0.001$, respectively). Multivariate logistic regression analysis indicated that poor performance status (OR 11.14, $p=0.029$), decrease in platelet count (OR 0.03, $p=0.024$), high NLR (OR 21.72, $p=0.007$) and severe hydronephrosis (OR 13.12, $p=0.016$) were independent risk factors for developing septic shock.
Conclusion: Patients with obstructive APN associated with upper urinary tract calculi who had poor performance status, decrease in platelet count, high NLR and severe hydronephrosis should be treated with caution against the development of septic shock.

UP.244
Clinical Manifestation and Prognosis of Emphysematous Pyelonephritis
Kim S[1], Kim S[2], Sohn D[1]
[1]Yeoeuido St. Mary's Hospital Catholic University Medical College, Seoul, South Korea; [2]Jeju National University Hospital, Jeju-si, South Korea

Introduction and Objectives: Emphysematous pyeloneohritis is a severe necrotizing infectious disease that involves gas formation on the renal parenchyma and its surrounding tissues. Its ideal management is still controversial and clear prognosis on the disease is still non-existent. Thus, this study was carried out to identify clinical characteristics; differences in clinical outcomes depending on the treatment; mortality risk factors.
Materials and Methods: The study subjects

were 22 patients diagnosed with emphysematous pyeloneohritis who were hospitalized at our hospital. They were divided into a survival group and non-survival group, and the following were analyzed retrospectively among all of them: medical history; physical examination; blood tests; blood cultures; abdominal computed tomography finding. The management for those patients was classified into the following cases: only antibiotics was used; antibiotics with percutaneous drainage was done, antibiotics with ureteral stents was inserted; antibiotics with nephrectomy was done. Finally, whether or not they died during their hospitalization was analysed.

UP.244, Table 1.

	Survived EPN	Died from EPN	*P*
Male/Female	4/12	1/5	0.173
Age	55.2±9.9	51.0±19.0	0.802
Diabetes mellitus	14	3	0.143
Location			0.525
Left	10	3	
Right	4	1	
Bilateral	2	2	
Systolic Blood Pressure	120.7±24.0	106.2±29.8	0.231
Diastolic Blood Pressure	74.1±14.4	67.5±12.0	0.294
Heart Rate	102.7±9.5	107.3±4.9	0.098
Respiratory Rate	21.3±1.9	25.8±4.8	0.083
Body temperature	37.7±0.8	38.1±0.9	0.407
Symptoms duration	5.1±3.5	7.3±4.2	0.178
White Blood Cell count	16.6±8.8	20.0±5.3	0.294
Hemoglobin	10.5±1.7	9.8±2.3	0.407
Platelet count	146.2±32.2	74.7±42.5	0.001
Serum Glucose	287.4±147.3	332.0±168.5	0.590
Serum Creatinine	2.8±2.1	2.9±1.6	0.494
Serum Albumin	2.9±0.5	2.6±0.4	0.134
Prothrombin Time	13.3±4.2	19.2±8.7	0.021
Partial Thromboplastin Time	36.5±20.7	62.1±44.2	0.134
Sepsis	11	5	0.494
Shock	1	4	0.03
DIC	5	3	0.416
Organism			0.839
E. coli	12	5	
Pseudomonas	1	0	
Klebsiella	2	1	
Proteus	1	0	
Huang and Tseng Classification			0.073
Class 1	3	0	
Class 2	8	0	
Class 3A	1	2	
Class 3B	2	2	
Class 4	2	2	
Treatment			
Antibiotics alone	4	1	1.0
Antibiotics with Percutaneous drain	7	1	0.351
Antibiotics with Ureteral stent	2	0	1.0
Antibiotics with Nephrectomy	3	4	0.054

Results: A comparative analysis into the survival group and non-survival group showed that there were no differences in gender, age, diabetes status, lesion location, initial hemodynamic status, and symptom duration. Also, there were no significant differences between the two groups in the laboratory findings on white blood cells counts, hemoglobin, blood glucose, serum creatinine, and serum albumin. Also, there were no differences between the two groups in septicemia status, causative bacteria, and treatment method. However, the non-survival group showed significant reduction in platelet counts, and disseminated intravascular coagulopathy was often involved. Furthermore, the group had a high proportion of shock patients at admission.

Conclusions: The analyzed evidence suggests that significant reduction in platelet counts, disseminated intravascular coagulopathy, and shock at admission seem to be significant risk factors for mortality in patients with emphysematous pyelonephritis Therefore, more active treatment is obviously needed when such patients are hospitalized.

UP.245

Antibiotic Prophylaxis and Risk Factors of Infectious Complication after Endourologic Procedures of the Upper Urinary Tract

Kim S[1], Kim Y[1], Park K[1], Huh J[1], Sonh D[2]
[1]*Dept. of Urology, Jeju National University, Graduate School of Medicine, Jeju, South Korea;* [2]*Dept. of Urology, The Catholic University of Korea, School of Medicine, Seoul, South Korea*

Introduction and Objectives: Antibiotic prophylaxis (AP) is commonly used in endourologic procedures of the upper urinary tract to prevent infectious complication. We investigated a retrospective analysis of infectious complication and its risk factors after endourologic procedures of the upper urinary tract, focusing on AP.

Materials and Methods: We studied in 488 cases for simple diagnosis or treatment of the upper urinary tract. Endourologic procedures included ureteral stenting, percutaneous nephrostomy, retrograde pyelography, diagnostic ureteroscopy. An infectious complication was defined as an infection with fever (≥38°C) occurring, or positive culture in blood or urine, or urosepsis within one month of follow-up. We calculated that kind of AP and the incidence of infectious complication with respect to each procedure and attempted to find the risk factors.

Results: AP was totally used in 456 (93.3%) cases of all. Fluoroquinolone was the most popular antibiotics of them all. There were 17

(3.7%) infectious complication cases after all of procedures, they were the highest incidence by 7 cases (6.0%) after percutaneous nephrostomy. Bacteriuria, hydronephrosis, whether or not ureteral stent, or nephrostomy, or foley catheterization prior to examination or treatment was an independent risk factors for infectious complication (p-value <0.05).
Conclusion: Fluoroquinolone was the most popular in AP and the incidence of infectious complication was the highest after percutaneous nephrostomy. Bacteriuria, hydronephrosis, whether or not uretral stent, or nephrostomy, or foley catheterization prior to examination or treatment was an independent risk factors of infectious complication after endourologic procedures of the upper urinary tract.

UP.246
Patients with Struvite Stones Need to Be Extensively Investigated: Experience from a Metabolic Stone Clinic
Shah S**, Somani B**, Cook P
University Hospital Southampton NHS Trust, Southampton, UK

Introduction and Objectives: At our institution patients are referred to the metabolic stones clinic for extensive metabolic evaluation if they are in a high-risk category. This includes patients <25 years, recurrent stone formers, presence of bilateral stones, single kidney, nephrocalcinosis, inflammatory bowel disease or other malabsorption syndrome, those with the metabolic syndrome phenotype and non-calcium oxalate stones. We investigated whether extensive metabolic evaluation is appropriate in patients where stone analysis has demonstrated struvite (an indicator that infection has played a significant part in the aetiology of the stone).
Materials and Methods: All patients referred to the metabolic stone clinic over a 3-year period (October 2010 – October 2013) who had stone analysis and whose stone contained struvite were included. Results of their metabolic evaluation were reviewed. Urinary metabolic evaluation at our centre includes random cystine, pH, TmPGFR and a 24-hour urine collection for creatinine, calcium, oxalate, citrate, urate, magnesium and sodium.
Results: Ten patients were identified. Six (60%) had biochemical abnormalities. The breakdown of biochemical abnormalities in the remaining patients were: primary hyperparathyroidism (1), incomplete distal renal tubular acidosis secondary to medullary sponge kidneys (1), incomplete distal renal tubular acidosis secondary to acetazolamide (1), idiopathic hypercalciuria (2), salt and protein induced hyercalciuria, hyperoxaluria and hyperuricosuria (1). Two patients with biochemical abnormalities had stone constituents not typically associated with infection (calcium oxalate and brushite) compared to one patient with calcium oxalate who had no biochemical abnormalities.
Conclusions: Extensive metabolic evaluation in patients with struvite stones is worthwhile. The presence of other stone components not typically associated with infection is not helpful in refining which patients with struvite stones should be investigated further.

UP.251
Risk Factors and Indications of Febrile Complications after Shockwave Lithotripsy
Kim S[1], Kim Y[1], Park K[1], Huh J[1], Sohn D[2]
[1]Dept. of Urology, Jeju National University, Graduate School of Medicine, Jeju, South Korea; [2]Dept. of Urology, The Catholic University of Korea, School of Medicine, Seoul, South Korea

Introduction and Objectives: To date, there is a controversy about whether it is useful of antibiotic prophylaxis (AP) of patients with urinary lithiasis for extracorporal shockwave lithotripsy (ESWL). We investigated a retrospective analysis of febrile complications and its risk factors after ESWL, focusing on AP.
Materials and Methods: Between 2009 and 2013, we studied in 1211 cases for patients with urinary lithiasis for ESWL. Because stone analyses were not available in most of patients, management of stones larger than 2cm in diameter were ruled out from this analysis to minimize the ratio of infected stones as a possible cause for postprocedural fever. And in case of several times of ESWL in the same patient, the procedure was considered by another case respectively. In this analysis, 985 cases were enrolled. The outcome included positive urine culture, size and site of urinary lithiasis, counts of ESWL, the administration of AP, catheterization before ESWL, and clinical symptoms like fever>38°C or chilling.
Results: There were 58 cases (5.9%) of asymptomatic bacteriuria, 23 cases (2.3%) of febrile complications, 3 cases (0.3%) of urosepsis and 11 cases (1.1%) of the administration of AP. Positive urinary culture, previous symptomatic urinary tract infection (UTI), a indwelling nephrostomy tube or ureteral stent during the procedure, renal stone or upper ureter stone, and count of ESWL more than second times were independent risk factors for febrile complication (P<0.05, P<0.001). Foley catheterization for ESWL, stone size, mid and lower urinary stone were not associated with increased risk of fever after ESWL.
Conclusion: In this study, the rate of febrile complication after ESWL and asymptomatic bacteriuria were very low. Therefore AP is not indicated in all patients. Selective AP is recommended in patients who present with risk factors above mentioned in results.

UP.252
Comparison of the Clinical Parameters of Men with Impaired Arterial Blood Supply to the Pelvis Due to Different Etiologies
Kogan M**, Belousov I**
Rostov State Medical University, Rostov-on-Don, Russia

Introduction and Objectives: Persistent pain and high incidence of lower urinary tract

UP.252, Table 1.

Characteristic	Group 1	Group 2	Voluntary
% patient with Persistent Pain	73.4	92.0	-
Intensive of Pain, Me (LQ; UQ) points.	5.0 [3.5; 7.0]	5.0 [3.0; 6.0]	-
% patient with LUTS	54.8	84.0	-
Score of symptoms, Me (LQ; UQ) points.	8.5 [5.7; 14.0]	14.0 [9.0; 19.0]	-
Correlation between the I-PSS and VAS	0.25 – 0.75	0.61 – 0.87	-
Vmax (R), Me (LQ; UQ) cm/sec	11.9 [8.8; 15.9]	7.1 [6.1; 8.1]	19.6 [17.4; 21.9]
Vmax (L), Me (LQ; UQ) cm/sec	11.4 [8.4; 16.5]	6.7 [5.2; 8.5]	20.6 [19.2; 22.6]
Ri (R), Me (LQ; UQ)	0.63 [0.58; 0.70]	0.70 [0.64; 0.74]	0.62 [0.62; 0.64]
Ri (L), Me (LQ; UQ)	0.64 [0.57; 0.73]	0.68 [0.62; 0.73]	0.62 [0.61; 0.64]
Correlation between the PI and Vmax	0.276	0.783	-
Comment: Vmax - peak systolic velocity of arterial flow in right (R) and left (L) capsular prostatic artery. Ri - vascular resistance index.			

symptoms (LUTS) are common in patients with non-inflammatory chronic pelvic pain syndrome (CPPS IIIB). The mechanisms of development of these symptoms are not well established. We earlier demonstrated that pelvic blood flow and supply are affected in patients suffering from CPPS III B.
Materials and Methods: The clinical data of patients with CPPS III B (Group 1), mean age 32, ranging 27 to 37, with average duration of disease of 4.0 years (range 2.5 - 6 years) was compared to men with systemic atherosclerosis and occlusive lesions of the common and internal iliac arteries (Group 2), mean age 45, ranging 42 to 49, with average duration of disease of 5 years, range 3.5-8 years. Pain was evaluated using a visual analog scale (VAS). LUTS were assessed using I-PSS questionnaires. All patients underwent Transrectal Color Doppler of the prostate (TCD). A group of healthy volunteers also underwent TCD. Data are presented as Median (Me) value with interquartile range: Lower Quartile (LQ), Upper Quartile (UQ).
Results: The results are presented in the Table 1.
Conclusion: From the data presented above, we established the similarity of clinical parameters in patients with CPPS III B and patients with established atherosclerotic disease. Both groups demonstrate deficiency in the intraprostatic blood flow. The presence of correlation between symptoms and decreased arterial blood flow to the prostate supports the proposed ischemic etiology of pelvic pain and LUTS.

UP.253
Urogenital Tuberculosis in a Region with a High Prevalence of Human Immunodeficiency Virus Infection and Multi-Drug Resistant Tuberculosis
Ackermann H[1], **Bonkat G**[1,2], Heyns C[1], Zarrabi A[1], Smit S[1], van der Merwe A[1]
[1]Dept. of Urology, Stellenbosch University and Tygerberg Hospital, Tygerberg, South Africa; [2]Dept. of Urology, University Hospital Basel, Basel, Switzerland

Introduction and Objectives: Data on urogenital tuberculosis (UGTB) are scant. The objective of the present study was to describe the clinical characteristics of patients with UGTB in a region with a high prevalence of human immunodeficiency virus (HIV) infection.
Materials and Methods: A retrospective review was performed of the clinical records of 84 patients seen at our institution (an academic tertiary care centre) from July 2007 to March 2014 with a confirmed diagnosis of UGTB. Acid-fast bacilli (AFB) smear, urine tuberculosis culture, urine tuberculosis polymerase chain reaction (PCR), and histopathologic findings were used for patient selection.
Results: The median age of patients was 42.3 years (range 13.4 to 79.6). The male to female ratio was 3:1. The median time from initial presentation to definitive diagnosis of UGTB was 5.3 weeks (range 0.1 to 286.6). Concomitant TB affected the lungs (46.4%), abdomen and skeletal system (both 4.8%), brain (3.6%), and lymph nodes (2.4%). Thirty-five (42.2%) patients were HIV-positive. Multi-drug resistant (MDR) Mycobacterium tuberculosis was identified in 11.9% of the patients. The most common organs involved were the kidneys (48.8%), the testis/epididymis (48.8%), the ureter (33%) and bladder (25%). In 42 patients (50%) more than one organ system was involved. Multi-drug therapy was given for a mean of 6.6 months (range 6 to 24) in all patients. Procedures related to UGTB included orchidectomy (20.2%), ureteral stent insertion (16.7%), nephrostomy placement (15.5%), nephrectomy (8.3%), ureteral dilatation (6%), and cystoplasty (2.4%). Eight (9.5%) patients died during follow-up.
Conclusion: UGTB is a destructive disease in which surgery still plays an important part. More than one organ of the urogenital tract is frequently affected highlighting the need for both a strong awareness of such possibility and thorough initial clinical examination. UGTB remains a potentially lethal disease, especially when associated with HIV and MDR infection.

UP.254
Cystoscopy in the Investigation of Recurrent Urinary Tract Infections in Women
Payne S[1], Oades G[2]
[1]University of Glasgow, Glasgow, Scotland, UK; [2]Southern General Hospital, Glasgow, Scotland, UK

Introduction and Objectives: Recurrent urinary tract infection (rUTI) is a major health burden in general urology practice as well as in the community. EAU do not recommend the routine investaigation of women with rUTI with cystoscopy. Despite this, a large number of women with rUTI are investigated with cystoscopy. The aim of this study was to investigate the role of cystoscopy in the investigation of recurrent urinary tract infections in women.
Materials and Methods: A retrospective review of consecutive cases within a single institution was carried out. All women undergoing their first cystoscopy to investigate recurrent urinary tract infection (rUTI) over a 12 year period from January 1997 to May 2011. Female patients with a diagnosis of recurrent urinary tract infection who had a cystoscopy as part of their investigation were included.
Results: A total of 2503 patients were identified. Forty patients (1.6%) had significant pathology (mean age 54.3 years; range 18-94 years). Five patients (0.2%) had malignant lesions, of which 3 were TCC, 1 SCC and 1 metastatic caecal carcinoma. All 5 patients were aged over 65 (68-94 years). A further 35 patients had significant abnormalities (range 18-87 years), with 22 having a urethral stricture requiring urethral dilatation, 4 had a ureterocele, 2 had foreign bodies within the bladder, 2 had calculi, 2 had colovesical fistula, 1 had evidence of a duplex system, one had evidence of schistosomiasis and one had a urogenital sinus.
Conclusion: Cystoscopy should not be used in women under the age of 65 as a routine investigation for rUTI. Although very few malignancies were found in the older population, cystoscopy may still be warranted in this group of patients.

UP.255
Emphysematous Pyelonephritis: A 25-Case Series
Hadj Slimen M**, Fourati M**, Rebai N, Touaiti T, Bouacida M, Smaoui W, Mhiri M
CHU Habib Bourguiba, Sfax, Tunisia

Introduction and Objectives: Emphysematous pyelonephritis (EPN) is a severe, acute necrotizing infection with formation of gas in the collecting system, renal parenchyma and perirenal tissues. It is a life-threatening condition with a high mortality rate. We studied herein its diagnosis, differential diagnosis, surgical treatment and its outcome.
Materials and Methods: We reviewed retrospectively analysis of clinical records of 25 patients, treated for emphysematous pyelonephritis, between 1985 and 2013.
Results: The mean age was 46 years with female predominance (sex ratio 0.22). All patients are diabetics. Infections of the upper urinary tract were present in 18 cases. Renal stones are seen in 19 cases. The commonest clinical presentation was lumbar pain (100%), dysuria (85%). Urine culture identified Klebsiella pneumoniae in 56% of cases, Escherirchia Coli, Proteus Mirabilis and Candida Albicans in each case respectively. Plan X-ray film realized in all cases, showed renal stones in 76% of cases. Computed tomography scan confirmed diagnosis. It showed gas in the collecting system, renal parenchyma, and it performed VAN classification: type I (14 cases) type II (11 cases). Treatment consisted of antibiotic therapy followed by nephrectomy for 12 patients. Two patients of this group died. The second group was treated by ureteral stent. Four Patients died from this group.
Conclusion: EPN is a rare necrotizing infection with high mortality and morbidity. Uncontrolled diabetes and urinary tract obstruction play important role in the development of EPN. CT is the modality of choice in the diagnosis and classification of EPN. Treatment options are based on antibiotics, percutaneous drainage and relief of obstruction if present. However surgical intervention should not be delayed in patients who do not substantially improve on medical treatment or who have signs of organ failure.

UP.256

The Importance of the Presence of Accessory or Crossing Vessels in the Anatomy of Pelvi-Ureteric Junction Obstruction (PUJO) in a Modern Series of Patients Undergoing Pyelolasty

Drinnan N, Ni Raghallaigh H, Chetwood A, James P, Emara A, Barber N
Frimley Park Hospital, Surrey, UK

Introduction and Objectives: Historically, crossing vessels (CV) have been thought to play a relatively minor role in pathophysiology of Pelvi-Ureteric-Junction obstruction (PUJO). We describe our experience of performing dismembered pyeloplasty over 7 years to determine the incidence of CVs in the context of PUJO requiring surgical intervention.
Materials and Methods: In total, 90 patients underwent pyeloplasty. All were symptomatic or had demonstrable loss of function from the affected renal unit. Pre-operative imaging included IV or CT urography, retrograde ureteropyelography and MAG-3 renography. We prospectively collected radiological evidence of CVs associated with PUJO. This was correlated with true anatomy as seen *in vivo*.
Results: The likely presence of CVs was rarely reported in any form of imaging. At operation CVs were present in 49% of cases; 56.8% of which had an artery and vein, 37.8% artery only and 5.4% vein only. As such, an artery confers a 60% chance of an associated vein, but a vein confers a 91% chance of an associated artery. The highest proportion (67%) of CVs were found in the 15-25 year old subgroup; the lowest proportion (36%) in the 45-65 year old group.
Conclusion:

- Our data suggests the incidence of CVs associated with PUJO is higher than previously thought, particularly in young patients.
- A crossing vein confers a high likelihood of an associated artery, while an artery may or may not suggest a co-existent vein.
- Pre-operative imaging does little to report such abnormalities and extra care should be taken in identifying vessels at the time of pyeloplasty.

UP.257

Urinary Malakoplakia: About 13 Cases

Fourati M, Hadj Slimen M, Rebai N, Chaabouni A, Touaiti T, Smaoui W, Mhiri M
CHU Habib Bourguiba, Sfax, Tunisia

Introduction and Objectives: Malakoplakia is an unusual chronic inflammation characterized macroscopically by pseudotumoral lesions and histologically by the presence of "Michaelis-Gutman" bodies in macrophages.
Methods and Materials: We report 13 cases of urinary malakoplakia collected during a period of 24 years (1989- 2013). We study the epidemiological, topographical, clinical, paraclinical, therapeutic and evolutionary aspects.
Results: The sex ratio was 0.6. The average age was 49 years (3-81). Malakoplakia was involving kidney (8 cases), both ureters (1case) and bladder (4 cases). Clinical symptoms were based on the seat of the disease: it is manifested by fever and lumbar painful syndrome for renal location, obstructive acute renal failure for bilateral ureteral location, cystitis in 2 cases. Treatment consisted, for kidney locations in nephrectomy (5 cases), among which two extended and two partial, and medical treatment based on cholinergic, vitamin C and antibiotics (1 case). For bladder locations, partial cystectomy was performed in 2 cases, trigonectomie and ureterovesical reimplantation in one case; the fourth patient had a peritoneal lavage with biopsies of necrotic and infected bladder tumor, which confirmed the diagnosis. Adjuvant medical treatment was introduced in all cases. For bilateral ureteral location, a first drainage by percutaneous nephrostomy was performed followed by a bilateral ureteral reimplantation, the postoperative course was uneventful.
Conclusion: Urinary malakoplakia remains a disease with no specific clinical and radiological signs. Diagnosis confirmation can be histological. Medical treatment, sometimes sufficient, cannot be initiated if we have not precise diagnosis. It can also replace surgery, which can be sometimes mutilating.

UP.258

Intravesical Sodium Chondroitin Sulphate in Prevention of Recurrent Bacterial Cystitis: Validation, Efficacy and Development of Practice

Marri R, Housami F, Scott J, Lamb G
Forth Valley Royal Hospital, Larbert, UK

Introduction and Objectives: Recurrent urinary tract infections (UTI) constitute a significant proportion of referrals to secondary care. Multidrug bacterial resistance has questioned the use prophylactic long term antibiotics resulting in interest in alternative interventions targeting interactions between bacteria and bladder wall lining. This retrospective study examines the efficacy of intravesical sodium chondroitin sulphate (ICS) instillations in real practice in prevention of UTI and compares this to a pilot group of patients self-administering instillations at home.
Materials and Methods: Between November 2012 and May 2013 thirty four consecutive patients with recurrent UTI and normal baseline ultrasound, flexible cystoscopy and resistant to conservative measures were recommended for ICS instillations. Six doses of 2% ICS were instilled at weekly intervals. Subsequently data was collected regarding number of proven UTIs in one year before instillation, one year after instillation and symptomatic benefit to patients. A pilot group of three patients self-administered instillations.
Results: Median number of UTIs per patient in twelve months prior to instillation was 4 (range 1-14 UTIs). The median number of UTIs per patient in one year after the instillations was 2 (range 0-10 UTIs). Eleven patients (32%) noted fifty percent reduction in number of proven UTIs in one year. Seven patients had symptoms of UTI but had no bacterial growth on midstream specimen of urine cultures. Fourteen patients (41%) had symptomatic benefit from the instillations. All patient who self-administered the instillations had good results. However the number in this group is too small to draw conclusions.
Conclusion: Intravesical instillations can prevent recurrent UTI in a selected group of patients. Further studies are required to identify which patients are more likely to gain benefit in order to develop treatment protocols. Pilot data would suggest that it is possible for patients to self-administer treatment with similar efficacy.

UP.259

Chronic Bacterial Seminal Vesiculitis Occupies Some Portion of Chronic Prostatitis/Chronic Pelvic Pain Syndrome

Park S, Ryu J, Choo G, Seong D, Yoon S, Suh J, Park W, Lee T
Inha University School of Medicine, Incheon, South Korea

Introduction and Objectives: To document bacterial infection in seminal vesicles by bacteriologic examination and radionuclide imaging in men with chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS).
Materials and Methods: The study included 50 patients with CP/CPPS who showed hot uptake in seminal vesicles on Tc-99m ciprofloxacin imaging and 8 patients who did not show hot uptake. The evaluation included the National Institutes of Health Chronic Prostatitis Symptom Index (NIH-CPSI) and four-glass test. In all subjects, transperineal aspiration of seminal vesicle fluid under the guidance of transrectal ultrasonography and bacteriologic examination was done.
Results: Of the 50 patients who showed hot uptake in the seminal vesicles on the isotope study, microorganisms were isolated from seminal vesicle fluid in 17 patients (positive predictive value, 34%). The most common causative organisms were *Escherichia coli* in 13 patients (26%), followed by coagulase-negative *staphylococcus* species in 2 patients (4%), *Enterococcus faecalis* in 1 patient (2%), and *Chlamydia trachomatis* in 1 patient (2%). No microorganisms were isolated in the 8 patients who did not show hot uptake in the seminal vesicles (negative predictive value, 100%). However, there were no significant differences in NIH-CPSI total scores and subscores on the basis of culture results of the seminal vesicle fluid.

Conclusions: CBSV (chronic bacterial seminal vesiculitis, or CBSV) may occupy a considerable portion of CP/CPPS although the clinical implication of the disease remains to be further investigated.

UP.260

Study on Urinary IL-33 and Galectin-3 Levels in Interstitial Cystitis

Kochiashvili G, Kochiashvili D
Dept. of Urology, T.S.M.U., Tbilisi, Georgia

Introduction and Objectives: Interstitial cystitis (IC) is an enigmatic chronic disorder characterized by vague bladder pain of variable severity accompanied by urinary symptoms. The pathogenesis and etiology of IC remain incompletely defined. However, there is an emerging consensus about the central role of epithelial dysfunction, bladder sensory nerve up-regulation, and mast cell activation in the genesis of IC. Accumulating evidences have suggested that tissue damage is recognized at the cell level via receptor-mediated detection of intracellular proteins released by the dead cells. Among these proteins IL-33 and galectin -3 may have an important role because they can be participated as cellular components that stimulate the immune system when they leave their usual intracellular location during either cell activation or cell death.
Materials and Methods: We measured IL-33 and galectin-3 in 24-hour urine specimens from patients with IC and healthy controls. Study participants included 24 female patients with IC and 18 ages matched female volunteers. ELISAs were used to determine levels of IL-33 and galectin-3.
Results: We have found that the levels of both proteins, IL-33 and galectin-3, were significantly increased in IC. The level of the IL-33 in the urine of healthy women was equal to 5.083±0.041 pg/ml, while the level of IL-33 in patients increases up to 7.21±0.063 pg/ml. Further, the amounts of urine galectin-3 were also elevated in IC patients as compared to healthy subjects (20.8±3.4 ng/ml – healthy subjects; 30.24±3.4 ng/ml – patients with IC).
Conclusion: These data suggest on the participation of IL-33 and galectin-3 in the inflammatory response of the bladder in IC.

UP.261

Comparison of Multipledrug Resistant Pathogen in Urinary Tract Infection by Age and during the Last 5 Years in Korea

Kim K, Lee K
Dept. of Urology, College of Medicine, Dongguk University, Gyeongju, South Korea

Introduction and Objectives: Escherichia coli (E. coli) is the most notable pathogen that results in a frequently diagnosed community-acquired infection, the urinary tract infection (UTI). The recommended first line agents for uncomplicated UTI include sulfamethoxazole/trimethoprim (SMX-TMP) or nitrofurantoin.2-5 However, decreasing susceptibilities of common pathogens to these pharmacologic agents for the treatment of UTIs has complicated empiric drug therapy decisions. The aim of this study was to assess the resistance patterns of uropathogens during the last 5 years in patients with acute pyelonephritis.
Materials and Methods: A total of 493 patients were hospitalized in departments of Dongguk University hospital in Korea due to the first UTI between January 2007 and July 2013. Of these, only 165 patients fulfilled inclusion criteria of the study. Uropathogens resistance to commonly usable anti-microbial agents (ampicillin, a combination of sulphamethoxasole and trimethoprim, cephalexin, ceftriaxone, cefotaxime, ceftazidime, gentamycin, amikacin, ciprofloxacin, imipenem and nalidixic acid) was retrospectively studied in patients treated during early (2007-2010) and late (2011-2013) study periods. Patients were classified into two groups: patients with less than 50 year were assigned to Group 1 (n=45), and those with more than 50 year were assigned to Group 2 (n=120). Anti-bacterial susceptibility testing of the urine isolates was performed by the standard disc diffusion method.
Results: Patients were treated during early (n=45) or late (n=120) study period due to the first episode of acute pyelonephritis. Escherichia coli was the most common bacterial pathogen (85.5%). Compared to patients less than 50 year, older patients had higher degree of anti-bacterial resistance to cefoxitin, ciprofloxacin, levofloxacin during late study period (0.0% vs. 30.2%, p=0.006, 15.4% vs. 54.5%, p=0.022, 11.1% vs. 44.7%, p=0.019). Also, multidrug resistance was more common in patients more than 50 year during the late study period (26.3% vs. 70.0%, p=0.002). There were no statistically significant differences between the two groups in characteristic variables. Antibacterial resistance to Gentamicin and Piperacilline/Tazobactam were more common in patients treated late during the study period than early (20.5% vs. 37.9%, p=0.027, 6.8% vs. 35%, p<0.001). Multidrug resistance was more common in patients treated late during the study period than early (31.0% vs. 58.0%, p=0.001).
Conclusion: Our study has demonstrated the progressive increase in anti-microbial resistance in patients with first UTI during the period 2011-2013. High prevalence rate of ESBL(+) uropathogens and multi-drug-resistance is of great concern.

UP.262

Platelet Volume Indices in Patients with Varicocele

Mahdavi-Zafarghandi R[1], Shakiba B[1], Keramati M[2], Tavakkoli M[1]
[1]Dept. of Urology, Imam Reza Hospital, Mashhad University of Medical Sciences, Mashhad, Iran; [2]Cancer of Molecular Pathology Research Center, Imam Reza Hospital, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: Some evidence showed an association between systemic varicose and varicocele. Also, there is a positive association between varicocele and coronary artery ectasia. This may bring the existence of common mechanisms to mind. On the other hand, it has been shown that the platelet size reflects its activity and platelet volume indices (PVI) particularly mean platelet volume (MPV), is demonstrated to increase in vascular disorders. This study sought to evaluate platelet volume indices (mean platelet volume (MPV), platelet distribution width (PDW), and platelet large cell ratio (P-LCR)) in varicocele patients, and compare it with platelet volume parameters in healthy controls.
Methods: This cross-sectional study involved 2 groups: Group 1 included 51 varicocele subjects and Group 2 consisted of 50 healthy control subjects of similar ages. The following subjects were excluded from the study: Subjects with history of coronary artery disease, peripheral vascular disease, diabetes mellitus, hypertension, testicular tumor, hydrocele, undescendent testis, inguinal hernia, epididymo-orchitis, inguinal and scrotal surgeries, splenectomy, Thrombotic thrombocytopenic purpura (TTP), Idiopathic thrombocytopenic purpura (ITP), and thrombocythopenia (less than 150 $\times 10^6$/µl) or thrombocytosis (more than 450 $\times 10^3$/µl). Platelet volume parameters (MPV, PDW, and P-LCR) were measured in both groups within 2 hours of sampling. The differences between groups were evaluated by independent sample T test.
Results: Mean PDW, MPV, and P-LCR were 13.9±2.5%, 10.1±1.3 fl and 27.3±7.8% in varicocele patients respectively and were 12.6±2.4%, 9.3±1.1 fl and 21.9±6.4% in control group, respectively. There were significantly higher mean PDW, MPV, and P-LCR in varicocele group compared with control group (Pvalue<0.05).
Conclusion: Larger platelets are haemostatically more active and are a risk factor for developing vascular disease. Present study suggested that vascular components may have important role in pathophysiology of varicocele; therefore, there is a great need for prospective studies to confirm this relationship.

UP.263

A New Brand Rat Model for Varicocele for Infertility Research

Zhang L[1,2], Kim H[1,2], Choi B[1,2], Zhao C[3,4], Lee S[5], Moon D[6], Park K[7], **Park J**[7]
[1]Dept. of Urology, Chonbuk National University

Medical School and Institute for Medical Sciences, Chonbuk National University, Jeonju, South Korea; [2]Biomedical Research Institute and Clinical Trial Center for Medical Devices of Chonbuk National University Hospital, Jeonju, South Korea; [3]Dept. of Urology, Renji Hospital, Shanghai Jiao Tong University Medical School, Shanghai, China; [4]Shanghai Institute of Andrology, Shanghai, China; [5]Dept. of Urology, Sungkyunkwan University Medical School, Seoul, South Korea; [6]Dept. of Urology, Korea University Medical School, Seoul, South Korea; [7]Dept. of Urology, Chonnam National University Medical School, Kwangju, South Korea

Introduction and Objectives: Researchers have tried to create the varicocele model for having with varied success. To recreate a consistent varicocele model by exploring the anatomic variability of the testicular-spermatic venous system in Sprague-Dawley (SD) rats.
Materials and Methods: Seventy-two sexually mature SD male rats were randomly divided into three groups containing 24 rats per group. Partial ligation of the left renal vein and internal spermatic vein (ISV) communicating branches to common iliac vein and ISV communicating branches ligation (Park and Zhang's method) or partial ligation of the left renal vein and ISV communicating branches ligation (RVISVCB). We evaluated the results by sperm analysis, apoptotic index, spermatogenic cell density, Johnsen's score, ischemic damage and degree of seminiferous tuble destruction.
Results: The results showed that the mean diameter of the left ISV was significantly increased in the Park and Zhang's method group compared to the control and RVISVCB groups (*p-value* < 0.001). Using ISV as the reference, the sensitivity of varicocele was 71.43%, and the specificity was 80%. Additionally, the positive predictive value was 83.33%, and the negative predictive value was 66.67%. Sperm count, motility and the apoptotic index were lower in the RVISVCBCIV group compared to the control (*p-value* < 0.01) and RVISVCB groups (*p-value* > 0.05). The spermatogenic cell density was higher in the control group compared to both the RVISVCB and Park and Zhang's method groups (*p-value* < 0.001). In RVISVCBCIV group, the high grade damage in the left testis accounts for 62%, which is higher than the RVISVCB and control group (41% and 11%, respectively). In Johnsen score, tower score in the left testis was shown in the RVISVCB (8.03 ± 0.19, < 0.05 vs. control) and RVISVCBCIV (6.87 ± 0.16) group compared with control group (8.26 ± 0.15, < 0.01 vs. control).
Conclusions: The Park and Zhang's method may be more effective for a establishing a varicocele induction model.

UP.264
Semen Parameter and Age-Specific Changes between Recent Two Decades
Cho I, Kim Y, Kim S, Kim S, Min S
National Police Hospital, Seoul, South Korea

Introduction and Objectives: We analyze the trend of overall and age-specific changes in the semen quality of Korean men between the 2000s and 2010s.
Materials and Methods: A total 354 semen samples were collected from Korean men presenting for infertility or varicocele, other infectious problems in two decades, between January 2002~December 2003 and January 2012~December 2013. The diagnoses of patients were 25 infertilities, 62 varicoceles and 73 other infectious diseases, which were orchitis, chronic prostatitis, etc, in 2000s, and 54 infertilities, 94 varicoceles, 46 other infectious diseases, in 2010s, respectively. A standard WHO procedure for semen analysis was performed that included assessment of pH, volume, sperm concentration, and percentage motility and morphology.
Results: A total of 160 men constitute the study population in the 2000s (from 2002 to 2003), while data on 194 men were collected in the 2010s (from 2012 to 2013). The mean age in the study populations are 25.44 (±8.12) and 30.30 (±9.31) in the 2000s and the 2010s, respectively ($p<0.05$). The overall sperm parameter results suggested that there has been a significant decrease in semen volume (4.42ml vs. 2.93ml), sperm concentration (74.68 million/ml vs. 61.04 million/ml), motility (64.74% vs. 54.26%), morphology (50.10% vs. 77.68%), in the 2010s when compared with the 2000s ($p<0.05$), except for pH (8.08 vs. 8.02). Negative correlations were observed in all semen parameters with increasing age in all patients, except for pH. And semen volume, motility and morphology had higher negative correlation coefficients with age, in the 2010s, compared to those in the 2000s (Table 1). Follicle stimulating hormone (FSH, 5.10 μIU/ml vs. 4.21 μIU/ml) and Testosterone (7.95 ng/ml vs. 5.711ng/ml) had significant differences between two decades ($p=0.006$, $p=0.016$, respectively), but Leuteinizing hormone (LH, 4.44 μIU/ml vs. 4.06 μIU/ml) did not.
Conclusion: There are significant changes in semen parameters of Korean men between the recent two decades, and the age related correlation coefficients in semen volume, motility and morphology showed higher negative in the 2010s, compare with those in the 2000s.

UP.264, Table 1. Correlation between semen parameters and age in the two decades

	2000s		2010s	
Parameter	Correlation with age	*p*-value	Correlation with age	*p*-value
pH	-0.167	0.036	0.153	0.036
Volume, ml	-0.199	0.012	-0.304	0.000
Concentration, X 10^6/ml	-0.910	0.273	-0.900	0.238
Motility, %	-0.232	0.004	-0.243	0.001
Morphology, %	0.226	0.005	-0.237	0.002

UP.265
Spectrum of Mutations in CFTR Gene in Indian Infertile Males with Congenital Absence of Vas Deferens
Sharma H**, Singh S**, Mavuduru R, Prasad R
Post Graduate Institute of Medical Education and Research, Chandigarh, India

Introduction and Objectives: The majority of males affected with Cystic Fibrosis (CF) are infertile due to high incidence of mutated Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) gene, leading to congenital bilateral absence of vas deferense (CBAVD) and is considered as genital form of Cystic Fibrosis. CF is considered as rare disease in Indian population. The present study was undertaken to find out the spectrum and frequency of CFTR gene mutations in Indian infertile male population with CBAVD.
Materials and Methods: Blood samples from infertile males with CBAVD (n=60) and healthy control (n=100) were used for genomic DNA isolation. Screening of mutations in 27 exons of CFTR gene was carried out by single stranded conformational polymorphism (SSCP) analysis. Delta F-508, N1303K, R553X, G551D, G542X, 621+1G>T and W1282X were the other known most common mutation screened in Indian infertile males through allele specific ARMS PCR analysis. IVS8-Poly T allele polymorphism was also determined in all infertile male patients.
Results: Spectrum CFTR gene mutation was heterogenous. Out of 60 CBAVD males 49 (81%) were found to have mutation in CFTR gene. Delta F-508 (26.6%) and R11H (6.6%) were the most common mutations identified in Indian infertile male population. IVS (8) 5T allele was found with allelic frequency of 28.3%. Novel CFTR mutations were also identified in exon 4 and 11 viz., G126S, S118P, M281R and A141G.
Conclusion: There is molecular heterogeneity of CFTR mutations in Indian CBAVD male population. Exon 4 and Exon 11 are hot

spot regions for mutations in these patients and suggested to be screened in infertile male patients willing to opt for assisted reproductive technology.

UP.266

Varicocele is associated with Varicose Vein: A Population-Based Case-Control Study

Chen S[1], Chiu A[2]
[1]Taipei City Hospital Renai Branch, Taipei, Taiwan; [2]National Yang-Ming University, Taipei, Taiwan

Introduction and Objectives: To analyze the association between patients with varicocele and varicose vein in Taiwan using a population-based case-control study.
Materials and Methods: Between 2001 and 2010, comprehensive data was collected on the characteristics of patients with varicocele and varicose vein in Taiwan via a retrospective nationwide population-based study. Data were obtained from the Taiwan National Health Insurance Research Database (NHIRD). A total of 2727 cases with varicose vein and 10908 randomly selected controls were included in this study. Conditional logistic regression analyses were used to examine the association between varicose vein and varicocele.
Results: The prevalence of varicocele was 1.3% and 0.3% for cases (with varicose vein) and controls (without varicose vein), respectively ($p<0.001$). Conditional logistic regression analysis showed that the odds ratio (OR) of being previously diagnosed with varicose vein for cases was 4.71 (95% confidence interval [CI]: 2.87-7.89) when compared with controls after adjusting for age, diabetes, heart disease, chronic obstructive pulmonary disease, liver and kidney disease and edema. Furthermore, the OR was 5.96 (95% CI: 2.90-12.24), 4.76 with (95% CI: 1.68-13.48) and 1.69 (95% CI: 0.30-9.55) in patients aged <50, between 51-65 and aged >65, respectively. In addition, the prevalence of male infertility was 15.1% for patients with varicocele and varicose vein, and 14.5% for patients with varicocele only, but no significant difference was noticed.
Conclusion: We identify an association between both varicocele and varicose vein. In addition, the association is higher in patients younger than 50.

UP.267

Second to Fourth Digit Ratio: A Predictor of Adult Testis Size

Kim T, Oh J, Kim K, Yoon S, Kim S
Dept. of Urology, Gachon University Gil Hospital, Incheon, South Korea

Introduction and Objectives: It has been suggested that second to fourth digit ratio (digit ratio) may correlate with male reproductive system function or disorders. This hypothesis is based on finding that the Hox genes control finger development and differentiation of the genital bud during embryogenesis. Thus, we investigated the association between digit ratio and adult testis size.
Materials and Methods: A total of 172 men (aged 20 to 65 years) hospitalized for urological surgery were prospectively enrolled. Patients with conditions known to strongly influence testis size were excluded. Before determining testis size, the lengths of the 2nd and 4th digits of the right hand were measured by a single investigator using a digital vernier calliper. Using orchidometry, the testes were measured by an experienced urologist who had no information about the patient's digit ratio. To identify the independent predictive factors influencing testis size, univariate and multivariate analyses were performed using linear regression models.
Results: Age, height, serum testosterone and free testosterone level were not correlated with testis size. Digit ratio, along with weight, was significantly correlated with testis size (right testis size: $r = -0.185$, $p = 0.015$; left testis size: $r = -0.193$, $p = 0.011$; total testis size: $r = -0.198$, $p = 0.009$). Multivariate analysis using linear regression models showed that only digit ratio was the independent factor to predict all (right, left, and total) testis sizes (right testis size: $\beta = -0.174$, $p = 0.023$; left testis size: $\beta = -0.181$, $p = 0.017$; total testis size: $\beta = -0.185$, $p = 0.014$).
Conclusion: Our findings demonstrated that digit ratio is negatively associated with adult testis size. This means that men with a higher digit ratio may be more likely to have smaller testis compared to those with a lower digit ratio.

UP.268

Malattributed Paternity

Drinnan N, Ni Raghallaigh H, Crawford R, Chetwood A, Emara A, Barber N
Frimley Park Hospital, Surrey, UK

Introduction and Objectives: Modern paternity testing cannot prove paternity but rather proves non-paternity, by excluding a genotype incompatible with that of the child. The investigations use DNA polymorphisms with probabilities of exclusion in excess of 99.99%.
Materials and Methods: Here we discuss the clinical and ethical implications of a situation where one or both parents are under the impression (wrongly) that a child has been fathered by the male partner, when the true biological father is in fact a separate third party. As Urologists we tend only to encounter this unusual situation during investigation for infertility, work up for transplant surgery and during genetic testing for diseases such as cystic fibrosis or inheritance disputes.
Results: Disclosing misattributed paternity has a number of different biological and social consequences and presents ethical and deontological challenges, centering on whether or not to inform the family and, particularly, whom in the family. As such there is no consensus on a single, appropriate approach. While respect for autonomy does require revealing information pertinent to decision-making, if the putative father is found to be unrelated to the child there will be social inequalities in the repercussions between men and women. Salary gaps and societies' inequalities make it more difficult to exist as a single 'parent' female vs. single 'non-parent' male.
Conclusion: Here we explore the views of a number of psychologists to provide different approaches to facing this situation focusing on ethics and practical management steps to aid Urological practice.

UP.269

Seminal Parameters in Patients with Varicoceles: Impact of Clinical Presentation

El-Bahnasawy M[1], Fadl F[2], Balaha A[3]
[1]Urology and Nephrology Center, Mansoura, Egypt; [2]Dept. of Radiology, Alhasa Hospital, Alhasa, Saudi Arabia; [3]Dept. of Clinical Pathology, Alhasa Hospital, Alhasa, Saudi Arabia

Introduction and Objectives: Controversy continues regarding impact of varicocele on the different seminal parameters and the possible bias in case of patients attending infertility clinics. Our aim is to compare different seminal parameters in patients presented for infertility versus those presented for testicular pain.
Materials and Methods: This study included 117 varicocele patients presented for infertility problems and 107 varicocele patients presented with testicular pain. All of them were assessed clinically, radiologically and laboratory by single observer each. Statistical analysis was done using Wilcoxon matched-pairs Signed-Ranks test and correlations were made using Spearman correlation coefficients.
Results: Mean age of pain group (31.7±8.8years) is significantly younger than the infertility group (34.3±8 years) ($P=0.02$). There were statistically significant higher sperm density, sperm motility and percentage of rapid motility in the pain group than infertility group ($P<0.05$). Correlating the clinical and radiologic size of varicocele to seminal parameters showed that clinical grade 3 had significantly lower sperm density ($P=0.006$) in the infertility group which was not seen in the testicular pain group. A weak inverse correlation was detected between ultrasound measured varicocele diameter and percentage of sperm motility in the infertility group ($R=-0.18$, $P=0.05$) while such correlation was much more evident in the pain group ($R=-0.37$, $P=0.008$). On the other hand bilateral varicoceles in the pain group showed significantly lower sperm density, lower sperm motility percentage and lower percentage of rapid forward motility than unilateral varicoceles ($P=0.04$, 0.03 and 0.006 respectively). Such effect of laterality

was lacking in the infertility group. Moreover semen concentration was inversely correlated with ultrasound measured varicocele diameter (R=-0.29, P=0.04) in the pain group but not the infertility group.
Conclusions: Patients with varicoceles presented with pain have better semen parameters than those presented with infertility indicating involvement of further factors other than varicoceles. Clinical high grade varicocele has significant impact on sperm motility in the infertility group while the radiologic diameter was much more impacting semen parameters in the pain group. Bilaterality of varicocele significantly impact seminal parameters in the pain but not the infertility group.

UP.270
Does Anti-Oxidant Therapy Add Any Extra Benefit to Standard Inguinal Varicocelectomy in Terms of DNA Damage or Sperm Quality Factor Indices: A Randomized Study
Movahedin M[1], Mehrsai A[2], Noori M[2], Dehghani S[2], **Pourmand G**[2], Ahmadi A[2], Pourhosein M[2], Hoseini M[1], Ziloochi M[1], Heidari F[2], Beladi L[2], Alizadeh F[2], Hemmatian M[2]
[1]Dept. of Anatomical Sciences, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran; [2]Urology Research Center, Tehran University of Medical Sciences, Tehran, Iran

Introduction and Objectives: Varicocele is the leading cause of male factor infertility, responsible for up to 40% and 80% of primary and secondary infertilities, respectively. Disturbance in oxidative stress, DNA damage and semen parameters has several possible factors that can also define varicocele impact on fertility. It was documented that varicocelectomy will improve semen analysis parameters and DNA damage in infertile patients with varicocele. We proposed to investigate the role of adding anti-oxidant to this therapy in terms of improving semen parameters and DNA damage.
Materials and Methods: A total of 100 patients enrolled in this study and were randomly divided them into two groups (50 patients in each group). In Group 1, standard inguinal varicocelectomy and in Group 2, standard inguinal varicocelectomy plus oral anti-oxidant therapy (oral L-Carnitine 250 mg three times a day) was performed for six months. For all patients, routine semen analysis plus DNA damage test of spermatozoa (by two methods of TUNEL [terminal deoxynucleotydil transferase nick end labeling] and Protamine Damage Assay) were performed at baseline and three and six months post operatively.
Results: In both groups, the improvement in semen analysis parameters and DNA damage was observed but there was not any statistically significant difference between the two groups in these parameters, although the slope of improvement in DNA damage was slightly better in Group 2 (that was not statistically significant).
Conclusion: We observed that adding anti-oxidant therapy to standard inguinal varicocelectomy does not add any extra benefit in terms of semen analysis parameters to DNA damage.

UP.272
Outcomes of Scrotal Pampiniform Plexus Varicocelectomy in the Treatment of Male Infertility
Saleh F, Supit W
Dept. of Surgery, Div. of Urology, Faculty of Medicine, University of Indonesia, Jakarta, Indonesia

Introduction and Objectives: Various varicocelectomy techniques have been described, each with differing results and complications. This study aims to evaluate the fertility outcomes and complications of scrotal varicocelectomy, a surgical technique that involves en bloc removal of the pampiniform plexus.
Materials and Methods: Retrospective review of 572 patients who underwent scrotal varicocelectomies, performed by the same surgeon from year 1991 to 2011, with minimum follow-up of 24 months. Among them, 73.3% had primary infertility, 7.2% had secondary infertility, 11.4% were operated for painful varicoceles, and 8.2% were operated for entrance requirement of military academy. Diagnosis was based on physical examination and ultrasonography to assess the varicocele severity. Grade III varicocele was most frequent, in 305 patients (53.0%), followed by grade II in 184 patients (32.2%). Left unilateral varicocele was found in 498 patients (87.1%) and bilateral varicoceles in 74 patients (12.9%). For statistical analysis, only 460 infertility cases were included. Semen analyses were based on the World Health Organization criteria. Fertility outcome measured changes in semen parameters and whether spontaneous pregnancy occurred. Female subfertility factors were not analysed.
Results: The mean age was 31 years (range 22 to 45 years old). Out of 460 infertility cases, 39 (8.5%) patients had undergone previous inguinal or sub-inguinal varicocelectomy. Testicular hypotrophy was found in 342 (74.3%) cases. The mean operative times were 15.2 ± 5.5 minutes for unilateral varicocele and 32.0 ± 5.8 minutes for bilateral cases. Spontaneous pregnancy occurred in 359 (78%) cases within 3 months postoperatively, thus semen analysis was not performed in these patients. Pregnancy ensued in 21 (5%) cases within 6 months, and 18 (4%) cases within 12 months postoperatively; in these patients there was significant improvement in testicular volume, sperm concentration, motility, and morphology (all p<0.001). Postoperative complications included 2 cases of scrotal hematoma and 42 cases of scrotal pain, all of which resolved within 3 months. Scrotal discomfort "heavy feel" was commonly reported (148 cases) until 6 months post surgery.
Conclusion: Scrotal varicocelectomy by pampiniform plexus removal is a safe procedure with minimal complications, and may significantly improve testicular volume, semen parameters, and the likelihood of a pregnancy.

UP.273
Inflammation-Based Prognostic Score Independently Predicts Intravesical Recurrence after Nephroureterectomy in Upper Urinary Tract Transitional Cell Carcinoma
Jung S[1], Chung H[1], Hwang I[1], Yu H[1], Hwang E[1], Kim S[1], Kang T[1], Kwon D[1], Park K[1], Kang S[2]
[1]Chonnam National University Medical School, Gwangju, South Korea; [2]Korea University School of Medicine, Seoul, South Korea

Introduction and Objectives: Systemic inflammatory responses defined by Glasgow Prognostic Score (GPS) have been reported to be independent predictors of unfavorable outcome in other cancers. The aim of this study was to assess the impact of GPS as a predictor of intravesical recurrence after radical nephroureterectomy (RNU) in upper urinary tract urothelial carcinoma (UUTUC).
Materials and Methods: We collected data of 147 UUTUC patients with RNU from 2004 to 2012 without a previous history of bladder cancer. Perioperative clinicopathologic variables were investigated. GPS was assigned as previously described (Crumley et al, Br J Cancer 2006). Associations between perioperative clinicopathologic variables and intravesical recurrence were analyzed using uni- and multivariate Cox regression models.
Results: Overall, 71 of 147 (48%) patients developed intravesical recurrence, including 37 (50%) with the renal pelvis and 34 (46.5%) with the ureter (p=0.678). Synchronous bladder tumor was found in 32 of 147 patients; 21 (30%) patients had intravesical recurrence (p=0.027). On univariate analysis, performance status, diabetes mellitus (DM), serum albumin, CRP, GPS and synchronous bladder tumor were associated with intravesical recurrence. On multivariate analysis, performance status (Hazard ratio [HR]: 2.33, p=0.001), DM (HR: 2.04, p=0.007), cortical thinning (HR: 2.01, p=0.026), and GPS (1: HR: 6.86, p= 0.001, 2: HR: 5.96, p= 0.001) were determined as independent predictors of intravesical recurrence.
Conclusion: Our results suggest that GPS including performance status, DM, and cortical thinning were associated with intravesical recurrence after RNU. GPS may provide a new surveillance protocol for post-operative management of UUTUC including intravesical chemotherapy instillation.

UP.274

Preoperative Positive Urine Cytology Is a Clinical Independent Risk Factor for Intravesical Recurrence after Laparoscopic Radical Nephrectomy in Patients with Upper Tract Urothelial Carcinoma

Shibuya T, Hirai K, Shin T, Mori K, Sumino Y, Sato F, Mimata H
Dept. of Urology, Faculty of Medicine, Oita University, Yufu-City, Oita, Japan

Introduction and Objectives: Approximately 15% to 50% of patients who underwent total nephroureterectomy for upper urinary tract (UUT) urothelial carcinoma (UC) developed recurrence in the bladder during the follow-up period. In this study, we investigated the independent risk factor of bladder recurrence in patients with UUT-UC after laparoscopic radical nephrectomy (LRNU).
Materials and Methods: A total of 54 patients with UUT-UC received LRNU between January 2002 and December 2012 in Oita University Hospital were enrolled in this study. Patients with concomitant bladder cancer or a history of bladder cancer were excluded from this study. Postoperative cystoscopy and urine cytology were performed every 3 months for 2 to 5 years, and postoperative intravesical recurrence was evaluated pathologically. The significance of each variable was analyzed univariately by log-rank test. Multivariate analyses by Cox proportion hazards regression model was used to estimate simultaneous effects of multiple risk factors. Statistical significance was defined as a P value of <0.05.
Results: Median follow-up after LRNU was 30.2 months (range 5-142). Of the patients, postoperative intravesical recurrences were showed in 23/54 (42%). Median time to first intravesical recurrence was 16.1 months. In univariate analysis, significant risk factors of intravesical recurrences were muscle invasive UUT-UC (P<0.05), lymph node metastases (P<0.05), postoperative adjuvant chemotherapy (P<0.05) and preoperative positive urine cytology indicating class IV and V (P<0.01). Multivariate analysis revealed that preoperative positive urine cytology indicating class IV and class V was significant risk factor for intravesical recurrence (HR: 2.68; 95% CL: 1.11-6.45 P=0.026).
Conclusion: Preoperative positive urine cytology was significant risk factor for intravesical recurrence. Therefore, adjuvant chemotherapy such as intravesical instillation therapy can be effective to prevent of intravesical recurrence in patients with preoperative positive urine cytology.

UP.276

Pathological Significance and Prognostic Role of TWIST Expression in Renal Cell Carcinoma: Correlation with Macrophage Recruitment

Ohba K, Miyata Y, Asai A, Mitsunari K, Matsuo T, Sakai H
Dept. of Urology and Renal Transplantation, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan

Introduction and Objectives: TWIST is a highly conserved basic helix-loop-helix transcription factor and it governs cell movement and tissue remodeling. TWIST is up-regulated by carcinogenesis and plays important roles for extra-cellular matrix degradation, angiogenesis and macrophage recruitment in several cancers. However, detailed pathological role and prognostic value of TWIST in RCC patients is not still clear. Main aim of this study is to clarify the relationship between TWIST expression and pathological features, survival, and malignant aggressiveness in RCC.
Materials and Methods: TWIST expression was examined by immunohistochemistry in 156 formalin-fixed RCC specimens. Cell proliferation, angiogenesis and apoptosis were measured as the percentage of Ki-67-positive cell (proliferation index, PI), CD34-stained vessels (microvessel density, MVD), and cleaved caspase-3-positive cell (apoptotic index, AI). In addition, semi-quantification of MMP-2 was also performed. Tumor-associated macrophage (TAM) was calculated according to the number of CD68+cells per high-power field. Survival analysis of TWIST expression was investigated by Kaplan-Meier survival analysis. Independent role of TWIST for survival and our cancer-related parameters was also evaluated by multivariate analyses.
Results: TWIST expression was positively associated with grade, pT stage, and metastasis (P<0.001). In special, we noticed that its expression was remarkably higher in cancer cells of sarcomatous RCC and those at invasive front. Kaplan-Meir survival curve showed that high TWIST expression was worse predictor for cause-specific survival (P<0.001). However, multi-variate analysis demonstrated that high grade, high pT stage and metastasis were independent predictor whereas TWIST expression was not. On the other hand, TAMs in cancer tissues with high TWIST expression (mean/SD = 46.4/13.8) were significantly higher (P<0.001) than those in low TWIST expression (28.4/9.1). TWIST was also positively correlated with MMP-2 (P<0.001), PI (P=0.006), MVD (P<0.001). Among these cancer-related parameters, only TAM (P<0.001) was identified as independent one by multi-variate analyses.
Conclusion: TWIST plays important roles for tumor growth, progression, and survival in RCC patients. Such pathological mechanism is regulated by increasing of cancer cell proliferation, angiogenesis, and MMP-2 expression. In special, main role of TWIST in RCC tissues is speculated to recruit the macrophage. Our information is important to discussion on treatment and observation strategies in patients with RCC.

UP.277

AURKA Phe31Ile and Survivin rs1042489T>C Gene Polymorphisms and Upper Urinary Tract Urothelial Carcinoma Risks in Taiwan

Wu W[1], Chung S[1], Lin Y[2], Hour T[3], Tsai Y[4]
[1]Dept. of Surgery, Div. of Urology, Far Eastern Memorial Hospital, Ban Ciao, Taipei, Taiwan; [2]School of Dentistry, College of Dental Medicine, Kaohsiung Medical University, Kaohsiung City, Taiwan; [3]Dept. of Biochemistry, Kaohsiung Medical University, Kaohsiung City, Taiwan; [4]Dept. of Oncology, National Taiwan University Hospital, Taipei, Taiwan

Introduction and Objectives: The incidence rate of upper urinary tract urothelial carcinoma (UUTUC) is relatively higher in Taiwan than in western countries. Anti-apoptosis, aneuploidy, and genomic instability are important for cancer development. The roles of genetic factors in UUTUC development are unclear. To our knowledge, this was the first hospital-based case-control study that assesses the association between UUTUC development and the polymorphisms in the Aurora kinase A (AURKA) Phe31Ile (rs2273535) and survivin rs1042489C>T genes.
Materials and Methods: Patients with UUTUC were recruited from National Taiwan University Hospital. Controls (younger than the UUTUC group) with bladder stones were recruited from Kaohsiung Medical University Hospital. Clinical records, demographic data, and possible confounding factors were collected using a standardized questionnaire. Genotyping was determined using a real-time polymerase chain reaction. Significantly more controls than patients with UUTUC drank alcohol and tea, but there were no differences in the frequencies of cigarette smokers and coffee drinkers.
Results: AURKA Phe31Ile gene polymorphisms, but not survivin rs1042489C>T gene polymorphisms, were associated with UUTUC development (X^2 test and multivariate logistic regression analysis). Stratification analysis and multivariate logistic regression analysis showed that only the association between AURKA Phe31Ile gene polymorphisms and UUTUC development were differentiated between those with and without the habits of smoking, tea drinking, or coffee drinking.
Conclusion: We hypothesized that AURKA Phe31Ile gene polymorphisms, but not survivin rs1042489C>T gene polymorphisms, increase genetic susceptibility to UUTUC. The effects

of gene-environmental interactions on UUTUC development were found only in AURKA Phe31Ile gene polymorphisms.

UP.279

Impact of Microvascular Invasion and Tumor Necrosis on the Prognosis of Korean Patients with pT1b Renal Cell Carcinoma

Lee J[1], Song P[2], Ko Y[2], Kwon S[1], Kim B[1], Kim H[1], Kim T[1], Yoo E[1], Kwon T[1], Chung S[1], Kim B[1]

[1]Kyungpook National University, Daegu, South Korea; [2]Yeungnam University, Daegu, South Korea

Introduction and Objectives: Health inspections and developments in radiologic imaging technologies have improved the diagnosis of stage pT1 renal cell carcinoma (RCC), which tends to be less aggressive and more responsive to curative surgery. Multiple studies have suggested a wide variety of prognostic factors for RCC, but no specific studies have been conducted on the prognostic factors of pT1b RCC. Accordingly, in the present study, the authors retrospectively evaluated prognostic factors in pT1b RCC patients.

Materials and Methods: The data of 270 patients diagnosed with pT1bN0M0 RCC at 2 institutions between January 1998 and June 2010 were retrospectively analyzed. A total of 248 patients underwent radical nephrectomy, and 22 underwent partial nephrectomy. Univariate and multivariate analyses using Cox proportional hazard models were used to identify pathologic and clinical factors that influenced prognosis. Five-year cancer-specific survival and recurrence-free survival were analyzed using the Kaplan-Meier method.

Results: The median follow-up period was 55.5 months, and the mean patient age was 55.2 years (range, 26–80). There were 12 cancer related deaths, and tumor recurrence was noted in 22 patients between 8 and 120 months after surgery. Sites of metastases included the lung in 13 patients, bone in 5 patients, and other sites in 4 patients. Five-year cancer specific survival and recurrence free survival rates were 93.5% and 91.2%, respectively. Multivariate analyses revealed that the presence of microvascular invasion and tumor necrosis independently predicted prognosis.

Conclusion: In this study, microvascular invasion and tumor necrosis were found to be prognostic factors in pT1b RCC. This result will help urologists to provide patients with more accurate prognoses, and patients with confirmed microvascular invasion and tumor necrosis will require stricter follow-up.

UP.280

Impact of Diagnostic Ureterorenoscopy on Intravesical Recurrence following Radical Nephroureterectomy for Upper Tract Urothelial Carcinoma

Shin S[1], Ryoo H[1], Sung H[1], Jeon H[1], Han D[1], Jeong B[1], Seo S[1], Lee H[1], Choi H[1], Jeon S[1], Choo S[2]

[1]Sungkyunkwan University School of Medicine, Seoul, South Korea; [2]Ajou University School of Medicine, Suwon, South Korea

Introduction and Objectives: The aim of study was to investigate whether preoperative diagnostic ureterorenoscopy (URS) affect the intravesical recurrence (IVR) after radical nephroureterectomy (RNU) in patients with upper tract urothelial carcinoma (UTUC).

Materials and Methods: We performed a retrospective analysis of 469 patients with UTUC who underwent RNU. Diagnostic URS was performed in 183 patients (39.0%). Patients were divided into two groups according to URS.

Results: Median age was 64 (IQR, 56-72) years. Median time from URS to RNU was 18 (1-42) days. Median follow-up duration was 39.9 (22.4-68.3) months. The IVR developed in 220 patients (44.8%) at a median of 8.7 (5.6-17.0) months. Prior or concurrent bladder tumor was found in 82 patients (17.5%). Excluding prior history of bladder tumor, the five-year IVR-free survival rate was 61.0±7.4% and 38.8±9.0% in patients with and without preoperative URS, respectively (P < .001). Multivariate analysis showed that previous history of bladder tumor, extravesical excision of distal ureter, and multifocal tumor, and preoperative URS were independent predictors for IVR. Diagnostic URS was not associated with disease progression in univariate or multivariate analysis. The incidence of IVR in the group of delayed RNU did not differ from that of concurrent RNU group (P = .499). There was no difference between the concurrent (13.2±12.6 months) and delayed RNU group (14.2±14.7 months, P = .775) regarding time to bladder recurrence.

Conclusion: Diagnostic URS for UTUC was associated with increased IVR following RNU, but not with disease progression. Delayed RNU caused by preoperative URS did not affect the incidence of IVR.

UP.281

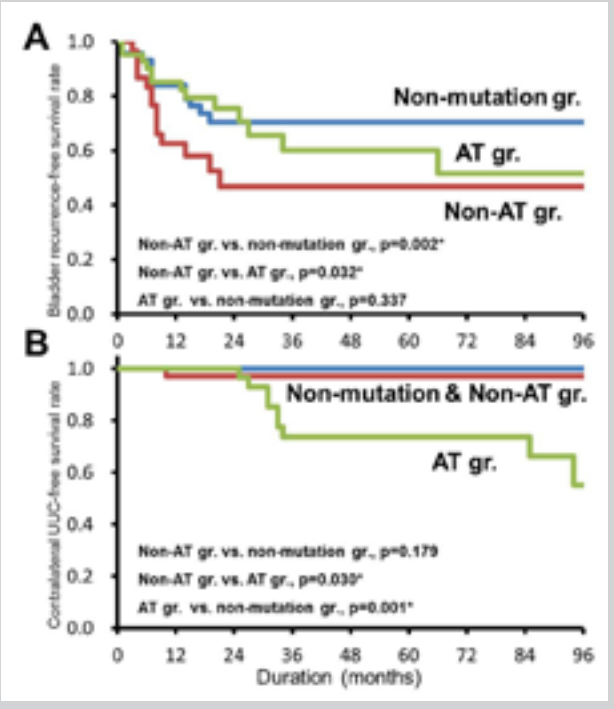
Tumor TP53 Mutation Patterns Determine the Outcomes of the Upper Tract Urothelial Carcinoma Patients

Chen C[1], Huang C[1], Dickman K[2], Grollman A[2], Pu Y[1]

[1]National Taiwan University Hospital, Taipei, Taiwan; [2]Dept. of Pharmacological Sciences and Medicine, Stony Brook University, Stony Brook, USA

Introduction and Objectives: The mutation patterns of tumor genes are associated with different carcinogens and tumor behavior. In this study, we investigated the association between the clinical outcomes and the mutation patterns

UP.281, Figure 1.



of *TP53* in UUC patients.
Materials and Methods: A total of 165 patients with UUC were enrolled from 1999 to 2011 in this study. *TP53* gene of UUCs was sequenced by Roche AmpliChip p53. Contralateral UUC recurrences, bladder tumor recurrences and progression were determined by the scheduled surveillance after nephroureterectomies. Other clinico-pathological characters were obtained from the medical records.
Results: In this cohort, 55 (33.3%) and 42 (25.5%) patients had *TP53* mutations with A-to-T transversion (AT group) and without A-to-T transversion (non-AT group), respectively. *TP53* mutations were not identified in the rest 68 (41.2%) patients (non-mutation group). AT group had a higher proportion of female gender (64%, 52%, 29%, p=0.001), end-stage renal disease (24%, 14%, 10%, p=0.124), aristolactam-DNA adducts (89%, 54%, 51%, p<0.001), and high-grade tumors (82%, 74%, 62%, p=0.046) than non-AT and non-mutation groups. However, non-mutation group had more histories of smoking (28%, 11%, 26%, p=0.055) and diabetes (33%, 20%, 15%, p=0.07) than AT and non-AT groups. The multivariate analyses revealed non-AT group (HR: 2.56, p=0.024, reference: non-mutation group), but not AT group (HR: 1.21, p=0.66, reference: non-mutation group), independently predicted bladder recurrence in UUC patients receiving nephroureterectomies. AT group was associated with more events of contralateral UUC occurrence than non-AT and non-mutation groups (25%, 7%, 2%, p<0.001) during a median follow-up duration of 3 years.
Conclusion: Different patterns of *TP53* mutations in UUC tumors owned dramatically different outcomes. A-to-T transversions were associated with contralateral UUC occurrence, but mutations other than A-to-T transversions in *TP53* were linked to bladder recurrences. The mutation pattern of *TP53* gene was a useful biomarker predicting the clinical outcomes of UUC patients.

UP.283
Systemic Inflammatory Response in Upper Urinary Tract Urothelial Carcinoma
Jeon C, Kim K, Kim M, Choi W, Jeong C, Kwak C, Kim H, Ku J
Seoul National University College of Medicine, Seoul, South Korea

Introduction and Objectives: The aim of this study was to determine the utility of systemic inflammatory response and develop a clinical score based on inflammatory indices to aid prognostication in patients with upper urinary tract urothelial carcinoma (UTUC).
Materials and Methods: The study population comprised 281 patients with non-metastatic UTUC who underwent nephroureterectomy between 1999 and 2010. Multivariate survival analysis was performed using Cox's proportional hazards model and a new scoring model was developed to predict disease-specific outcomes in UTUC using the regression coefficients of the final multivariate model. The coefficient for each factor was divided by the highest coefficient, multiplied by 4, and rounded to the nearest integer.
Results: The final model consisted of pathologic T stage, lymphovascular invasion (LVI), and derived neutrophil/lymphocyte ratio (NLR). These prognostic factors were scored as follows: pT2 = 3 or ≥ pT3 = 4; LVI = 2; and derived NLR ≥ 2:1 = 2. The concordance index of the model was 0.764 and integrated area under the curve value for time to disease-specific mortality for patients was 0.764. Model discriminated well and log-rank test were all highly significant (p <0.001); the 5-year disease-specific survivals in the low-, intermediate-, and high-risk group were 91.5%, 72.5%, and 50.3%, respectively. In our cohort, the predictions resulted in good net benefit across the range of risk thresholds.
Conclusion: Derived NLR may be used in combination with conventional staging techniques and LVI to improve the prediction of survival in patients with UTUC.

UP.284
Pre-Nephroureterectomy Diagnosis and Staging for Upper Tract Transitional Cell Carcinoma: What Is the Value of Ureteroscopy and Biopsy?
Aldiwani M, Alcorn J, Browning A, Biyani C
Pinderfields General Hospital, Wakefield, UK

Introduction and Objectives: There is considerable variation in the investigation and diagnosis of Upper Tract Transitional Cell Carcinoma (UTTCC) involving the use of imaging, urine cytology and Ureteroscopy (URS) plus biopsy. The role of pre-operative histological diagnosis is unclear with varied accuracy rates reported. We review the preoperative pathway for patients who underwent Nephroureterectomy (NU) for UTTCC in our institution.
Materials and Methods: We retrospectively reviewed patients who underwent NU for suspected UTTCC between January 2006 and December 2013 from our local theatre database. Pre-operative investigations were reviewed and compared to final histology data. Follow-up data was analysed for frequency of intravesical recurrence comparing URS vs. no URS.
Results: Sixty seven patients underwent NU for suspected UTTCC. Sixty two (92.5%) patients had a final TCC diagnosis. Sixty five patients had CT Urogram, 1 had MR Urogram, 1 had Intravenous Urogram only. Twenty seven patients (40%) underwent URS pre operatively. Twenty Ureteroscopic biopsies were taken in 18 patients. Of these biopsies, 5 (25%) were inadequate samples, 3 (15%) were false negative, 7 (35%) under-staged the cancer and only 5 (25%) accurately staged the cancer. Three patients had CIS in the final histology; none of which was diagnosed in the biopsy sample. Two patients had benign disease at final histology, both of which had inadequate biopsies. Six out of 17 patients who had cytology tested had malignant or atypical cells. Forty patients underwent NU based on confident imaging diagnosis. All final histology was malignant with 37 cases of confirmed UTTCC and 3 cases of Renal Cell Carcinoma. Thirteen out of 21 of patients with UTTCC in this group had malignant or atypical urine cytology where tested. Intravesical recurrence was higher in patients who underwent URS (37% vs. 20%, p=0.154, average follow-up 26 months (1-72)). No significant difference in tumour or patient characteristics between the two groups explained this.
Conclusion: Ureteroscopic biopsy for the assessment of UTTCC is unreliable and frequently under-stages the disease offering limited reliable additional information. Histological diagnosis should only be attempted after MDT discussion where doubt remains. Our results suggest an increased incidence of intravesical TCC recurrence following URS. More research is needed.

UP.285
Small Renal Masses Do Not Impair Kidney Function
Stakhovskyi O, Voilenko O, Pikul M, Vitruk I, Stakhovskyi E
National Cancer Institute, Kiev, Ukraine

Introduction and Objectives: Active surveillance is advocated and used for a selected group of patients with localized RCC. Majority of such tumors are small renal masses (SRM) that are less than 4cm in diameter. The impact of SRM on kidney function is not well studied. Our objective was to evaluate baseline kidney function in patients with SRM that were treated in our department.
Materials and Methods: We retrospectively analyzed patients' records from 2008 to 2012. We identified 220 patients with T1a tumors that underwent treatment in our department. Out of those we identified 143 patients with renal scintigraphy (RS) at baseline. We excluded patients with bilateral lesions and patients with uni/bilateral hydronephrosis and remaining 128 patients were used for definitive analysis. We collected all the clinical data: age, sex, tumor size, type of growth, GFR that was obtained from RS (overall kidney function and split kidney function). We were able to compare the function of kidneys effected and not-effected by the lesion. GFR of kidneys with totally endophytic tumors were compared with the rest of the group.
Results: Mean age of the patients was 54.7±8.5 years. Male/female ratio was 76/52. Mean

tumor size of the group was30.2±7.6 mm and the overall mean kidney function was 90.25±19.9 ml/min, there were no significant difference when compared function split function of left and right kidneys: 45.49±11.2 ml/min and 44.99±10.8 ml/min. Function analysis of kidneys with tumors versus function in unaffected kidney revealed no significant difference: 44.2±10.4 ml/min vs. 46.28±11.5 ml/min (p=0.13). When we compared the GFR of kidneys with totally endophytic lesions (n=20) there was no difference seen with contralateral kidney function of those patients: 47.31±8.9 ml/min and 48.42±7.4 ml/min (p=0.68). All the patients underwent surgical treatment and there were 126 (96%) partial resections performed and 5 (4%) radical nephrectomies.
Conclusions: Kidney tumors below 4cm in size does not seem to impact kidney function taking into account GFR findings from RS preoperatively. Totally endophytic SRM do not deteriorate kidney GRF comparing with function of contralateral kidneys. Further studies needed to confirm our findings.

UP.286

Tumor Size Influence on Kidney Function

Stakhovskyi O, Vitruk I, Voilenko O, Vukalovich P, Stakhovskyi E
National Cancer Institute, Kiev, Ukraine

Introduction and Objectives: Kidney tumor growth is often substituting or pushing on parenchyma, decreasing it function. Renal function is usually evaluated on the basis of creatinine levels in patients with RCC preoperatively. Renal radioscintigraphy is not commonly used, but it may show the decrease in kidney function on the side of the tumor, giving surgeon additional information to pursue nephron-sparing surgery approach. Our objective was to evaluate the effect of tumor size on kidney function preoperatively.
Materials and Methods: Retrospective analysis of patients with RCC treated from 2009-2012, that had renal radioscintigraphy preoperatively. A total of 334 patients with mean age of 54.7±10.4 were analyzed. Four groups for comparison were formed on the basis of tumor size: <4cm; 4-7cm; 7-10cm; ≥10cm. Analysis was done for total and split kidney function. The difference between kidney function on the side of a tumor and contralateral kidney was evaluated.
Results: Mean size of the tumor was 61.1±31.9mm, mean total GFR was 85.8±19.8 ml/min and mean kidney function on tumor side was 40.7±12.8 ml/min. Comparison groups were statistically significant by age, male/female ratio. Mean total GFR for all the groups were 89.3±19.4 ml/min; 86.7±19.8 ml/min; 82.7±20.4 ml/min and 77.7±18.32 ml/min respectively. Mean GFR values of kidney with tumor into four groups were: 44.1±10.3 ml/min; 42.3±11.9 ml/min; 36.9±14.2 ml/min ± 31.5±15 ml/min. Paired analyses showed higher statistical difference between groups, but significant difference were seen only between 2nd and 3rd group (p=0.007). Statistical significance (p<0.001) in function was found when comparing T1 lesions with tumors > 7cm in diameter (mean GRF 43.11±11.22 ml/min vs. 34.76±14.7 ml/min). Paired analysis of kidney with tumor and contralateral kidney showed decreased function on tumor side, but statistical significance was reached only when tumors reached the size of 7cm (p=0.0004).
Conclusion: Correlation between tumor size and kidney function was shown in our analysis. Statistically significant difference was seen between function in kidneys with a tumor below and over 7cm. No difference in total GFR between the groups gives us more information and understanding of hidden mechanisms kidney function deterioration.

UP.287

Is Blood Group a Risk Factor in Renal Cancer?

Martha O, Brad A, Hodade Porav D, Chibelean C, Maier A, Vida O, Todea C**, Vartolomei M**
University of Medicine and Pharmacy, Targu Mures, Romania

Introduction and Objectives: Renal tumor shows an alarming increasing incidence. There are several well known risk factors which play an important role in this pathology. This retrospective study analyses the blood group as a possible risk factor in renal cancer.
Materials and Methods: A retrospective analysis of the risk factors (sex, age, blood group, dislipidaemia, hypertension, diabetes) of 126 patients diagnosed with renal cancer in a period of 4 years,(2008-2012), at the Clinic of Urology of Targu Mures.
Results: The distribution by gender into account, the majority of patients were male 126 (100%) patients 74 (59%), greater percentage of patients were between 51-60 years 47 patients (37%). The average age was 59 years. In 126 patients (100%) 44 (35%) were between 61 and 70 years. Regarding bladder group our findings were the following; group 0; (Rh+) 44 patients (35%), A; (Rh+) 57 patients (45%), gr B; (Rh+): 9 cases (7%), AB; (Rh+) 8 (6%), 0; (Rh-) 2 ((2%), A; (Rh-) 4 patients (3%) and AB (Rh-) 2 patients (2%). From the point of view of dislipidaemia, only 24% of the patients had reported dislipideamia, mainlyhypercolesterolaemia. Distribution of hypertension: 64 (51%) out of 126 Grawitz tumor diagnosed patients were reported with hypertension and 34 (27%) with diabetes mellitus. Ischaemic cardiomiopatia was reported in 25 patients (64%).
Conclusions: Much of the same as the results reported in the literature. The exception is the distribution of blood group because of the available data which are limited. Hypertensive blood group A patients, and enhanced filtration control is indicated (p=0.000532). It is important to note that the risk factors cannot be interpreted individually.

UP.288

Benefit of Three-Dimensional Printing in Robotic Laparoscopic Renal Surgery: Tangible Surgical Navigation Using a Patient-Based Three-Dimensional Printed Kidney

Shiga Y[1], Sugimoto M[2], Iwabuchi T[1], Kawano Y[1], Yokoyama H[1], Ooiwa Y[1], Shimmbori M[1], Hariu K[1], Yamamoto R[1]
[1]Tokyo Nephro Urology Center Yamato Hospital, Tokyo, Japan; [2]Kobe University, Kobe, Japan

Introduction and Objectives: Robotic-assisted partial nephrectomy aims to ensure the recognition of cancer and achievement of a precise excision line according to the shape of the tumor despite the lack of tactile sensation. Therefore, understanding tumor shape and renal vasculature characteristics enables a safer and more reliable surgery. Tangible surgical navigation using a patient-based three-dimensional (3D) printed kidney is an interactive approach. We currently use a 3D printer to fabricate replicas of patients' organs in preparation for surgery. This study shows that our tangible surgical navigation system using a patient-based 3D printed kidney is useful for robotic-assisted partial nephrectomy.
Materials and Methods: After processing data obtained from multidetector computed tomography, we reconstructed an anatomically correct virtual surgical area using the DICOM viewer OsiriX, open-source software. Volume-rendering 3D reconstructions were incorporated on the TilePro multi-input display of the da Vinci S Surgical System to provide anatomical navigation assistance during robotic surgery. Additionally, the 3D printed organ model is composed of a transparent resin that enables visualization of the blood vessels from the outside. These replicated organs are printed using two materials on an Objet Connex 3D printer. Using a replicated kidney model composed of a soft material that can be resected using the robot scissors, it was possible to simulate a real surgery.
Results: In our experience with ten consecutive cases of navigation surgery, the surgical margin and renal function were successfully secured. The median operative time was 145 min, and the mean clamping time was 12 min. The serum creatinine level was within normal limits after the surgery. The use of our navigation system was helpful for gaining a 3D anatomical understanding of the surgical target, since it enabled the surgeon to reduce the ischemic area by performing segmental artery clamping. The shortest ischemic time was 8 min.

Conclusion: This patient-based 3D-printed organ model provides tangible surgical navigation. Replicas of patients' organs provide important orientation for robotic-assisted partial nephrectomy and enable precise clamping of the segmented arteries. The combined use of our interactive navigation system and these replicated organs leads to satisfactory surgical outcomes.

UP.289

Nephro-Sparing Surgery of Urothelial Cancer of the Upper Urinary Tract in Solitary Functioning Kidney (Case)

Roshchin D, Perepechin D, Kachmazov A, Koriakin A
Research Institute of Urology, Moscow, Russia

Introduction and Objectives: Duplicated kidney is presented by two organs separated in the anatomical and physiological terms. Anatomical separation of the urinary tract can give a chance to the fact that the urothelium of the pyelocaliceal system of the second half of kidney may not be subjected to those genetic errors and differentiation failures as in the first.
Materials and Methods: Patient M., 72 years old. Urinary markers: BTA positive; cytology, NMP22 and UBC negative. Ultrasound examination was uninformative. MRI: complete doubling of the right kidney; a lesion of irregular shape (size:2.2x1.1x2.5cm) in the upper third of the right ureter. CT: there was not a clear conclusion on the presence of a tumor. Function of the contralateral pelvic-dystopic kidney was significantly reduced. Ureteroscopy: narrow intramural part of the right ureter (<8Ch) made the procedure uninformative. Diagnostic percutaneous nephroscopy: tumor in the upper ureter completely occlused drainage of pyelocaliceal system. During the open operation a dense formation of about 4 cm length was identified in the ureter of the upper half of the doubled kidney, visually limited by walls of the ureter. The lower ureter was cut off en bloc with a fragment of the bladder wall. Right nephrectomy was performed within the healthy parenchyma. Pyelocaliceal system elements of both kidneys were observed. Histopathological examination: moderately differentiated papillary urothelial carcinoma; no lymph-node metastases were detected.
Results: The final diagnosis: Urotelial cancer of the upper third of the left ureter and lower half of the duplicated right kidney pT1N0M0G2. Status post heminephroureterectomy on the right, retroperitoneal lymphadenectomy. Complete duplication of the right kidney. Pelvic renal ectopia.
Conclusion: Every patient requires a special approach to the staging and treatment selection. In this particular case, the presence of congenital anomalies of the kidney and urinary tract, not only significantly complicated the situation, but also, paradoxically, allowed to perform an unclassified radical surgery, fully preserving the excretory function without sacrificing the radical treatment.

UP.290

Can Preoperative Ureteral Procedure, Cytology and Diabetes Mellitus Predict Bladder Recurrence in Upper Urinary Tract Urothelial Carcinoma?

Jung S, Chung H, Hwang I, Yu H, Hwang E, Kim S, Kang T, Kwon D, Park K
Chonnam National University Medical School, Gwangju, South Korea

Introduction and Objectives: Although several studies have addressed some risk factors for the subsequent development of bladder cancer after primary upper urinary tract urothelial carcinoma (UUT-UC), risk factors for bladder recurrence are still a matter of debate. We assessed the impact of the preoperative ureteral procedure and preoperative urine cytology on bladder recurrence after primary UUT-UC. We determine the risk factors of bladder recurrence in patients with diabetes mellitus (DM) who were treated for UUT-UC.
Materials and Methods: From January 2004 to December 2012, we analyzed data from 172 patients with UUT-UC who underwent nephroureterectomy with bladder cuff excision. Patients with concomitant bladder cancer, local recurrence and metastases were excluded from the analysis. Clinicopathologic data for the remaining 115 patients with UUT-UC were retrospectively reviewed. Preoperative urine cytology was examined using washing urine. We assessed the association of Preoperative cytology (positive, negative and atypical) with DM and bladder recurrence. The influence of other traditional prognostic factors, including tumor stage, grade, location, degree of hydronephrosis and ureteral procedure (ureteroscopy, retrograde ureteropyelography) on bladder recurrence-free survival (RFS) rates were analyzed using Kaplan-Meier analysis and Cox proportional hazards regression analysis.
Results: Among 63 renal pelvis and 52 ureteral tumor cases, bladder recurrence was identified in 50 cases (43.5%). The median follow-up after NUx was 31.5 months. The median time to first bladder recurrence was 25 months. Significant risk factors for bladder recurrences on univariate analysis were diabetes mellitus (P=0.001), Operation method (P=0.047) and T stage (P=0.027), but preoperative positive urine cytology, RGP, and ureteroscopy were not risk factors for bladder recurrences. Multivariate analysis revealed that only diabetes mellitus was significant for bladder recurrence.
Conclusion: Risk factors for the subsequent development of bladder cancer after NUx were diabetes mellitus. Preoperative ureteral procedure and preoperative urine cytology were not determined as risk factors for subsequent bladder recurrence.

UP.291

The Surgical Wait Time Affects Oncologic Outcomes in Upper Urinary Tract Urothelial Carcinoma Located in Ureter

Lee J, Kwon S, Kim B, Kim H, Kim T, Yoo E, Kwon T, Chung S, Kim B
Kyungpook National University, Daegu, South Korea

Introduction and Objectives: The surgical wait time between diagnosis and nephroureterectomy might affect oncologic outcomes in upper urinary tract urothelial carcinoma (UTUC). The aim of the current study was to assess the effect of surgical wait time on the oncologic outcomes of patients with UTUC, particularly when located in the ureter.
Materials and Methods: A total of 138 patients diagnosed with UTUC after nephroureterectomy conducted between January 2001 and December 2010 were enrolled in this retrospective study. Using an optimal surgical wait time cutoff value (30.5 days), we allocated patients to an early group (<1 month) or a late group (>1 month). Cancer specific survival and local/distant recurrence free survival rates were estimated using the Kaplan-Meier method. Factors influencing cancer specific survival (CSS) and local/distant recurrence free survival (RFS) after radical surgery were identified using Cox proportional hazards regression models. Subgroup analysis was performed on ureteral urothelial carcinoma using the same methods.
Results: Of the 138 UTUC patients, 75 underwent nephroureterectomy early (<1 month) and 63 patients underwent nephroureterectomy late (>1 month). After a mean follow-up of 44 months, CSS and RFS were non-significantly different in the two groups. However, subgroup analysis of the 80 patients with ureteral urothelial carcinoma showed that CSS and RFS were significantly greater in the early subgroup, and multivariate analysis showed that a surgical wait time of >1 month was an independent prognostic factor of CSS and RFS in ureteral urothelial carcinoma ($P = 0.04$ and $P < 0.001$).
Conclusion: A surgical wait time of >1 month in ureteral urothelial carcinoma was found to be an independent prognostic factor of disease recurrence and cancer-specific mortality. Appropriate surgical wait time should be considered in treatment for patient with ureteral urothelial carcinoma.

UP.292

Incidence and Outcome of Interstitial Lung Disease (ILD) with Everolimus Treatment for Metastatic Renal Cell Carcinoma

Takeda H, Nakano Y, Narita H
Dept. of Urology, Tosei General Hospital, Aichi, Japan

Introduction and Objectives: Interstitial lung disease (ILD) is known as one of the adverse events during treatment with everolimus for

metastatic renal cell carcinoma (mRCC). To elucidate the patterns of interstitial lung disease during everolimus treatment in patients with metastatic renal cell carcinoma, we reviewed eight cases of everolimus-induced interstitial lung disease.
Materials and Methods: We retrospectively assessed the incidence and outcome of ILD in mRCC patients treated with everolimus. From 2010 to 2014, 27 cases were treated with everolimus after failure of one or two TKIs in our institute. All adverse events were graded in accordance with NCI CTCAE, version 3.0.
Results: A total of 27 patients received treatment with everolimus. They included 19 male and 8 female patients ranging in age from 54 to 86 years (median 66.4). According to MSKCC risk criteria, 8 cases were at favorable risk, 15 cases were at intermediate risk, and 4 cases were at poor risk. Median treatment term was 4.5 months (range 2-22 months). SD was in 19 cases and PD was in 8 cases. Progression free survival was 3.46 months and overall survival was 11.8 months. ILD cases (average age 71.4) included 5 male and 3 female. Median treatment term was ranging in 2 weeks-20 weeks, median 6.62 weeks. ILD was found in 8 cases (29.6%). Five (62.5%) cases were G1, 3 (31.5%) were G2. Average dose were 9.16mg. Chest X-ray demonstrated diffuse infiltrates in lung fields, and chest computed tomography showed bilateral reticular and ground-glass opacities. Serum levels of lactate dehydrogenase (5cases/7), CRP: median 3.51 (5/8), SPD: median 89.47 (6/8) and KL 6: median 692.2 (5/8) were elevated. In two cases with mild interstitial lung disease, the everolimus therapy was successfully continued. In four cases with Grade 3 interstitial lung disease, the drug was discontinued and steroid therapy was initiated. Pulmonary symptoms and radiological abnormalities resolved within 2 months. Corticosteroid therapy was initiated in 2 cases. In 4 of 8 ILD cases, everolimus was re-challenged. In our series, patients with ILD showed significantly better progression free survival than those without ILD (PFS was 8 months vs. 3 months ($p<0.001$). There were no significant different between the 2 groups in overall survival (12 months in patients with ILD vs. 10 months in patients without ILD. Log-rank, NS).
Conclusions: Everolimus appears to be effective and well-tolerated in our institute. Re-challenge of everolimus was feasible after improving of everolimus-induced ILD in cases of grade 1-2.

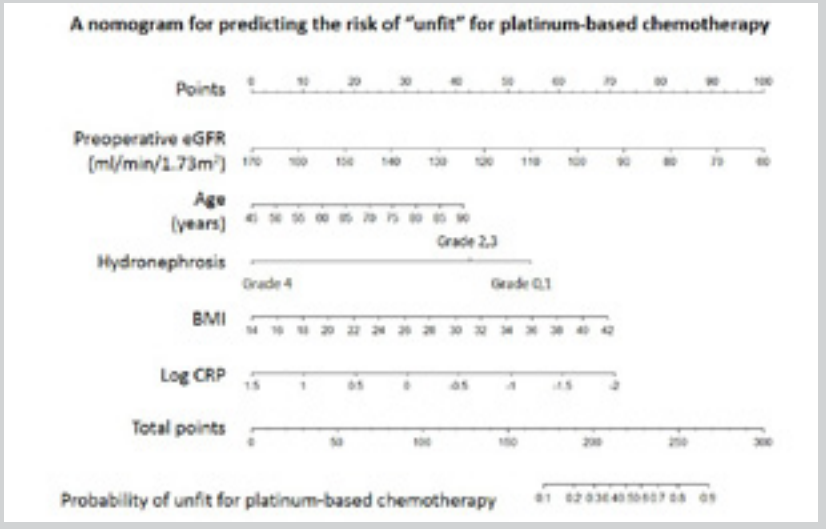
UP.293
Preoperatively Predicting Patients Who Are "Unfit" for Cisplatin-Based Chemotherapy in Upper Tract Urothelial Carcinoma
Junichiro I**, Minato Y**, Manabu T, Soichiro Y, Yoh M, Noboru N, Kazutaka S, Yasuhisa F, Kazunori K
Tokyo Medical and Dental University Graduate School, Tokyo, Japan

Introduction and Objectives: Many patients with upper tract urothelial carcinoma (UTUC) become "unfit" for cisplatin-based chemotherapy (UCC) with an estimated glomerular filtration rate (eGFR) < 60 ml/min/1.73 m^2 after radical nephro-ureterectomy (RNU). To identify patients who are "unfit" for cisplatin-based adjuvant chemotherapy and "fit" for neoadjuvant chemotherapy, a preoperative UCC risk prediction tool for patients undergoing RNU is needed. We investigated the predictors of post-RNU renal function in a Japanese patient cohort and developed a formula to predict postoperative eGFR and a predictive model for the risk of UCC after RNU.
Materials and Methods: Between 1994 and 2013, 192 patients with UTUC underwent RNU. Of these patients, 49 (26%) preoperative UCC patients were excluded. Laterality, age, gender, degree of hydronephrosis, body mass index (BMI), performance status, history of bladder cancer, concomitant bladder cancer, symptom at diagnosis, serum level of C-reactive protein (CRP), and hemoglobin were evaluated. A linear regression–based formula to predict eGFR and a logistic regression–based model to predict UCC patients were developed.
Results: Median postoperative eGFR was 62 ml/min/1.73m^2 (Interquartile range 54–72) and 62 (43%) patients became UCC at 1 month after RNU. Preoperative eGFR, age, degree of hydronephrosis, BMI, and C-reactive protein were independent predictors of postoperative eGFR less than 60 ml/min/1.73 m^2. In the logistic regression–based model (Figure 1), the probability of becoming UCC was given by the following formula with an area under the receiver operating characteristic curve of 0.77: P=1 / (1+exp(Y)), where Y = –0.04 × preoperative eGFR (ml/min/1.73m^2) + 0.04 × age (years) - 0.54 (if hydronephrosis grade 2 or 3) - 2.48 (if hydronephrosis grade 4) + 0.11 × BMI – 0.92 × log (CRP).
Conclusion: We developed a predictive model to identify UTUC patients who are postoperatively "unfit" for cisplatin-based adjuvant chemotherapy.

UP.294
Prognosis of Patients Undergoing Radical Nephroureterectomy for Upper Urinary Tract Urothelial Carcinoma: Use of the Neutrophil-Lymphocyte Ratio and Erythrocyte Sedimentation Rate
Shin S, Ryoo H, Sung H, Jeon H, Jeong B, Seo S, Jeon S, Choi H, Lee H
Sungkyunkwan University School of Medicine, Seoul, South Korea

Introduction and Objectives: To evaluate preoperative erythrocyte sedimentation rate (ESR) and neutrophil-lymphocyte ratio (NLR) as prognostic factors in patients underwent radical nephroureterectomy for upper tract urothelial cancer (UTUC).
Materials and Methods: A total of 410 patients were retrospectively reviewed. Elevated NLR was defined as ≥2.5. Normal ESR was ranged as 0-22 and 0-27 in men and women, retrospectively. Patients were divided into 3 groups: those with ESR and NLR in normal range (Group 0, n=168), elevations in either ESR or NLR (Group I, n=169), and elevations in both ESR and NLR (Group II, n=73).
Results: Median age was 64 years with follow-up duration of 40.2 months. The 35.6% and 41.2% of patients had elevated NLR and ESR, respectively. Group II was associated with advanced tumor status including size, grade, stage, lymph node, and margin ($p<0.05$). Preoperative ESR (HR=1.784, 95% CI=1.173-2.712), NLR (HR=1.704, 1.136-2.556), and prognostic grouping (HR=2.285, 1.397-3.737

UP.293, Figure 1.



for Group I; HR=2.962, 1.719-5.102 for Group II) were independent predictors for progression-free survival (PFS) in the multivariate model (p<0.05). Prognostic grouping was also an independent prognostic factor for cancer-specific survival (CSS) and overall survival (OS). Time-dependent area under the receiver-operating-characteristic curves of NLR plus ESR was greater than that of NLR alone regarding oncologic outcomes (p<0.05).
Conclusions: Prognostic grouping using ESR and NLR was identified as an independent prognostic marker in patients with UTUC. The addition of ESR improved prognostic value of NLR alone to predict PFS and OS. We suggest a new prediction model using common tests in clinical practice.

UP.295
Preoperative Hydronephrosis Predict the High Frequency of Intravesical Recurrence after Nephroureterectomy for Upper Urinary Tract Urothelial Carcinoma
Inokuchi J[1], Kuroiwa K[2], Kiyoshima K[1], Tatsugami K[1], Yokomizo A[1], Naito S[1]
[1]Kyushu University Hospital, Fukuoka, Japan; [2]Miyazaki Prefectural Miyazaki Hospital, Miyazaki, Japan

Introduction and Objectives: Bladder tumors have been reported to be found frequently after nephroureterectomy (NU) for patients with upper urinary tract urothelial carcinoma (UUT-UC). Although many studies have reported clinicopathological features of UUT-UC which affect bladder tumor development, these predictive factors are still controversial. Furthermore, the prognostic impact of intravesical recurrence is not clear. The aim of this study was to identify predictive factors of intravesical recurrence after NU for UUT-UC and verify prognosis of these patients.
Materials and Methods: Clinicopathological data were retrospectively collected from patients who underwent NU for UUT-UC without distant metastasis between March 1993 and June 2013 at Kyushu University Hospital. We excluded patients who received cystectomy previously or concurrently, and patients with short follow-up period within 3 month. With such criteria, data from 161 patients were available for evaluation. Kaplan-Meier method with a log-rank test was used for survival analysis. A Cox proportional hazard model was used for multivariate analysis.
Results: The median age and follow-up period after surgery were 71 years (range 32-88) and 44.6 months. For pathological stage, 92 (57.1%) and 65 (40.4%) had non-muscle invasive and muscle invasive diseases, respectively. Of the 161 patients, 79 patients developed intravesical recurrence at a median interval of 8.4 months after surgery, and 71 (89.9%) patients had intravesical recurrence within 2 years after surgery. Multivariate analysis revealed that previous or synchronous bladder tumor and preoperative hydronephrosis were associated with high frequency of intravesical recurrence. Furthermore, there were no significant differences in extravesical recurrence-free survival or disease-specific survival between patients with intravesical recurrence and those without recurrence.
Conclusion: Although this study is limited by its retrospective nature and its small sample size, this study suggests that preoperative hydronephrosis and previous or synchronous bladder tumor might be risk factors for intravesical recurrence after NU for UUT-UC. Furthermore no correlation was detected between intravesical recurrence and overall survival. Even though the cystocopy should be observed in all cases because of high intravesical recurrence rate, intravesical recurrence might not have impact on prognosis.

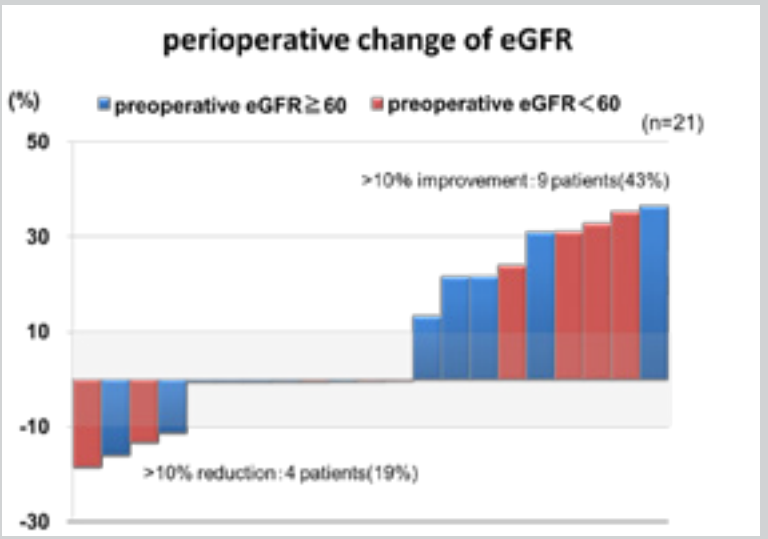
UP.296
Renal Tumor Size Is an Independent Prognostic Factor for Overall Survival in von Hippel-Lindau Disease
Song S, Jeong I, Kwon T, Hong B, Park H, Kim C
University of Ulsan College of Medicine, Asan Medical Center, Seoul, South Korea

Introduction and Objectives: Although the impact of renal tumor size on the progression of VHL disease has been explored, it remains unclear whether renal tumor size affects survival. Therefore, the present retrospective cohort study was performed to evaluate the impact of RCC on survival in VHL disease and the relationship between tumor size and survival.
Materials and Methods: In this retrospective cohort study, the medical records of 72 patients who presented with VHL disease between 1994 and 2012 were reviewed. Clinical VHL related characteristics were analyzed and the prognostic value of renal tumor size for overall survival was assessed by using Cox regression models.
Results: Of the 72 VHL patients, 42 (58.3%) and 30 (41.7%) were male and female, respectively. The mean age was 37.9 years, and the median follow-up period was 61.5 months. In terms of VHL related manifestations, 40 (55.6%) had RCC, 46 (63.8%) had hemangioblastoma in the cerebellum, 10 (13.9%) had hemangioblastoma in the spinal cord, 34 (47.2%) had a pancreatic mass, 18 (25.0%) had pheochromocytoma, and 14 (19.4%) had retinal capillary hemangioma. RCC was a major cause of mortality: of the 11 patients who died, nine (12.5%) died due to RCC progression. The 5-year overall survival rate was 85.6% for all patients, 96.9% for patients without RCC, 83.6% for patients with RCC <3cm, and 75.8% for patients with RCC ≥3cm. Multivariable analysis showed that RCC ≥3cm was an independent predictor of overall survival (Hazard ratio [HR] 9.87, 95% confidence intervals [CI] 1.17–83.00, p=0.035) along with age (HR 1.05, 95% CI 1.01–1.10, p=0.027).
Conclusions: Renal tumor size was an independent prognostic factor for overall survival in VHL disease. This observation will be helpful for planning RCC treatment in VHL disease. However, because the study cohort was relatively small, further studies are needed to determine the clinical validity of this treatment strategy.

UP.297
Favorable Renal Function after Distal Ureterectomy for Lower Ureteral Cancer: One-Year Postoperative Renal Functional Result
Moriyama S[1,2], Takeshita H[2], Kagawa M[1], Chiba K[1], Yokoyama M[2], Ishioka J[2], Numao N[2], Saito K[2], Fujii Y[2], Kihara K[2], Owada F[1], Noro A[1]
[1]Saitama Red Cross Hospital, Saitama, Japan; [2]Tokyo Medical and Dental University Graduate School, Tokyo, Japan

Introduction and Objectives: Distal ureterectomy (DU) for the ureteral cancer (UC) could be an optional therapy for lower UC as kidney–sparing surgery. There have been few reports whether preserved kidney with DU can maintain renal function postoperatively. Therefore, we retrospectively reviewed renal function after DU for lower UC.
Materials and Methods: Between 1973 and 2013, a total of 32 patients underwent DU due to low renal function, advanced age, impaired performance status and strong patients' desire. Twenty-four patients with detailed clinical information were enrolled in this study. Primary endpoint was one–year postoperative renal function and secondary endpoint was oncological outcome. To evaluate renal function, we used the Japanese equation (estimated glomerular filtration rate [eGFR] [ml/min/1.73m^2] = $194\times Cr^{-1.094}\times Age^{-0.287}\times 0.739$ [if female]).
Results: Median age at DU was 71 (range, 55–88) and preoperative median eGFR was 61.0 ml/min/1.73m^2 (21.0–126.1). Nineteen patients (79%) were pathological T1 (pT1) or less and five (21%) were pT2 or more. The median length of follow-up was 70.8 months. The cancer–specific survival rate and metastatic–free survival rate at 5 years were 94.7 and 87.5%, respectively. The recurrence–free survival rates at 3 years in the upper urinary tract and in the bladder were 86.5 and 44.4%, respectively. Three patients underwent unilateral nephroureterectomy due to two upper urinary tract recurrences and one uncontrolled infection in one year after surgery. Eventually, 21 patients (87.5%) with bilateral kidneys were evaluated in the renal functional study. Postoperative median eGFR was 61.3 ml/min/1.73m^2 (25.7–125.5). Reduction of >10% in eGFR after DU was seen in 4 patients (19%), however,

UP.297, Figure 1.



improvement of >10% in eGFR was seen in 9 patients (43%). In 12 patients with preoperative eGFR over 60, 11 (92%) had kept their renal functions with over 60 ml/min/1.73m^2. There are no patients who need hemodialysis during the follow-up period.

Conclusion: In our selected cases, most of the patients could preserve renal function one year after DU. Some cases improved postoperative eGFR and about a half of cases maintained eGFR >60 ml/min/1.73m^2 perioperatively.

UP.298

Role of Cytoreductive Nephrectomy for Metastatic Renal Cell Carcinoma in the Era of Targeted Therapy

Liu Z[1], Chong K[1], Shang Y[2]
[1]Tan Tock Seng Hospital, Singapore; [2]Oncology, John Hopkins Medicine International, Singapore

Introduction and Objectives: Cytoreductive nephrectomy (CN) is an established component for the treatment of metastatic renal cell carcinoma (mRCC) with two prospective, randomised trials showing an advantage in overall survival (OS) in patients who underwent CN before immunotherapy. Recent advances in the molecular biology and pathways associated with pathogenesis of renal cell carcinoma (RCC) have led to the development of novel molecular targeted therapies. However, little is known on the role of CN in the era of targeted therapy.
Materials and Methods: A retrospective review of patients with synchronous mRCC who were treated in our institution's Oncology and Urology clinic from January 2008 to October 2013 was conducted. Twenty-seven patients were identified. Fifteen had CN and targeted therapy; seven had CN and then observation of stable metastases with a view of starting targeted therapy if needed; and five had targeted therapy alone. Targeted therapy was planned to continue until disease progression, intolerable toxicity or death. We compared clinicopathological factors between the group with CN and targeted therapy (Group A) versus the group with targeted therapy alone (Group B). OS was defined as time of diagnosis to death of any cause or to date of last follow-up and time to treatment failure (TTF) was defined as time from initiation of targeted therapy to date of progression, drug cessation or last follow-up. Chi-square tests were used to analyse categorical variables and Student t-tests were used for continuous variables.
Results: Clinico-pathological variables did not vary except for Karnofsky performance status. Mean time from CN to initiation of targeted therapy was 9.6 months. Patients in Group A had a mean OS of 27.0 months versus 10.2 months in the Group B and this was statistically significant with a p value of <0.01. Mean TTF was 7 and 6.6 months in Group A and Group B respectively (p = 0.48).
Conclusions: In this retrospective study with its own limitations, CN was independently associated with a prolonged OS in the era of targeted therapy for mRCC.

UP.299

Patient Selection for Renal Cryoablation: Does Preoperative Aspects and Dimensions Used for an Anatomical (PADUA) Nephrometry Scoring Help?

Shearer L, Nair R, Pai A, Gonsalves M, Patel H, Le Roux P**, Anderson C**
St. George's Hospital, London, UK

Introduction and Objectives: Renal cryoablation has established itself as a minimally invasive treatment option for the management of small renal masses. Its oncological effectiveness however is hindered by the many anatomical variables of the tumour in question. There currently exists a paucity of tools to aid case selection, with resultant oncological compromise and a potential cost burden on the health sector. The PADUA score is a simple anatomical system that can be used to predict the risk of perioperative complications in patients undergoing nephron-sparing surgery. Our study evaluated oncological and functional outcomes for small renal tumours treated with cryotherapy over a ten-year period using the PADUA nephrometry scoring system.
Materials and Methods: A prospective study of 67 consecutive patients undergoing standard 2 freeze-thaw cycles of renal cryotherapy was performed over 121 months. These were performed laparoscopically initially; more recently a percutaneous approach was introduced. Individual Pre-operative Aspects and Dimensions Used for an Anatomical (PADUA) nephrometry scores (range 6-12) were evaluated against oncological and functional outcomes.
Results: We performed 67 ablations in 67 patients. Median tumour size was 25mm (range: 5-56mm) and 42 masses had PADUA scores of 8 or higher (median follow-up 34 months). Primary therapy failed in 6 cases all of whom had PADUA scores of between 8 and 12. Four failures were considered incomplete initial ablations due to difficulty in targeting. There was no significant change in renal function in all cases.
Conclusion: Patients undergoing renal cryotherapy are generally unsuitable for extirpative surgical treatment. However in selecting patients, the greater the complexity of the tumour the less likely cryotherapy is likely to be beneficial. PADUA scores of 8 or lower and renal tumour size of less than three centimetres are a useful patient selection criterion for successful renal cryotherapy.

UP.300

Open Partial Nephrectomy Using Parenchymal Clamping

Lezrek M, Bazine K, Tazi H, Badraoui M, El Kamari M, Beddouch A, Qarro A, Alami M
Dept. of Urology, Military Hospital Moulay Ismail, Meknes, Morocco

Introduction and Objectives: We present our experience of open partial nephrectomy, for tumors, with parenchymal clamping.
Materials and Methods: Between May 2003 and February 2014, 20 patients (9 men and 11 women) were treated with this technique. The patients had an average age of 56 years-old (35 to 78). The tumors were discovered incidentally in all the patients. Thirteen tumors were localized in the right kidney and 8 in the left kidney. Preoperative renal function was normal in all the cases. The average tumor size was 5.66 cm (3-9.4). The tumor was in the upper, middle, and lower pole in 8, 6 and 7 patients.

Fifteen were peripheral and 6 were central tumors. Through a flank incision, nephrolysis is performed. The renal vessels are isolated, but not clamped. One curved vascular or gastrointestinal clamp is positioned around the tumor with a 5 mm parenchyma margin, sometimes 2 clamps are necessary. In the first 14 cases, the tumorectomy is performed with electrocautery and then the small vessels and the calyceal system are oversewn with figure-of-8-sutures. Renal reconstruction is performed over fat bolsters or Surgicel. Lastly, the tumorectomy is performed with progressive blunt dissection, and clamping of vascular and calyceal structures; then, they are sharply cut and ligated. Renal reconstruction is performed with only figure-of-8-sutures. For central tumors, the renal artery was clamped only during tumorectomy. Parenchymal clamping is performed for renal reconstruction.

Results: The average duration of parenchymal clamping was 35 min and the mean intervention time was 135 min. For central tumors, the renal artery was clamped for 5 minutes in 5 patients and 20 minutes in 1. The average operative bleeding was 150 ml. The mean hospital stay was 5 days. All the tumors have negative margins. Seventeen tumors were RCC and 4 were oncocytoma. With a follow-up of 2-76 months, there is no evidence of recurrence in 19 patients. One patient presented with pulmonary metastasis after 36-months. Another patient had a left nephrectomy for local recurrence after 40-months.

Conclusion: Partial nephrectomy with parenchymal clamping is an attractive, safe, and effective technique in the conservative surgery of the kidney.

UP.301

Are We Really Performing More Partial Nephrectomy? Retrospective Analysis of a Single Centre in Hong Kong

Cheng C, Lai T, Kan R**, Chan M**, Chu P, Man C
Tuen Mun Hospital, Hong Kong

Introduction and Objectives: To retrospectively analyze the trend of partial nephrectomy for renal mass in Tuen Mun Hospital (TMH).

Materials and Methods: From Jan 2004 to Dec 2013, adult patients (> 18 years) who underwent partial nephrectomy for renal mass were retrospectively analyzed. Patient demographics, indication of operation, surgical approach, tumor characteristics and oncological outcome were analyzed. Data of former 5 years (2004 – 2008) was compared to that of latter 5 years (2009-2013) statistically.

Results: Sixty five patients (35 male, 30 female), with mean age 58.7 years (range 23-85) were included. There were 28 left partial and 37 right partial. The number of absolutes, relative and elective indications was 6, 25 and 34 respectively. The mean R.E.N.A.L. nephrometry score was 7.27 (range 4-11). Only one case was performed laparoscopically, the others were open partial. Histologically there were 43 cases of renal cell carcinoma of different T stage (33 pT1a tumor, 7 pT1b, 1 pT2a, 1 pT3a, and 1 pT4), 20 angiomyolipoma and 2 simple cysts. Fifty four cases had negative resection margin. Two cancer cases recurred locally (recurrence rate 3%) and 1 metastasized (metastatic rate 1.5%). The cancer specific mortality was 0%. Comparing former 5 years to latter 5 years, the number of operations per year was tripled (3.2 vs. 9.8) with significantly more elderly cases (mean age 48 vs. 61.2, p = 0.012) and the proportion of elective indication (25% vs. 61%, p = 0.032) and cancer cases (40% vs. 78%, p = 0.02) was significantly increased, while the mean R.E.N.A.L. score, tumor T stage and resection margin involvement did not differ significantly.

Conclusion: Since the advantages of nephron sparing surgery over radical nephrectomy were well recognized worldwide, we tended to perform more partial nephrectomy in recent years and shifted towards operating on older patients, normal functioning kidney and radiologically malignant renal tumor. The oncological outcome was satisfactory.

UP.302

Tumour Size Alone Rather Than Overall PADUA Score Predicts Oncological Success after Cryotherapy for Small Renal Masses

Shearer L, Ayres B, Sooriakumaran P, Ting N, Issa R, Le Roux P, Patel U, Munneke G, Gonsalves M**, Anderson C**
St George's Hospital, London, UK

Introduction and Objectives: Cryoablation is emerging as a viable alternative to extirpative surgery for the management of small renal masses. Our objective was to evaluate whether tumour size and PADUA scores are valuable in predicting treatment response.

Materials and Methods: Data was collected prospectively onto a secure database. Patients had two 10-minute freeze-thaw cycles and were biopsied during the procedure. Tumour size and overall PADUA scores were calculated on all cases.

Results: We performed 68 ablations in 62 patients. Median tumour size was 25mm (IQR 20-31mm); median follow-up of the entire cohort was 32 months (10-65m). Nine ablations (13.2%) failed, due to persistent disease (n=8), or intraoperative tumour fracture (n=1); median time to failure was 19m (IQR 7-26). Median size (PADUA) of failed tumours was 30mm (8); there was no statistically significant difference in PADUA scores compared to non-failures, but size was worse for failures (p=0.03). Renal function did not decrease to less than 10% baseline in any case regardless of size or PADUA score.

Conclusions: Cryotherapy does not affect renal function; size is important in predicting treatment failure and the PADUA classification does not appear to have any incremental value in this risk assessment.

UP.303

Does Lymphovascular Invasion Affect Oncological Outcomes in Upper Tract Urothelial Carcinomas?

Chong K, Yeow S, Liu Z
Tan Tock Seng Hospital, Singapore

Introduction and Objectives: Upper tract urothelial carcinomas (UTUCs) have a relatively poor prognosis compared to other genitourothelial cancers, contributed by their advanced presentation at diagnosis and significant rate of post-surgical recurrence. Lymphovascular invasion has been found in the European population to be an independent prognostic factor for worse oncological outcomes. We aimed to assess the impact of LVI as well as other clinicopathological variables on the overall survival (OS) and disease-free survival (DFS) in the Asian population.

Materials and Methods: All patients who underwent nephroureterectomy for non-metastatic UTUC at our centre over a period of 5 years were retrospectively identified. Prognostic factors examined included patient characteristics, disease characteristics and preoperative biochemical data. Each factor was analysed via Log-rank test and multivariate Cox regression model for statistical significance.

Results: Among all the patients, 53.5% had disease recurrence with 13 (56.6%) recurring within 12 months and 21 (91.3%) within 24 months. Six patients demised, of which 5 were due to disease. The presence of LVI was found to have > 50% mortality within 24 months. Lymphovascular invasion was found to be predictive of a worse overall survival on both univariate (p = 0.01) and multivariate analysis (p = 0.031, 95% CI 0.34 – 0.85). However it was not significant in predicting DFS. Tumour stage and nodal status were each found to be predictive of disease recurrence. Presence of CIS (p = 0.032, HR 4.75) and diabetics (p = 0.015, HR 6.76) were independently associated with a worse DFS. Interestingly, the presence of previous bladder tumour was associated with a better DFS on multivariate analysis (p = 0.015, HR 0.19).

Conclusion: LVI has shown to be a good predictor of poor survival in UTUC; its effect on DFS may not have been evident in our study due to its associated high mortality rate. For risk stratification in DFS, tumour stage, nodal status, presence of CIS, and diabetic status may be used to guide postoperative follow-up to allow timely detection of tumour recurrences.

UP.304

Predictors of Early Complications after Nephrectomy for Renal Tumors

Mahmoud M, Algammal M, El Ewedi S, Khaled S, Saleh S
Al Azhar University Hospitals, Cairo, Egypt

Introduction and Objectives: To evaluate and predict the risk factors for early postoperative morbidity and mortality in patients with renal tumors, undergoing surgical removal of the tumor.
Materials and Methods: The medical records of the patients underwent radical nephrectomy (RN), partial nephrectomy (PN) or nephroureterectomy (NU) due to renal masses, during the period from March 2008 to December 2012, were reviewed. Demographic patient data, Clinical patient data, tumor characteristics, Operative surgical data were evaluated and correlated to the early post-operative complications.
Results: Eighteen patients underwent RN, 8 PN and 3 patients underwent (RNU) with excision of bladder cuff. Eleven patients (38%) had pre-operative co-morbid diseases. (55.2%) of the studied patients developed intra-operative complications and (62%) of them developed post-operative complications. Peri-operative bleeding recorded in 12 (41.4%) patients. Pleural injury occurred in (20.6%) of patients, Paralytic ileus in (17.2%) of patients, GIT injury in (17.2%) , and IVC injury in (17.2%) of patients, UTI in (13.7%), DVT in (6.9%), impaired renal function in (10.3%), wound infection in (10.3%), Pneumothorax in (10.3%), while urinary fistula recorded in one patient had PN (3.4%). One patient in (17.2%) died in the Early Post-operative period. Male patients had increased risk of IVC injury (P value= 0.009), decreased renal function (P value = 0.050), and deep wound infection (P value = 0.050). Hypertension had a strong positive correlation to post-operative bleeding (P value = 0.036). Coronary artery diseases had a positive correlation to early post-operative death (P value = 0.027). There is a positive correlation between the lower experience of the surgeons and Development of IVC (P value = 0.031), GIT injury (P value = 0.044), intra-operative bleeding (P Value = 0.024) and post-operative paralytic ileus (P value = 0.044). Lumber approach had strong correlation to development of pleural injury intra-operatively which developed in 6 patients (P value = 0.031). Transabdominal approach had strong correlation to development post-operative paralytic ileus (P value = 0.036).
Conclusion: The study revealed that male gender, pre-operative co-morbidities, surgical approach and surgeon experience are essential risk factors for development of peri-operative complications. Also development of these complications increased duration of post operative hospital stay.

UP.305

Pre-Operative Nephrometry Scores Do Not Influence Decision-Making in the Surgical Management of Localised Renal Cell Carcinoma

Roy A[1], Ahmed D[1], Powles T[2], Peters J[3], Patki P[1]
[1]Dept. of Urology, The Royal London Hospital (Bart's Health), London, UK; [2]Dept. of Oncology, St. Bartholemew's Hospital (Bart's Health), London, UK; [3]Dept. of Urology, Whipps Cross University Hospital (Bart's Health), London, UK

Introduction and Objectives: European Association of Urology guidelines suggest that nephron sparing surgery (NSS) should be first-line treatment for localised RCC. Radical nephrectomy (RN) should be considered where NSS is technically unfeasible, the tumour is locally advanced or the patient is medically unfit. RENAL and PADUA nephrometry scores may predict outcomes after NSS with a score >8 suggesting increased anatomical complexity. The decision to perform RN or NSS is made within the context of an MDT, based on radiological staging. We aimed to identify whether retrospective assessment of renal nephrometry had any bearing on the ultimate decision made with regards to surgical technique.
Materials and Methods: We retrospectively analysed all patients who had undergone RN/NSS at our institution during a sixteen month period from September 2012. All patients and their imaging were reviewed at a specialist renal MDT and the recommended surgical outcome recorded. The pre-operative imaging was re-reviewed and RENAL and PADUA nephrometry scores calculated for each case.
Results: Sixty-six patients underwent renal surgery during the period of study of which 54 were available for review (32 male, mean age 60+/-12yrs). Cases with TCC and where imaging was unavailable were excluded. Seven partial nephrectomies (1 open (7 VHL tumours), 6 laparoscopic) and 47 radical nephrectomies (12 open, 35 laparoscopic) were performed. Nephrometry scores were elevated in all patients undergoing open radical nephrectomy (RENAL 9-12, PADUA 11-13). Laparoscopic radical nephrectomy was performed in six patients with nephrometry scores <8 (multifocal tumours 3, medically unfit (ASA3) 1, post RFA recurrence 1 and patient choice 1). The remainder of the radical nephrectomy cases had elevated nephrometry scores (RENAL 8-10, PADUA 8-13). Of the 6 patients undergoing laparoscopic partial nephrectomy, one had an elevated nephrometry score (RENAL 9, PADUA 11) but with no evident adverse sequelae.
Conclusion: Nephrometry scores appear to correlate with clinical decision-making, however are not necessarily required to determine the type of surgery that will be undertaken. Nephrometry scoring may be helpful in allowing comparison of series by allowing stratification by complexity.

UP.307

The Association between the Anatomical Features of Renal Tumors and the Functional Outcomes of Robot-Assisted Partial Nephrectomy

Lee J[1], Cho S[2], Jeon C[3], Ko K[3], Kim H[3]
[1]Sanggye Paik Hospital, Inje University College of Medicine, Seoul, South Korea; [2]SMG-SNU Boramae Medical Center, Seoul, South Korea; [3]Seoul National University College of Medicine, Seoul, South Korea

Introduction and Objectives: To evaluate associations between PADUA scores, which represent the anatomical features of renal tumors, and postoperative renal functions in patients after robot-assisted partial nephrectomy (RAPN) and warm ischemic times (WITs).
Materials and Methods: The clinical records of 106 patients, who underwent RAPN for a single localized renal tumor between April 2009 and June 2012, were reviewed. Postoperative renal function was evaluated using estimated glomerular filtration rate (eGFR) in 85 patients that were followed for at least 6 months. PADUA scores for renal tumors were calculated using contrast-enhanced CT images, if needed, along with MR images in some cases.
Results: PADUA scores were significantly correlated with WITs (p = 0.019) and percent change in eGFR at 6 months postoperatively (p = 0.005). PADUA score (continuous variable, OR: 1.694; p = 0.007) and high risk (PADUA score ≥10, OR: 5.429; p = 0.020) were significantly associated with a WIT of ≥30 minutes by multivariate analysis. An increase in PADUA score of 1 point was associated with an eGFR decrease of >20% at 6 months after RAPN (OR: 1.799; p = 0.076). In addition, high risk (PADUA score ≥10, OR: 13.965; p = 0.003) was found to be an independent predictor of an eGFR decrease of >20% at 6 months after RAPN.
Conclusion: The PADUA classification provides a reliable means of predicting WIT and postoperative renal functional outcome after RAPN. Furthermore, the study suggests that anatomical aspects of renal tumors are associated with functional outcome after RAPN.

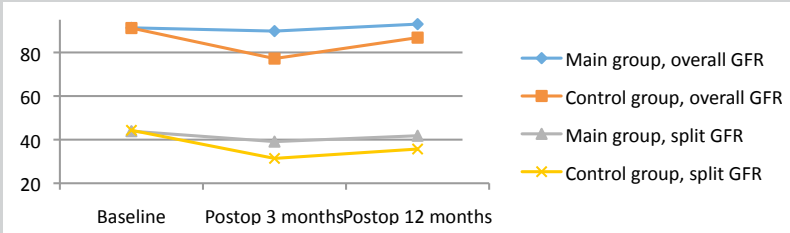
UP.308

Results of Randomized Trial of Ischemia Effect during Partial Resection on Kidney Function

Voylenko O, Stakhovskyi O, Vitruk I, Stakhovsky E
National Cancer Institute, Kiev, Ukraine

Introduction and Objectives: Use of central ischemia during nephron-sparing surgery (NSS) is common practice of bleeding control. Ischemia impacts kidney function with further

UP.308, Figure 1.



development of chronic kidney disease (CKD). The objective of this study was to analyze ischemia effect after NSS on kidney function in long postoperative period.

Materials and Methods: Prospective randomized trial was initiated to study ischemia effect on kidney function during NSS. After randomization all the patients underwent NSS: in study group 87 (50.9%) patients had NSS with no ischemia and in control group, in 84 (49.1%) ischemia was used during the procedure. Both groups were equal in mean patients age, male/female distribution, mean tumor size, overall GFR and ECOG status. Split kidney GFR was evaluated with nephroscintigraphy.

Results: Ischemia significantly decreased intraoperative blood loss from 397.7±136.9 ml to 332.7±162.3 ml, ($p < 0.05$). Overall and split GFR on the tumor side are presented in Figure 1. Overall GFR in control group decreased 3 months postoperatively from 91.2±21.0 to 77.2±15.4ml/min ($p < 0.05$) and recovered to 86.8±18.9 ml/min after 12 months of follow-up. In group without ischemia overall GFR did not show significant change with time: 91.3±20.7 to 89.8±16.3 and 93.0±16.1 ml/min respectively. Analysis of split GFR on effected side showed decrease in GFR from 44.3±12.4 baseline to 31.4±10.2 in 3 months ($p < 0.05$) and partial recovery till 35.7±11.4 ml/min in 1 year. In main group GFR values in affected kidney did not change in time significantly 43.9±10.2 to 39.1±10.2 and 41.8±7.2 ml/min respectively at baseline, 3 and 12 months postoperatively.

Conclusions: NSS with ischemia results in significant decrease of overall and split GFR of kidney with tumor ($p < 0.05$). No significant difference was seen in GFR in patients without ischemia. Avoiding ischemia during NSS may prevent development of CKD.

UP.309

Efficacy of Axitinib as Third- or Later Line Treatment for Patients with Metastatic Renal Cell Carcinoma

Mizuno R, Asanuma H, Oya M
Dept. of Urology, Keio University, School of Medicine, Tokyo, Japan

Introduction and Objectives: Development of molecular targeted therapy, including vascular endothelial growth factor receptor (VEGFR)-tyrosine kinase inhibitor (TKI) and mammalian target of rapamycin inhibitor (mTORI), have achieved improvements in the treatment of metastatic renal cell carcinoma (mRCC). In view of the complete lack of information in the third or later line settings, we retrospectively evaluated the efficacy and tolerability of axitinib treatment in mRCC patients pretreated with both vascular endothelial growth factor receptor VEGFR-TKI and mTORI.

Materials and Methods: A total of 13, 10 male and 3 female Japanese patients, with a mean age of 57.8 years (range 18–79), with mRCC, who progressed despite treatment with both at least one VEGFR-TKI and one mTORI, were treated with axitinib in the third or later line settings. Ten patients had clear cell, and remaining 3 patients had non-clear cell histology. They have received a median of 3 prior therapies. All patients had Karnofsky performance status 70–100.

Results: In all patients axitinib was started with 5mg twice daily, and 4 patients experienced dose reduction. Response to axitinib was PR, SD, PD of 2 (15.4%), 9 (69.2%), and 2 (15.4%), respectively. The median PFS was 9.8 months. The median OS was not reached. The most common AEs were hypertension (n=10) and hoarseness (n=8), which were manageable. Severe AEs which resulted in cessation of axitinib were grade 3 proteinuria (n=1) and grade 2 perforated diverticulitis (n=1), which were managed with a conservative approach. In this study, axitinib demonstrated an acceptable safety and tolerability profile even in the later line settings.

Conclusion: Our findings suggest that although there is wide variability in the treatment and management patterns, targeting VEGF pathway with axitinib seems to have potency for the subset of patients heavily pretreated with both VEGFR-TKI and mTORI.

UP.310

Treatment Outcome of Japanese Metastatic Renal Cell Carcinoma Patients in the Era of Molecular-Targeted Drugs: A Retrospective Study from a Single Medical Center

Ushijima M, Naito S, Ichiyanagi O, Takai S, Yagi M, Sakurai T, Kawazoe H, Kato T, Nagaoka A, Tomita Y
Yamagata University, Yamagata, Japan

Introduction and Objectives: We demonstrated that the median overall survival (OS) time in Japanese patients with metastatic renal cell carcinoma (mRCC) treated with cytokine-based therapies was 21.5 months, about twice as long as in prior reports on mRCC from western countries (Naito et al., Eur Urol, 2010). Current treatment for mRCC has changed greatly since 2008, because several molecular-targeted drugs (MTDs) have been brought into clinical use in Japan. The aim of the present study is to evaluate the efficacy of MTDs-based therapies in Japanese mRCC patients in the post-cytokine era.

Materials and Methods: We retrospectively collected clinical data from the medical archives of consecutive 72 mRCC patients treated with MTDs who were followed up in our institution from Nov. 1, 2007 to July 31, 2013. The end point was set overall survival (OS) time calculated from first diagnosis of mRCC to death or last follow-up. MTDs administered in the present study were sorafenib, sunitinib, axitinib, pazopanib, everolimus and temsirolimus, some of which were given sequentially at the disease progression.

Results: The median age was 63 year (range: 41-85 year) and 84.7% patients was males. Fifty-one subjects underwent nephrectomy for primary RCC, and 19 patients received metastasectomy. Pathological examination showed clear cell carcinoma (n=55), clear cell and papillary carcinoma (n=1), collecting duct carcinoma (n=1). Tumor pathology was not determined in 15 cases. Forty-one subjects were alive and 31 dead on July 31 in 2013, and the median OS time was estimated 43.1 months with Kaplan-Meier method. Based upon Memorial Sloan-Kettering Cancer Center (MSKCC) criteria, the study patients were categorized into three groups having favorable (n=10), intermediate (n=42) and poor risk (n=8). MSKCC criteria were unavailable in 12 cases due to data missing. In the favorable risk group, the mortality did not fall below 50% in the follow-up duration, with 2-year survival of 90.0%. The median OS time and 2-year survival were 34.2 months and 60.4% for the intermediate risk group, respectively. Patients with poor risk had the median OS duration of 7.8 months.

Conclusion: Prognostic improvement of MTDs-treated mRCC cases was indicated, especially for patients with favorable and intermediate risk.

UP.311

Endoscopic Management of Upper Tract Urothelial Cancer: Is It Safe?

Arumainayagam N, Rajaretnam N, Gibbons N, Hrouda D, Shamsuddin A, DasGupta R
Charing Cross Hospital, Imperial Healthcare NHS Trust, London, UK

Introduction and Objectives: The gold standard for upper tract urothelial cancer (UTUC) currently remains nephroureterectomy (NU).

However, endourological management has been shown to allow good long-term outcomes in two recently published large studies. Several questions remain about how best to identify predictive factors, how to improve staging, and whether biopsies provide adequate grade assessment to direct treatment. We review our experience of endourological management in patients with elective and absolute indications for a nephron-sparing approach for UTUC over a 40 month period.

Materials and Methods: We retrospectively reviewed our tertiary centre experience of UTUC from October 2009 to February 2013, assessing the initial grading, recurrence rates, progression to NU and overall mortality.

Results: A total of 41 patients (24 male, 17 female), mean age 69 years, underwent endoscopic control of UTUC by flexible ureterorenoscopy or rigid ureteroscopy and laser ablation. Four patients opted to have endoscopic management of their UTUC rather than NU, despite having normal functioning contralateral kidneys and no comorbidity precluding them from NU. The remaining 37 all had endoscopic management due to risk of becoming dialysis dependent if NU was undertaken. Follow-up data was available for 26/41 patients, as well as baseline histology at initial assessment. The results are summarized in Table 1.

Conclusion: Endoscopic control of UTUC is feasible and safe. G3 disease and CIS, however, have a high likelihood of harbouring worse true pathological staging (5/9 and 2/2 proceeding to NU respectively); these cases require particularly close attention during follow-up for safe management.

UP.312

Transvesicoscopic Repair of Vesicovaginal Fistula: Short-Term Follow-Up

Guntaka A, Nerli R, Mudegoudra A, Devaraju S

Dept. of Urology, KLES Kidney Foundation, KLE University's JN Medical College, Belgaum, India

Introduction and Objectives: We report our series of patients with VVF treated by transvesicoscopic approach. We analyzed the outcome of this repair in women of reproductive age group.

Materials and Methods: Patients of reproductive age group with VVF formed the study group. Only single fistulas which were <10 mm in diameter and situated in the supratrigonal region were included. Patients were randomized to undergo either laparoscopic transperitoneal or transvesicoscopic repair.

Results: During the study period Jan 2009 to Dec 2012, 15 women underwent laparoscopic repair of VVF. Eight of these women underwent laparoscopic transperitoneal repair, whereas the remaining seven underwent transvesicoscopic repair.

Conclusions: Transvesicoscopic as well as laparoscopic transperitoneal repair of VVF carries all the advantages of laparoscopy including minimal invasiveness, less morbidity, shorter hospital stay, early recovery, and better cosmetic appearance. The disadvantages of standard transabdominal laparoscopy, such as injury to other intraperitoneal organs, need for peritoneal drain, prolonged ileus, bleeding, are avoided in this technique. Women in the reproductive age group return to early sexual activity and have a decreased incidence of urinary voiding dysfunction at 6 months follow-up.

UP.313

Laser Replaces Scalpel in Surgery: How Shows Prostate-Therapy

Hainz H

Rheinbach, Germany

Introduction/Objectives: Increase of ageing population worldwide requires more affordable minimal invasive therapy, e.g. for BPE and CaP in Germany. In urology 1901 anesthesy enabled Freyeroperation; electricity 1920 TURP - since 1970 standard. Hofstetter lasered 1991 prostate (ILCP). In 2011 in USA 80% BPE operations were Photoselective Laservaporisation (PVP) - mostly as outpatient therapy; 12/2012 in France as standard declared.

Materials/Methods: Einstein's formula $E=mc^2$ i.e. 500gr Uranium extinguished 1945 Hiroshima. People's silhouettes in pavement led 1954 in East/West to theory "**L**ight **A**mplification by **S**elected **E**mitted **R**adiation". In 1961, first laser set was build and in 1983 S.G.Bown lasered a livertumor. Now portable tools work 100000 maintenance-free hours with hundreds Watt in 30 000 wave-lengths. With small glass fibers we practice bio stimulation, coagulation, carbonization and atomic photo ablation or frankly said cutting, sawing, planeing and drilling in tissue, teeth and bones. Now beam reflection informs when you come into or out a tumor and by Raman Effect a spectroscopic tissue diagnostic is tested.

Results: Own laser experience (1988-2006/ legal age limit) began with Medilas100 and resterilized fibers transurethral 4000 urotheltumors and later BPE. In 1294 cases (1.10.94-30.11.2000). "Our" invasive coagulation (pushing "burning fiber" NdYAG cw 40W into adenoma and drawing it back slowly) made 14 urinary retentions (necrotic tissue), 3 SIRS and 2 periprostatic abscess and laser cutting (fiber with 50Wcw is "scalpel blade" in urethroscope) 39 bleeding with electrocoagulation and 5 blood transfusions. Thereafter always first invasive coagulation followed by cutting reduced complication rate once more and we were as fast as with TURP. Since 1996 a new 50W980nm-Diodelaser enabled 90% incisions and reduced cost in our unit to 45% of pre-laser-era (presented at 54 congresses).

Conclusions: Laser work on any plug in megaclinics or Red Cross/-Halvemoon-tent and now in all medical subspecialties. Young colleagues can lead our <key hole surgery> with miniature instruments and laser combined to all kinds of electromagnetic devices into future. In OncoRay-Center Universitätsklinik Dresden the Protonlaser DRACO is tested. It destroys exactly tumors without touching the skin. Why urologists don't use laser in daily treatment e.g. PVP in CaP and publish their results online.

UP.311, Table 1.

GRADE	NUMBER	Recurrence free (mean follow-up in months)	Tumour recurrence (mean time to recurrence in months) (range)	Number of patient proceeding eventually to NU	NU grade and stage	No follow-up documented	Death
G1	4	2 (30)	1 (3)	1	No cancer	0	0
G2	11	1 (48)	6 (12) (3 - 24mths)	4	G2pTa (3) G3pT2 (1)	0	0
G3	9	1 (24)	0	5	G3pTa (2) G3pT3 (2) G2pT1 (1)	2	1
CIS alone	2	0	0	2	G3pT2 (1) G3pT4 (1)	0	0

UP.314

Optimising Abdominal Wound Drainage in the Development of an Enhanced Recovery Programme in Renal Laparoscopic Surgery

Mahrous A, Rajpal S, Cartledge J
St James's University Hospital, Leeds, UK

Introduction and Objectives: We routinely place a wound drain following laparoscopic renal surgery. The presences of a wound drain increases analgesic usage and may prolong length of stay. We wish to clarify drain usage as part of the ongoing development of an enhanced recovery programme in renal surgery. The aim of this study is to evaluate wound drainage following laparoscopic renal surgery to identify whether wound drainage is routinely necessary or if a drain could be removed in the early postoperative period.

Materials and Methods: We reviewed drain output in a single surgeon series for 6 months. Data regarding indication, tumour size and postoperative hourly drain output and timing of drain removal was collected.

Results: Thirty four total nephrectomies (4 benign, 30 malignant) and 15 partial nephrectomies were performed; median tumour size 4.5 cm (2-10cm). Two patients following total nephrectomy were excluded from the analysis due to incomplete charts. Mean drain output in all patients was 135.2 mL [range 10-780 mL]. Mean drain output for total nephrectomies was 110 mL, 189 mL for partials. 39 patients (82.9%) had drains out within 24 hours (30 total and 9 partial). Eighteen patients (56%) in the radical nephrectomy group had less than 50mL drainage beyond 4 hours. Six patients (40%) had insignificant drainage beyond 4 hours following partial nephrectomy. If the drain was removed routinely at 4 hours postoperatively following all total nephrectomy the mean drainage that would have been missed was 51.4 mL (7-150mL).

Conclusion: Drain output following laparoscopic radical nephrectomy was generally low and the need for leaving a drain can be questioned. If a drain is left it is safe to remove after four hours.

UP.315

Intraoperative Navigation Based on 3D Reconstruction of Operational Zone for Videoendoscopic Parcial Nephrectomy

Dubrovin V[1], Egoshin A[1], Furman Y[2], Rozhentsov A[2], Eruslanov R[2], Chernishov D[2], Klugev K[2], Baev A[2], Kudryavchev A[2]
[1]Republic Clinical Hospital, Yoshkar-Ola, Mari El Republic, Russia; [2]Volga State University of Technology, Yoshkar-Ola, Mari El Republic, Russia

Introduction and Objectives: Laparoscopic partial nephrectomy holds a leading position in the management of small renal tumors. Delimitation of resection for nephron-sparing surgery in the treatment of renal tumors is an actual problem. We present the method of intraoperative navigation based on virtual simulation during videoendoscopic partial nephrectomy for kidney tumors.

Materials and Methods: A special computer program has been developed, that created a three-dimensional image of operative space on the basis of preoperational tomographic data of a concrete patient. We used hardware-software complex (HSC) for virtual modeling of the surgery zone. The complex consists of a PC, original software and mechanical 3D digitizer. The HSC allows the forming of a virtual 3D model of a patient according to the results of tomography examination. The original method of matching the system of coordinates of a virtual model with the patient was offered. The procedure was conducted under the conditions warm ischemia after mobilization of the kidney, partial nephrectomy was performed by observing the image of 3D organ model agreed with the video image of the kidney tumor. The method was originally performed for the 5 patients with small renal tumors, who needed surgical treatment, their average age was 47.5 (in the range from 38 to 54) years, men – 2 (40%), women – 3 (60%). Size of the tumors were 3.0 (2.0 – 4.0) cm, they were located in the lower poles of the kidneys.

Results: Average time of an operation performed with the use of the computerized choice of the surgical approach was 110.5 (80-155) minutes. Warm ischemia time was 24.5 (19 – 28 min). There were no complications during the operation and in the post-operative period. There were no cases of positive surgical margins.

Conclusions: Usage of the introduced computer program allows the surgeon to determine compliance with the contours of the 3D models of the body shown in the video monitor. The technique provides additional possibilities for the surgeon in selecting borders in partial nephrectomy. This method is particularly perspective for teaching beginner surgeons, it can help them acquire skills in minimally invasive surgery.

UP.314, Table 1. Analysis of drain charts to identify timing when output becomes insignificant (< 50ml)

Time after procedure (hours)	No of patients (Total, Partial)
4	24
8	3
12	5
16	3
20	1
24	5
24-69	6 (4 partial - 2 radical)

UP.316

Antegrade Double-J Ureteral Stent Insertion: Experiences over the Past 8 Years

Weltings S, van der Meer R, van Erkel A, Roshani H, Elzevier H, van Dijk L, van Overhagen H
Hagaziekenhuis, Den Haag, The Netherlands

Introduction and Objectives: A double-J stent (JJ) can be used as a drainage method in case the upper urinary tract is obstructed. Antegrade ureteral stenting is usually performed if the retrograde approach has not been successful. We evaluate the indications, the success rate and the complications of antegrade JJ insertion.

Materials and Methods: A hundred individual patients were included in this study between 2005 and 2013 in two teaching hospitals in the Netherlands. A total of 130 antegrade JJ insertions were performed by interventional radiologists. Indications for antegrade stenting are mentioned in Table 1. All procedures were carried out under local anaesthetic. Antibiotic prophylaxis was given on indication.

Results: Success rate in the 130 procedures of antegrade JJ stent insertion was 96%. Ureteric stricture was the reason of failure in the remaining 5 procedures, of which 3 were with transplanted kidneys. In 21 patients (16%), retrograde placement was carried out and failed. In all of these cases, antegrade insertion was successful. Predilatation of the stricture using a PTA balloon was necessary in 13 procedures (10%). Stent insertion was carried out simultaneously at the time of percutaneous nephrostomy in 16% of total procedures. Eight complicated procedures (6%) were reported. Six infections, 1 ureteric perforation and 1 JJ dislocation occurred.

Conclusion: Antegrade JJ stenting is feasible and safe. It should be considered as a treatment of choice, especially when the retrograde approach fails or is contra indicated. One should be aware of the complications as reported.

UP.316, Table 1. Indications for antegrade JJ stent insertion

Indication JJ	Number of procedures (n)	Percentage of total (%)
Tumor obstruction	63	48.5
Scar tissue	32	24.6
Urolithiasis	12	9.0
Obstruction / leakage postoperative	10	7.7
Retroperitoneal fibrosis	6	4.6
Obstruction by unknown cause Infection Endometriosis	3 2 2	2.3 1.5 1.5
Total	**130**	**100**

UP.317

Erectile Dysfunction following Focal Therapy Using HIFU: Analysis of Risk Factors for Developing ED from a Combined Analysis of 3 Prospective Trials

Yap T, Ahmed H, Hindley R, Dickinson L**, Guillaumier S**, Mccartan N, Charman S, Emberton M, Minhas S
University College Hospital, London, UK

Introduction and Objectives: Focal ablation of prostate cancer is a treatment option in localized prostate cancer that can potentially reduce the risk of erectile dysfunction. We aimed to determine independent associations for erectile dysfunction in patients receiving focal therapy for prostate cancer using the combined outcomes from 3 prospective IRB-approved trials.
Materials and Methods: A total of 116 men with prostate cancer (PSA≤15ng/mL, Gleason ≤4+3, stage ≤T3aN0M0) treated with focal HIFU were included. Patients received focal HIFU, delivered to cancer lesions, with a margin of normal tissue, identified on multi-parametric MRI and template prostate-mapping biopsies. A linear regression to assess whether any baseline factors (Age, Charlson comorbidity score, IIEF, IPSS and EPIC scores) were associated with IIEF scores at 12 months was carried out, adjusting for baseline IIEF.
Results: Change in erectile function post-operatively is only significantly associated with preoperative total IIEF and IIEF-erectile function scores. For each unit increase of IIEF 15 at baseline, the mean increase at 12 months in total IIEF was 0.60 (95%CI 0.42-0.78, p<0.01) and mean improvement in IIEF –erectile was 0.73 (95% CI 0.43–0.80, p<0.01). Age as well as pre-operative Charlson co-morbidity scores (with and without adjustment for prostate cancer), IPSS, IPSS-quality of life and EPIC continence scores were not found to be independently associated with total IIEF & IIEF – erectile scores at 12 months.
Conclusion: Other than baseline IIEF scores, there seems to be no association with the variables such as Charlson, IPSS, EPIC and IPSS QoL scores with IIEF scores at 12 months. Interestingly, the lack of association extends to age (p = 0.866). This is a heterogeneous grouping of variables, which does not take into account temporally influenced post-operative changes. However, focal therapy may represent a suitable alternative for men of any age or comorbidity wishing to maintain erectile function.

UP.318

How to Improve Vision of Cystoscopy in Difficult Cases?

Aboelmagd M, Barakat T, Al Shareef J
Dept. of Urology, Al-Hada Armed Forces Hospital, Taif, Saudi Arabia

Introduction and Objectives: There is a problem in vision of cystoscopy in certain cases including malignant contracted bladder, haemorrhagic cystitis, limited bladder capacity, neurogenic bladder and gross haematuria, which may lead to failure of screening the bladder, fixation of stents, taking biopsy and/or haemostasis. Up to our knowledge there is no reports mentioned the use of continuous irrigation cystoscopy in improving vision in such cases. Objective: To evaluate the effectiveness of using continuous irrigation sheath for improving the vision of cystoscopy when the vision is poor in such above mentioned cases.
Materials and Methods: Between May 2013 and February 2014, continuous irrigation cystoscopy was used in 10 cases where there is a poor vision by ordinary cystoscopy, 4 cases of neurogenic bladder, 3 with bladder tumor filling most of the bladder and 3 with gross haematuria. The outcome was to compare quality of vision between the continuous irrigation cystoscopy and the ordinary cystoscopy.
Results: In all cases, the use of the continuous irrigation cystoscopy showed significantly improvement in quality of vision in comparison to the ordinary cystoscopy and success in taking biopsy, stent fixation or screening of the bladder which failed by ordinary cystoscopy in view of poor vision. Description of Cystoscopy with Continuous irrigation: Resect scope 24 FG continuous irrigation with long bridge.
Conclusions: The use of the continuous irrigation cystoscopy considered a good option to overcome the poor of vision of the ordinary cystoscopy in certain conditions.

UP.319

Comparison of Initial Results with Robotic-Assisted Laparoscopic Radical Prostatectomy and Minimum-Incision Endoscopic Radical Prostatectomy

Takeda H, Nakano Y, Narita H
Dept. of Urology, Tosei General Hospital, Aichi, Japan

Introduction and Objectives: To investigate the superiority in 2 radical prostatectomies, we compared the initial results of robotic-assisted radical prostatectomy (RARP) to those of minimum-incision endoscopic radical prostatectomy (MIES-RP) performed during the same period at Tosei General Hospital.
Materials and Methods: The study was conducted on a total of 105 patients having undergone radical prostatectomy from April 2010 to March 2014 (52 patients with RARP and 53 with RRP). We investigated surgical stress, cancer control, functional outcomes and complications in both groups.
Results: Surgical stress; operation time was significantly shorter with MIES-RP; however, blood loss and serum total protein loss were significantly less with RARP. The rates of analgesic use and SIRS were similar. Although the date on which taking solid meals resumed did not differ, the duration of indwelling urethral catheter and admission period were significantly shorter with RARP. Cancer control; the rates of positive surgical margin were 21.2% and 18.9% with RARP and MIES-RP, respectively (p=0.54), and biochemical recurrence was seen in 11.0% and 12.1% with RARP and MIES-RP, respectively (p=0.73), which were not significantly different. Continence; urinary continence outcomes with RARP and MIES-RP were not significantly different, the rate of 6 months pad free & pad one were 85.7% and 82.1%: pad free, 98.7% and 93.2%: pad one with RARP and MIES-RP, respectively. Complications: 1 case with a rectal injury was seen in RARP group, but complication rates were 13.7% and 16.2% with RARP and RRP, respectively.
Conclusion: In spite of our initial experience of RARP, surgical stress and complications with RARP were considered to be equivalent or superior to that with MIES-RP. Cancer control and urinary continence showed no significant difference between RARP and MIES-RP.

UP.320

Comparing Robotic, Laparoscopic and Open Cystectomy: A Meta-Analysis

Fonseka T[1], Ahmed K[2], Froghi S[2], Dasgupta P[2], Khan M[2]

[1]King's College London School of Medicine, London, UK; [2]MRC Centre for Transplantation, London, UK

Introduction and Objectives: Open radical cystectomy (ORC) remains the gold-standard treatment for muscle-invasive bladder cancer. As minimally invasive technology evolves, good quality evidence is needed to assess whether these new techniques produce better outcomes. We perform a meta-analysis to compare outcomes between robotic assisted radical cystectomy (RARC), Laparoscopic radical cystectomy (LRC) and ORC. Three questions are addressed:

1) Does RARC produce better outcomes than LRC?
2) Does RARC produce better outcomes than ORC?
3) Does LRC produce better outcomes than ORC?

Materials and Methods: A Systematic review of the literature was conducted to collate all studies comparing RARC, LRC and ORC. Data on surgical (operative time (OPT), estimated blood loss (EBL) and length of stay (LOS)) and oncological (lymph node yield (LNY) and positive surgical margins (PSM)) outcomes were extracted. Subsequently a meta-analysis was performed using a random effects model.

Results: Eighteen studies were selected. A total of 1,735 cases were analyzed, with 997 (57.5%) undergoing ORC, 117 (6.74%) LRC and 621 (35.8%) RARC. Results are summarized in Table 1. Forest plots showed RARC had significantly lower length of stay, estimated blood loss and complication rate compared to ORC. RARC had no better surgical outcomes than LRC, only a longer operative time. LRC had better surgical outcomes than ORC. There were no significant differences regarding oncological outcomes comparing RARC to ORC and LRC to ORC.

Conclusion: RARC is comparable to LRC, yet produces better surgical results than ORC. LRC has better surgical outcomes than ORC, though oncological outcomes are equivalent. Oncological outcomes are also equivalent between RARC and ORC. With the unique technological features of the robotic surgical system and increasing trend of intra-corporeal reconstruction it is likely that RARC will become the surgical option of choice as spread of technology increases.

UP.320, Table 1. Results of the Meta-Analysis

Comparison	Variable	Outcome	Inference
RARC vs. LRC	OPT	P = 0.02; mean weighted difference (MWD) = 47.61, 95% confidence interval (CI) = 8.83 to 86.40	Significantly longer
	LOS	P = 0.63; MWD = -1.95, 95% CI = -9.88 to 5.97	No significant difference
	EBL	P = 0.17; MWD = -167.52, 95% CI = -408.48 to 73.44	No significant difference
RARC vs. ORC	OPT	P = < 0.00001; MWD = 64.89, 95% CI = 53.67 to 76.12	Significantly longer
	EBL	P = < 0.00001; MWD = -601.25, 95% CI = -819.33 to -383.18	Significantly reduced
	LOS	P = 0.00001; MWD = -1.60, 95% CI = -2.75 to -0.46	Significantly reduced
	Complications	P = <0.0001; MWD = 0.53, 95% CI = 0.40 to 0.71	Significantly reduced
	LNY	P = 0.0001; MWD = -1.07, 95% CI = -3.36 to 1.22	No significant difference
	PSM	P = 0.60; MWD = 0.80, 95% CI = 0.47 to 1.37	No significant difference
LRC vs. ORC	OPT	P = 0.12; MWD = 12.99, 95% CI = -3.21 to 29.18	No significant difference
	EBL	P = 0.02; MWD = -508.80, 95% CI = -952.91 to -64.70	Significantly reduced
	LOS	P = <0.00001; MWD = -3.74, 95% CI = -4.47 to -3.02	Significantly reduced
	LNY	P = 0.17; MWD = -0.20, 95% CI = -2.15 to 1.74	No significant difference

UP.321

Developing Robotic Surgery in Developing Countries

Kamalakannan R

Apollo Hospitals, Chennai, India

Introduction and Objectives: Urology has developed leaps and bounds in the last decade. Latest ormantarium is introduction of da Vinci robotic system. The da Vinci robotic surgical system offer minimally invasive option for delicate and complex urological surgery. It is validate by numerous surgical publication. At present it is expensive and not all patients are affordable for this technology. I would like to share our experience in developing this technology in our country.

Materials and Methods: We bought da Vinci robot about 2 years ago and till now we have performed 700 surgeries. We are one of the leading private health care hospitals in the country. The cost seems to be a major obstacle in developing the technology. Second comes the lack of awareness, followed by fear of new technology. Discussion: Developing a robotic program in a developing country involve a huge cost. We have introduced special packages for the certain commonly performed surgery to improve the numbers. It is not only the initial investment of the machine but also the incurring disposable equipment cost. It needs a dedicated team and training of surgeon and the nurses. In addition some insurance are not will to pay for robot cost. To overcome this we have introduced special packages for the surgery cost and introduced special awareness programs in the social and web media and television to spread the awareness.

Results: Having done this many surgeries we believe that the following changes may help to take the technology further. Company can help with reduction of the cost of disposable for specific period of time in developing countries. Company to share the cost of training of surgeon from developing country to make the program viable and sustainable. To provide Recording device free of cost. To provide Simulator for training the trainee surgeons at subsided price. Surgeons from established centre to visit the new centre for proctoring at regular interval. Insurance company to pay the cost at least partly to reduce the burden to the patient. Group of hospitals to share the robot. Multi-speciality utilisation of the robot in the hospitals. Special packages for cancer patients and children.

Conclusion: In future a mobile robotic unit can be a dream and surgeons from remote areas can have access to the robot. Develop Support group for patients. Online surgeon group to discuss the cases and mentoring.

UP.322

Percutaneous Nephrostomy vs. Indwelling Ureteral Stenting: Which Technique Is More Efficient in the Resolution of Obstructive Acute Kidney Failure and Urosepsis?

Dias J, Costa P**, Oliveira V**, Xambre L, Rodrigues R, Amorim R, Espiridião P, Costa L, Pereira M, Amaral J, Ferraz L
Centro Hospitalar V.N. Gaia/Espinho, Vila Nova de Gaia, Portugal

Introduction and Objectives: Our objective was to compare the efficacy of Percutaneous nephrostomy (PN) vs. indwelling ureteral stenting (JJ) in the resolution of obstructive acute kidney failure (AKF) and urosepsis (US) in an urgent setting.
Materials and Methods: We performed a retrospective analysis of the patients referred to our emergency room and submitted to urinary decompression with PN or JJ, between 01/2009–12/2011. Possible differences in the baseline variables between the two groups (PN vs. JJ) were evaluated for each indication (US and AKF). Subsequently, odds ratios (ORs) explored associations between the type of urinary drainage and the efficacy in the resolution of US (suboptimal response: fever >12h or leucocytosis >2 days) and AKF (suboptimal response: Creatinine reduction ratio [CRR] (= [SCr maxbefore intervention or first 48h after – SCr min48-96h after] / SCr max before intervention or first 48h after x100) < 35%).
Results: In the patients submitted to urgent decompression for US (n=78) data from univariate analysis show in Table 1. Data from multivariate analysis showed that urinary decompression with JJ (vs. PN) had a 3-fold higher probability of achieving an optimal response in obstructive US management (OR 3.37, CI 95% 1.03-11.0, p=0.04). Regarding the patients with AKF (n=92) between groups comparison shows in Table 2. Data from the multivariate analysis showed that urinary decompression with JJ (vs. PN) had a 4-fold higher probability of achieving a CRR>35% in obstructive AKF management (OR 4.03, CI 95% 1.05-15.4, p=0.04).
Conclusion: Emergent urinary decompression with JJ was more effective in the resolution of obstructive AKF and US.

UP.322, Table 1.

	JJ (n=43)	PN (n=35)	P
Age	56±19	69±16	0.002
Chronic renal failure	2.4%	22.2%	0.010
Lithiasic aetiology	77.3%	30.6%	<0.001
Suboptimal response	36.4%	58.3%	0.049

UP.322, Table 2.

	JJ (n=54)	PN (n=38)	P
Age	65±16	70±12	0.06
Lithiasic aetiology	72.2%	21.1%	<0.001
CRR >35%	57.4%	39.5%	0.09

UP.323

Comparative Analysis of BCG Maintenance in High Risk Non-Muscle Invasive Bladder Cancer: Monthly versus SWOG 8507 Trial (6+3) Protocol

Kim T, Kang S, Oh J, Rhew H
Dept. of Urology, Kosin University Hospital, Busan, South Korea

Introduction and Objectives: We do not know the best schedule of BCG maintenance in high risk non-muscle invasive bladder cancer (NMIBC). So, we compared the most frequently applied two schedules - the monthly and SWOG 8507 trial (6+3) BCG maintenance schedule in terms of recurrence and progression.
Materials and Methods: We retrospectively reviewed medical records of the patients who received BCG maintenance therapy (with full dose) after TURBT and BCG induction (6 week) therapy in pathologically proven high risk non-muscle invasive bladder cancers (NMIBC) between March 2008 and March 2014. We compared the two groups by maintenance schedule and recurrence and progression free survival of them.
Results: A total of 166 patients received BCG maintenance therapy due to high risk NMIBC. A hundred and five patients were received monthly BCG maintenance (Group 1) and 61 patients received WOG 8507 trial (6+3) BCG maintenance (Group 2). The median follow-up duration of all patients was 23 months. Among these, 80 and 43 patients received BCG maintenance at least 12 months, in Group 1 and 2, respectively. The patients who discontinued maintenance therapy due to BCG related toxicity are 5 (6.3%) and 3 (7.0%), respectively. The patients with intravesical recurrence of the bladder cancer were 15 (18.8%), 9 (21.0%), respectively, and the patients with progression of the bladder cancer were 3 (3.8), 2 (4.7%), respectively. Among 24 patients of intravesical recurrence, the patients who recurred within 12 months are 6 (7.5%), 6 (14.0%), respectively (p=0.050). The 2-year recurrence free survival was 85.0, 79.1% and the 2-year progression free survival was 96.3, 95.3%, respectively. There were no statistical differences between two groups in recurrence free survival (p=0.666, Log-rank test) and progression free survival (p=0.774, Log-rank test).
Conclusion: In high risk non muscle invasive bladder cancers, there were no differences of recurrence and progression free survival between monthly and SWOG 8507 trial (6+3) BCG maintenance groups.

UP.325

Transurethral Anatomical Enucleation and Resection of Prostate (TUAERP)

Liu C, Zheng S, Li H, Xu Y, Xu A**, Wang Y**, Xu P
Southern Medical University, Guangzhou, China

Introduction and Objectives: Transurethral enucleation and resection of prostate (TUERP) has been widely used for the patients with urinary symptoms due to benign prostatic hyperplasia (BPH) since its come out. We are about to further evaluated the feasibility of transurethral anatomical enucleation and resection of prostate (Via Plasmakinetic or Laser).
Materials and Methods: We retrospectively analyzed the records of 460 patients who underwent transurethral anatomical enucleation and resection of prostate between June 2011 and August 2013 at our institution. We assessed the International Prostate Symptom Score, quality of life score, peak flow rate and post-void residual urine volume preoperatively, 1, 3, 6 and 12 months postoperatively, and yearly thereafter. Enucleation and resection time, enucleated tissue weight, catheterization time, hospital stay and long-term complications were recorded.
Results: No patient had intraoperative significant blood loss or signs of the transurethral resection syndrome. Mean enucleation time was 22.5 minutes (range from 10 to 52), mean resection time was 23.6 minutes (range 5 to 45) and mean resected tissue weight was 43.8±18.7 gm (range from 23 to 188). The catheter was removed on average time of 1.1 days whereas the mean hospital stay was 4.3 days. All patients were followed-up for more than 6 months without recurrence. Transurethral anatomical enucleation and resection of prostate induced significant, pronounced, immediate and lasting improvement in the International Prostate Symptom Score, quality of life, maximum urinary flow and post-void residual urine volume. Postoperative complications included incontinence in 3 cases, urethral stricture in 17

cases and bladder neck contracture in 8 cases.
Conclusions: Transurethral anatomical enucleation and resection of prostate (TUAERP) appears to be further improvement to TUERP and TURP for lower urinary tract symptoms patients due to benign prostatic hyperplasia.

UP.326
Prospective Evaluation of ICIQ-UI Questionnaire in Patients Undergoing Robot-Assisted Laparoscopic Prostatectomy
Dimopoulos P, Kusuma M, Capper S, Lau M, Clarke N, Ramani V
The Christie NHS, Manchester, UK

Introduction and Objectives: There is little prospective data reporting patient related outcome measures in patients undergoing RALP (Robot-Assisted Laparoscopic Prostatectomy). We have prospectively collected such data since the start of our robotic program in 2008. We use the ICIQ-UI (International Consultation on Incontinence Modular Questionnaire) short form to provide an unbiased assessment of the patient's urinary incontinence and its impact on QoL (Quality of Life) and CSQ (Client Satisfaction Questionnaire) score for patient satisfaction.
Materials and Methods: ICIQ-UI and CSQ questionnaires were sent anonymously to all patients undergoing RALP between April 2008 and December 2013. Prospective data collection carried out preoperatively and at 3, 6, 12 months postoperatively. Patients were stratified into 3 groups with ICIQ-U I≤5, ICIQ-UI 6-10 and ICIQ-UI>11. We also report median CSQ score.
Results: A total of 196 patients were analyzed (214 were excluded due <12 months follow-up). At three, six and twelve months 46%, 70% and 78% had an ICIQ-UI≤5; 41%, 28% and 18% had an ICIQ-UI 6-11; 13%, 2% and 4% had an ICIQ-UI>11. At 6 and 12 months 40% and 47% patients reported that they never leak. 90% of the respondents rated the interference in their QoL as less than three out of ten both at six and twelve months. Median CSQ score drops to 31 at 3 months and rises back to 32 at 6 and 12 months.
Conclusions: There appears to be significant improvement in continence up to 12 months. At that point 2% and 4% of patients report an ICIQ-UI score >11 at 6 and 12 months. Patients should be counseled appropriately regarding this. The most common cause for slight leakage in this group was physical activity and exercising. Patients are satisfied according to CSQ score. Widespread use of these questionnaires would allow objective evaluation of continence and satisfaction data from various different Centers and for comparison with other treatment modalities.

UP.328
Robotic Adrenal Surgery for Some Subpopulations Unfit for Conventional Laparoscopic
Shen Z, Zhang X
Ruijin Hospital, Shanghai Jiaotong University, Shanghai, China

Introduction and Objectives: To present our initial experience performing robotic adrenal surgery for some subpopulations of patients unfit for conventional laparoscopic.
Materials and Methods: A total of 25 adrenal tumor patients unfit for conventional laparoscopic were operated on using robotic technology in our department between November 2011 and October 2013. The demographics, surgical, pathological findings and follow-up results were evaluated.
Results: Mean age was 52.4 (34-67) years, and BMI 26.4 (16.5-38.8). Of the 25 cases, 19 underwent robotic-assisted laparoscopic adrenalectomy (RALA). Six patients underwent robotic-assisted laparoscopic partial adrenalectomy (RALPA). No patient was converted to conventional surgery in both RALA and RALPA. In RALA, 2 functional cortical adenomas, 4 non-functional adenomas, 3 myelolipoma, 1 metastatic adrenal tumor, 7 pheochromocytoma and 2 adrenal cysts were excised. Mean tumor size was 6.33 (2.5-12) cm. Mean surgical time was 87.21 (36-128) min, bleeding 125 (50-200) ml, hospital stay 5.8 (4-12) days. Only one patient had postoperative complication (Clavien II). In RALPA, 6 tumors, of which 3 was pheochromocytoma and 3 were adrenal-cortical adenoma, were removed. Mean tumor size was 4.25 (2.5-5.5) cm. Mean surgical time was 67.25 (39-85) min, bleeding 150 (50-400) ml, and hospital stay 5.25 (4-8) days. No complication was found.
Conclusion: Robotics could overcome some limitations of conventional laparoscopy, which allow some subpopulation of patients unfit for conventional laparoscopic to be treated, such as patients affected by larger tumours, patients who need adrenal-sparing surgery, and obese patients.

UP.329
Robotic Assisted Laparoscopic Pyeloplasty in Infants and Toddlers: MPUH Experience
Murali V, Sheladia C, Mishra S, Ganpule A, Sabnis R, Desai M
Muljibhai Patel Urologic Hospital, Nadiad, India

Introduction and Objectives: Robotic pyeloplasty (RP) is widely used for surgical corrections of congenital pelviureteric junction obstruction. We intend to analyze the feasibility, safety and efficacy of robotic pyeloplasty in infants and toddlers.
Materials and Methods: Twelve children under 5 yrs of age who underwent robotic assisted laparoscopic pyeloplasty, were analyzed retrospectively with respect to demographics, operative, postoperative, and follow-up data. For all cases a lateral transperitoneal approach was used and all anastomosis were stented ante grade. Standard three ports approached with smaller ports (one 8 mm camera port and two 5 mm working ports) used. All patients underwent Anderson-Hynes pyeloplasty and all anastomoses were stented antegradely by double J stent. 6-0 absorbable monofilament suture material used for anastomosis.12 Fr Nelaton was kept as drain in peripelvic space. Success was defined as the resolution of preoperative symptoms and hydronephrosis postoperatively. In case, either is not fulfilled a renogram was obtained postoperatively.
Results: The mean patient age was 3.1 years (1– 5 years). The mean operative and console times were 142 (106–180) and 92 (76–118) minutes, respectively. Mean analgesic requirement was 68 ± 12 mg of Tramadol. The drain was removed after a mean of 36 hrs (24–48). The mean hospital stay was 2.8 days (1.6–3.9). Two patients had fever (Clavian grade-1) which was treated conservatively. Mean follow-up was 16 months (12–24 months). Symptoms resolution was seen in all patients. Renal hydronephrosis improved either completely or partially. In cases of incomplete resolution of hydronephrosis, a 99m Tc-MAG-3 diuretic renogram showed preservation of renal function without obstruction.
Conclusions: Robotic assisted laparoscopic pyeloplasty is safe and feasible in infant and toddler.

UP.330
Intraoperative Antegrade Stenting in Laparoscopic Pyeloplasty
Curry D, Yassin M, Thwaini A, Bailie J, Hagan C, Rajan N
Belfast City Hospital, Belfast, Northern Ireland

Introduction and Objectives: To discuss different techniques involved in antegrade JJ stenting during laparoscopic pyeloplasty, highlighting the advantages and challenges with each method.
Materials and Methods: Seventy five patients who underwent laparoscopic pyeloplasty, performed by three surgeons between April 2004 and March 2013 were reviewed. Data was collated from the Hospital Electronic Records and analysed by audit staff and two urology trainees. The majority underwent intra-operative antegrade stenting during the procedure. Three different techniques were performed by the three surgeons and will be described.
Results: Nine patients had retrograde stent insertion prior to their pyeloplasty for pain and/or infection, and two had incomplete information; hence 11 were excluded from the study. Antegrade JJ stent insertion with endoscopic confirmation (EC) via post-operative flexible cystoscopy was performed in 28 patients, and without confirmation in 30 (WoC). In a third

group, antegrade stenting was also confirmed by artificial filling (AF) of the urinary bladder at the time of stent deployment over a guidewire. Intravesical position of the stent was then confirmed by observing reflux of saline through and around the JJ stent intra-operatively. This technique was performed in 6 patients. Four patients had to have their stents repositioned. In two EC patients, endoscopy confirmed that the distal stent end was not positioned intravesically. In both instances, repositioning was performed with the aid of an intra-operative semi-rigid ureteroscope. One AF patient had a suspected failure of lower stent positioning in the bladder due to failure of saline reflux. This was then confirmed endoscopically after finishing the pyeloplasty and the stent was repositioned as above. One WoC patient was readmitted via A&E with pain. X-ray KUB confirmed intra-ureteric stent position. The patient was then taken back to theatre for stent repositioning.
Conclusion: Correct position of antegrade inserted JJ ureteric stent should be confirmed intra-operatively, in order to avoid unnecessary post-operative complications from stent malposition. Artificial bladder filling method seems to be a safe and reliable procedure, reducing requirements for additional instrumentation. Further study is, however, required to corroborate our encouraging findings.

UP.331
Pneumovesicoscopic Bladder Diverticulectomy: Improved Surgical Technique
Nechifor V[1,2], Lurquin A[1], Wilmart J[1]
[1]Dept. of Urology, Centre Hospitalier de Luxembourg, Luxembourg; [2]University of Medicine and Pharmacy Grigore T. Popa, Iasi, Romania

Introduction and Objectives: Pneumovesicoscopic bladder diverticulectomy is a safe, acknowledged procedure recommended for large bladder diverticula that affect patients' quality of life. It has been described in pediatric as well as adult patients, representing an appealing alternative to open, more invasive surgery. We made a review of the literature concerning this surgical technique and we also described our personal experience which highlights a more particular approach of this intervention.
Materials and Methods: Firstly, our study consists of a literature review using PubMed of publications regarding pneumovesicoscopic bladder diverticulectomy going back to the year 2000, irrespective of the technique used (multiple-port or single-port). Secondly, we present our recent experience consisting in 2 patients, aged 63 and 68 years old, with LUTS and repeated lower urinary tract infections in whom we removed 5 giant diverticula (3 for one patient and 2 for the other). We began the intervention by performing a transurethral resection of the prostate. Then by a pneumovesicoscopic approach bladder diverticulectomy was completed, using 3 trocars with advanced fixation sleeve that prevented intra and postoperatory complications (gas leaks in the perivesical space or subcutaneous tissues).
Results: The technique showed its advantages in the bibliographic review and our preliminary results were also extremely encouraging. All the diverticula were removed using the pneumovesicoscopic approach, with few comorbidities (insignificant blood loss, patients regaining autonomy first day postoperatively) and with a short hospital stay (4 days). The diverticulectomy was performed intravesically, along the diverticula borders, pulling the diverticular wall inside the bladder. This made the dissection of the perivesical tissue unnecessary. The defects that remained in the bladder wall were closed using a single layer suture.
Conclusion: Pneumovesicoscopic bladder diverticulectomy with use of advanced fixation sleeve trocars and the technique of intravesical dissection after incision of the diverticulum's neck mucosa presents advantages that, in our opinion, promote it as the gold standard surgical approach of this pathology.

UP.333
A New Technique of Percutaneous Endoscopic Recanalization of the Ureteropelvic Junction
Lezrek M, Tazi H, Fethi A, Slimani A
Dept. of Urology, Military Hospital Moulay Ismail, Meknes, Morocco

Introduction and Objectives: We study the feasibility of a new percutaneous endoscopic technique for the recanalization of complete obstruction of the Ureteropelvic junction (UPJ).
Materials and Methods: Two patients (36 years-old male and 62 years-old female) with a history of open pyelolithotomy 3 months ago in another institution, presented with flank pain. Ultrasound and CT-scan showed a large hydronephrosis and UPJO. Retrograde ureteropyelography showed a complete obstruction of the UPJ. Contrast media cannot pass in the pelvis. Under general anesthesia, the patients are placed in the split-leg modified lateral position. An attempt to force the obstruction with a stiff guidewire is not successful. A percutaneous blind puncture is performed with a 21-Gauge needle, and contrast media is injected. A calyceal puncture is performed with an 18-Gauge needle. After dilation, a 24F Amplatz sheath is placed. The inspection of the pelvic wall doesn't find the UPJ or its scar. A ureteral catheter is placed in the ureter and contrast media is injected. Under fluoroscopy, the Amplatz sheath is placed in front of the tip of the ureter and the ureteral catheter. The 18-Gauge needle is introduced in the Amplatz sheath, and the urteral tip is punctured through the renal pelvis wall. A hydrophilic guidewire is advanced down the ureter. The nephroscope is introduced and the tract is dilated to 12 Fr and a safety guidewire is inserted. The pelvic wall, the tract and then the ureteral wall is incised with an electrode with the guidance of the guidewires. A 3.5 needle-holder is inserted in the nephroscope and using a 13 mm needle suture, a suture is placed between the pelvic and the ureteral wall. Then, 1 or 2 JJ stents are placed.
Results: This percutaneous endoscopic recanalization technique was used in 2 patients. The mean operative time was 154 minutes, and the mean postoperative hospital stay was 2 days. In 1 patient, at 3-months follow-up, retrograde pyelography showed a medium passage of contrast media through the UPJ, and a new JJ stent is placed. The other patient had just 2-months follow-up.
Conclusions: This technique of percutaneous endoscopic recanalization of the UPJ is feasible and allows at least a placement of changeable JJ stent.

UP.334
Early Experience with Laparoscopic Urologic Surgery
Bouassida M, Hadj Slimen M**, Touaiti T**, Fourati M, Mseddi M, Smaoui W, Chaaben W, Bouhlel A, Rbai N, Mhiri M
CHU Habib Bourguiba, Sfax, Tunisia

Introduction and Objectives: Laparoscopic surgery has become the preferred standard in developed countries. New procedures in laparoscopic surgery are continually being developed. Despite this innovation, Tunisia and many other African countries are yet to fully embrace this surgical approach. In this item we describe our early experience which has been started recently in January 2012.
Materials and Methods: It's for a prospective study to examine the first 40 cases of laparoscopic surgery performed in our department during the period of 2 years between January 2012 and December 2013.
Results: We realized an average of 1.6 interventions per month. We used transperitoneal approach in all cases. Our cases were divided into: promontofixation for uro genital prolapse (15 cases), nephrectomy for destroyedkidneys (10 cases), radical nephrectomy (4 cases), renal cyst (3 cases) retrocaval ureter (1 case), surrenalectomy (2 cases), radical prostatectomy (1 case), diagnostic laparoscopic bladder injury (1 case), lymphocele (1 case), stones of the lumber ureter (1 case), bilateral varicocele (1 case). Interventions went smoothly without per operativeincidents. Conversion was necessary in 2 cases (stones of the lumber ureter with intense urethritis, pyelonephritis). The postoperative course was uneventful in all cases and marked by an early lifting and a rapid restoration of

transit. The surgical results were satisfactory after a mean of 1 year.
Conclusion: Laparoscopy in urology continues to grow with the onset of new materials. In Tunisia, we try to adapt our particular circumstances hoping that this pathway could be reproduced by young residents.

UP.335
Holmium Laser Cystolithotripsy in Children: Single Center Experience
Aboul Ela W, El Sheemy M, Shoman A, Shokry A, Morsi H, Badawy H
Aboul Reich Hospital, Cairo University, Egypt

Introduction and Objectives: Management of vesical calculi in children poses an interesting challenge to the urologist. The treatment options currently available include open surgery, transurethral pneumatic cystolithotripsy, percutaneous suprapubic cystolithotomy and shockwave lithotripsy (SWL). Holmium: YAG (Ho: YAG) laser cystolithotripsy represents a novel modality of treatment that is minimally invasive.
Materials and Methods: From January 2010 to May 2011, we treated 33 children with vesical calculi using transurethral Ho: YAG laserlithotripsy. The mean stone size was 2.02 cm (range 1-4). The mean patient age was 3.75 (range 6 months-11) years. Access was obtained with a cystoscope with sheath 11 F and holmium laser energy (2.75 J/pulse at 11 Hz and power at 30 watt) was applied through a 0.73-mm end-firing fibre under video guidance. The calculi were fragmented to tiny fragments about 2-3 mm in size. An 8F silicone urinary catheter was placed for 3 days in all patients. Post-operatively the children were evaluated at 3 and 12 months with radiological imaging and uroflowmetry to confirm stone-free status and exclude urethral stricture formation.
Results: The mean duration of the endoscopic procedure was 32 (range 20-50) minutes while the length of hospital stay was 24 hours for all patients. All the children were rendered stone-free following a single operative session. Laser-induced major complications were not observed in any of the children. At the mean follow-up of 16 (range 12-24) months none of the children developed stone recurrence, urinary tract infections or urethral strictures.
Conclusions: Transurethral Ho: YAG laser lithotripsy was found to be an efficient and safe modality for the treatment of vesical calculi in children.

UP.336
Using Percutaneous Posterior Tibial Nerve Stimulation (PTNS) for the Treatment of Isolated Nocturnal Eneuresis in Children
Aboul Ela W, Shokry A, Shoman A, El Sheemy M, Morsi H, Badawy H
Aboul Reich Hospital, Cairo University, Egypt

Introduction and Objectives: To determine the efficacy of percutaneous posterior tibial nerve stimulation (PTNS) for the treatment of the nocturnal eneuresis in children.
Materials and Methods: From January 2010 to May 2012, 20 children who are complaining from nocturnal eneuresis with no other irritative symptoms underwent percutaneous electrical nerve stimulation. All patients were evaluated by ascending cystogram (ACU) and urodynamic study preoperatively. All patients had no reflux on ACU. The device for percutaneous nerve stimulation consist of an interface cable, a surface electrode, a percutaaneous needle and a portable stimulator .The nerve is reached by insertion of a fine needle approximately 3 fingers breadth cephalic to the medial malleolus, posterior to the tibia. The surface electrode placed under the heel of the same foot by a sticky pad is connected to low voltage stimulator with adjustable pulse. The amplitude is slowly increased until the large toe start to flex or the toes fan, range from1 to 20 Hz, 12 sessions, each session last for 30 minute, once weekly for 12 weeks then the children were evaluated as regard their symptoms and urodynamic parameters.
Results: Total of 12 patients (60%) out of 20 patients showed improvement as regard their symptoms and improvement in all parameters of urodynamic study with increase in bladder capacity and disappearance of detrusor instabilities, while 8 patients (40%) out of 20 did not show improvement as regard their symptoms despite improvement in urodynamic parameters (4 patients) and others did not show improvement in both symptoms and urodynamic parameters (4 patients).
Conclusions: Posterior tibial nerve stimulation (PTNS) is an effective, minimally invasive option for the treatment of patients complaining of overactive bladder with an easily accessible stimulation site.

UP.337
Can Holmium Laser Replace Cold Knife in Treatment of Stricture Urethra?
Aboul Ela W[1], Abdl Mohsen M[2], Morsi H[1], Shokry A[1], El Sheemy M[1], Shoman A[1], Badawy H[1]
[1]Aboul Reich Hospital, Cairo University, Egypt; [2]Kasr Al Ainy, Cairo University, Egypt

Introduction and Objectives: To assess the effectiveness of visual laser ablation treatment with holmium:yttrium-aluminum-garnet (Ho:YAG) laser in male patients with urethral strictures and to compare the results with those obtained in patients treated with visual internal urethrotomy (VIU) urethrotomy.
Materials and Methods: From January 2010 to January 2013, 32 male patients aged 2 to 70 years (mean age 10.2) with primary urethral strictures 0.5 to 1.5 cm long qualified for the study. There were 19 cases with the stricture length less than 1 cm and in 13 cases the length was more than 1.0 cm. There were also 17 cases with the stricture in anterior urethra and 15 cases with the stricture in posterior urethra. The patients were treated using visual laser ablation of urethral strictures (VLASU) with holmium:YAG laser. All the patients were investigated preoperatively by uroflowmetry and ascending cystourethrogram with micturating urethrogrm and were followed up postoperatively with uroflowmetry and ascending cystourethrogram at 3 months and 6 months. Urethrotomy was made at the 12 o'clock position by retrograde vaporization of the scarred tissue through the total length of the stricture with the aid of a metal guidewire.
Results: At 6-month follow-up, 21 cases (65.6%) did not require repetition of the procedure. The mean operation time was 30.8 minutes (range 20-45 minutes). The mean peak urinary flow rate (Qmax) was 6.41±1.78 l/s. The mean Qmax postoperative at 3 months was 17.26±5.9 and at 6 months postoperative was 15.7±7.21.
Conclusion: VLASU can be used as a method of treatment of this disorder. It is an effective, modern, low-invasive, and repeatable technique and is technically simple and easy to master with results comparable to those of conventional urethrotomy.

UP.338
Urogenital TB in Children and Adolescents in Epidemic Region
Kulchavenya E[1], Mukambaev K[2]
[1]Novosibirsk Research TB Institute, Medical University, Novosibirsk, Russia; [2]National Center of Phthisiatry, Bishkek, Kyrgyzstan

Introduction and Objectives: The level of the child's incidence with tuberculosis (TB) is a mirror of severity epidemic situation.
Materials and Methods: Historical cases of children and teenagers were analyzed among 131 patients with Urogenital tuberculosis (UGTB) in Siberia and 819 UGTB patients in Kyrgyzstan.
Results: In Siberia, 2 children and 1 teenager with UGTB were revealed (2.3% among all UGTB), all had TB of parenchyma. All children were asymptomatic. A 17-year old girl had a long history of recurrent urinary tract infection; as antibacterial therapy was ineffective UGTB was suspected and her urine was cultured. All children and teenagers had a growth of M. tuberculosis (MBT) in urine; MBT was sensitive to all anti-TB drugs. All had isolated kidney TB. In Kyrgyzstan 38 children and teenagers with UGTB were diagnosed (4.6% among all UGTB patients); 17 patients were children and 21 were teenagers. All had a long history, underwent surgical interventions, 6 had fistula, two teenagers had microcystis.
In children wide-spread complicated TB was

diagnosed in 11 cases (64.7%). One boy had also genital TB. Thus, 64.5% patients were revealed in late complicated stage. Only one patient had isolated kidney TB, in others lymphonodal, skeletal, pulmonary TB was diagnosed. MBT in urine was found in 11 children, in 3 – alongside with growth in sputum.
In 21 teenagers complicated UGTB was diagnosed in 11 cases (52.4%). MBT was found in 9 and in the rest diagnosis was confirmed by histology. Generalized TB was found in 17 patients. Surgery was performed in 11 children (64.7%) and 16 teenagers (76.2%).
Conclusion: Late diagnostic of UGTB predominated in Kyrgyzstan, nevertheless in Siberia all children and teenager were revealed in time and cured without surgery. Medical service should be improved in the regions with severe TB epidemic.

UP.339

Posterior Urethral Valve Fulguration: Effect on Renal Prognostic Variables

Nawaz G, Rehman A, Khan I, Hussain I, Akhter S
Shifa International Hospital, Islamabad, Pakistan

Introduction and Objectives: Posterior urethral valve (PUV) is a life-threatening congenital anomaly of the urinary tract occurring in 1 in 8000 to 25000 live births. Factors associated with early renal impairment include late diagnosis and treatment, presence of ureteric reflux, presence of proteinuria and renal impairment at diagnosis. Early diagnosis and fulguration may slow the renal impairment. Our objective was to determine the effect of posterior urethral valve fulguration on renal prognostic variables including VUR, proteinuria and serum creatinine.
Materials and Methods: We retrospectively reviewed records of 88 consecutive children with PUV managed over 3 years. Diagnosis was made by clinical feature, USG and confirmed by voiding cystourethrogram (VCUG). All children were treated by endoscopic fulguration of posterior urethral valves (PUV) using cold knife as urethral valvotome. Serum creatinine, proteinuria and VUR at presentation and after 1 year of PUV fulguration were recorded. Patients with ESRD were excluded from the study.
Results: Mean age at presentation was 4.8 ± 3 years. Patients were regularly followed for 12 months. Hydronephrosis at presentation was seen in 69 (78%) patients that decreased in 73%, disappeared in 15% and remained same grade in 12% of patients. Vesicoureteric reflux on VCUG was seen in 50 (57%) out of 88 patients and in 30 (34%) patients there was bilateral reflux. VUR decreased in grade in 22 refluxing ureters while 18 units (ureters) required sting procedure for persistent reflux. Proteinuria was observed in 36 (41%) patients while after 1 year of valve fulguration proteinuria was seen in 15 (17%) patients only. These were the patients who had significant renal insufficiency at presentation. Mean serum creatinine at presentation was 1.4mg/dl ± 0.6, which decreased to 1.1mg/dl ± 0.4.
Conclusions: Posterior urethral valve fulguration improves symptoms, reduces VUR, proteinuria and serum creatinine that may predict slow progression of renal insufficiency in these patients.

UP.340

Comparison of Efficacy of Endoscopic Treatment for Primary versus Secondary Vesico-Ureteric Reflux in Children

Nawaz G, Muhammad S, Jamil I, Hussain I, Akhter S
Shifa International Hospital, Islamabad, Pakistan

Introduction and Objectives: Posterior urethral valve (PUV) is a life-threatening congenital anomaly of the urinary tract occurring in 1 in 8000 to 25000 live births. Significant numbers of patients have associated VUR that can lead to dysphasia and renal insufficiency. Reflux usually improves and often resolves after valve ablation. Our objective was to compare the efficacy of endoscopic treatment for primary vesico-ureteric reflux with persistent vesico-ureteric reflux due to posterior urethral valve.
Materials and Methods: A total of 80 refluxing ureteric units, treated by endoscopic injection in the last 3 years were included in the study. Patients with primary VUR were assigned Group A (n=60 units) while patients with persistent VUR after fulguration PUV were assigned Group B (n=20 units). Diagnosis was confirmed and grade of reflux was assessed by voiding cystouretherogram (VCUG). All patients underwent endoscopic treatment by the same surgeons. Dextranomer hyaluronic acid co-polemer (DEXELL) was used as bulking agent in all patients. PUV fulguration was also done by the same surgeon and residual valve checked by re-look cystoscopy in all children at 3 months. Three months post injection VCUG was repeated to assess the efficacy which was defined as having no or grade I reflux for single ureter.
Results: Out of 60 ureteric units of Group A, 21 were bilaterally refluxing while 18 had unilateral reflux. In Group B, 14 patients had unilateral reflux while 3 patients had bilateral reflux. There was no clinical significant difference in the outcome among the two groups. In Group A, 38 (64%) were free of reflux, while 16 (27%) showed down gradation and 6 units showed no response, while among Group B, 11 (55%) units were free of reflux, 6 (30%) showed down gradation and 3 (15%) showed no response to single treatment.
Conclusion: Endoscopic treatment is equally successful for both primary VUR as well as for those secondary to posterior urethral valve.

UP.341

Posterior to Anterior Urethral Caliber Ratio of Pediatric Patients with or without Posterior Urethral Valve

Viseshsindh W[1], Hongyok C[2], Pornkul R[2], Jaovisidha S[2], Udomsubpayakul U[3]
[1]Dept. of Surgery, Ramathibodi Hospital, Bangkok, Thailand; [2]Dept. of Radiology, Ramathibodi Hospital, Bangkok, Thailand; [3]Dept. of Epidemiology, Ramathibodi Hospital, Bangkok, Thailand

Introduction and Objectives: To demonstrate the posterior/anterior urethral caliber ratio that appears in voiding cystourethrography (VCUG) among male pediatric patients with or without posterior urethral valve (PUV) for supporting diagnostic decision by imaging.
Materials and Methods: The study population consisted of male pediatric patients (≤ 15 years of age) who underwent VCUG from January 1st 2007 to June 30th 2012. Exclusion criteria were patients who had inadequate study, unavailable films, incomplete data in medical or radiological record, and/or were unable to undergo cystoscopy due to certain circumstances. Measuring of the posterior(P)/anterior(A) urethral caliber ratio was done. The urethral caliber ratio was calculated by dividing the maximal posterior urethral diameter by the maximal anterior urethral diameter. For each P/A ratio, sensitivity and specificity were plotted as a function of cutoff criterion, receiver operating characteristic (ROC) curves were constructed, and the areas under the curve (AUC) were calculated.
Results: A total of 432 patients were retrospectively reviewed. The median age was 2.6 years (range 1 day to 14 years). Median in ratio of 18 patients with positive VCUG and cystoscopic findings for PUV was 3.2 (1.72 to 7.41). A total of 413 patients with no symptom suggestion for PUV and negative VCUG findings for PUV demonstrate median in ratio 1.07 (0.48 to 5.56). The AUC that calculated by ROC curve was 0.991. At cut-off ratio 2.0, the sensitivity, specificity and accuracy were 94.7%, 96.9% and 96.8% respectively. At cut-off ratio 2.5, the sensitivity, specificity and accuracy were 73.7%, 99.3% and 98.2% respectively. At cut-off ratio 3.0, the sensitivity, specificity and accuracy were 57.9%, 99.8% and 97.9% respectively.
Conclusions: Posterior urethral valve is a serious cause of congenital bladder outlet obstruction in males and can present in varieties of occurrence and magnitude. Thus, good diagnostic decision is important. The calculation of posterior/anterior urethral caliber ratio provides us with objective measurement for benefit in diagnostic decision by VCUG. Best cut-off for optimum sensitivity and specificity is probably a P/A Ratio of 2.0. Best cut-off for high specificity is probably 2.5 or 3.0.

UP.342

Maintenance of Testicular Size in Childhood Variococele

Khasnavis S**, Kogan B**
Albany Medical College, Albany, USA

Introduction and Objectives: Fertility is affected in 20% of adults with a varicocele. In teens, testicular atrophy/hypotrophy has been used as a proxy for future fertility issues. We studied the incidence and progression of testicular size discrepancy in a series of children followed non-operatively.

Materials and Methods: We identified 104 consecutive children seen by us for varicocele. Surgery was only undertaken in 3 who were being operated on for other reasons. We retrospectively reviewed those with at least 3 consecutive annual follow-ups. There were 35 boys, ages 9-14 years. Varicocele grade and orchidometric volumes were recorded. We also analyzed patients with >10% difference in testicular size and those with grade 3 varicoceles at initial visit.

Results: The median age was 12 (range 9-14) and mean grade of varicocele was 2.3 ± 0.6. We found the mean left testicular volume to be 96, 95 and 96% of the right at the 1st, 2nd and 3rd visit respectively. There were no differences in the pre- and post-pubertal boys. Of the 13 (37%) boys with a grade 3 varicocele, the left testicular volume was 95% (SD 11.4) of the right at presentation and was unchanged through visit 3 (96%, p=0.69). Eleven (31%) boys had a > 10% size difference at presentation; the left testicle measured 82% of the right (SD 5.3) at diagnosis and increased to 92% (SD 6.3) by the 3rd visit (p<0.001). In 23 boys, we reviewed data from a 4th visit and in 12, a 5th visit. In these boys, mean left testicular volume was 99% of the right at diagnosis and 104% and 104% at the 4th and 5th visit (p=0.13).

Conclusions: We found no progression in atrophy/hypotrophy of the left testis in a series of consecutive teens followed non-operatively for varicocele. Our data supports observation as management for childhood varicocele as most cases fail to show progressive loss of volume.

UP.343

Comparison of Efficacy of Desmopressin Fast-Melting Formulation and Enuretic Alarm-Only in the Treatment of Nocturnal Enuresis

Tuncel A[1]**, Balci M**[1], Oguz U[2], Aslan Y[1], Bilgin O[1], Atan A[1]
[1]Ankara Numune Training and Research Hospital, Ankara, Turkey; [2]Kecioren Training and Research Hospital, Ankara, Turkey

Introduction and Objectives: The aim of the present study was to compare the efficacy of desmopressin fast-melting formulation and enuretic alarm-only in the treatment of monosymptomatic nocturnal enuresis (MNE).

Materials and Methods: A total of 104 patients (59 boys and 45 girls) who had significant primary MNE were included in the study. The patients were randomized into 2 groups. Group 1 (n=49) received Desmopressin fast-melting formulation (Minirin Melt®, Ferring) 120 μgr/d p.o and Group 2 (n=55) received enuretic alarm therapy (Enurin®, Aymed Medical Inc.). The groups received their treatment during 3 months. The children were classified as *non-responders* if there was no or less than 50% decrease in wet nights compared to baseline; *partial responders* if there was 50% or more, but less than 90% decrease in wet nights compared to baseline; *responders* if there was a 90% or more decrease in wet nights compared to baseline. All the patients were evaluated at first and 3rd months.

Results: No significant difference in terms of age between the groups (11 vs. 10 yr, p>0.05). At the end of the first month, response rates were 54.5% (34/55) and 38.8% (19/49) in group 1 and 2 also, partial response rates were 25.5% (14/55) and 34.7% (17/49) in group 1 and 2 (p=0.274). No response rate were 20% (11/55) and 26.5 (13/49) in group 1 and 2. At the end of the third month, response rates were 56.4% (31/55) and 67.3% (33/49) in group 1 and 2 also, partial response rates were 20% (11/55) and 4.1% (2/49) in group 1 and 2, respectively (p=0.05). No response rate were 23.6% (13/55) and 28.6 (14/49) in group 1 and 2. Response rate significantly increased at 3rd month in Group 2, whereas we did not find significant alteration in terms of response rate in Group 1.

Conclusion: At the end of the third month, response rate seems to be higher in enuretic alarm therapy group than desmopressin fast-melting formulation therapy group. At the end of the first month, proceeding the desmopressin fast-melting formulation therapy did not lead more contribution to the success rates in non-responders.

UP.344

Risk Factors for Relapse in Children with Monosymptomatic Nocturnal Enuresis

Oguz U[1]**, Demirelli E**[1], Ozyuvali E[2], Senocak C[2], Ogreden E[1], Yalcin O[1]
[1]Dept. of Urology, University of Giresun, School of Medicine, Giresun, Turkey; [2]Dept. of Urology, Kecioren Training and Research Hospital, Ankara, Turkey

Introduction and Objectives: Monosymptomatic nocturnal enuresis (MNE) is one of the most frequent conditions in children. There is a high rate of success in the treatment of MNE. But on the other hand the relapse rate was defined 5-30% and 50-90% after alarm and desmopressin treatment, respectively. With this study we aimed to evaluate risk factors for relapse after the treatment of children with MNE.

Materials and Methods: We retrospectively reviewed the medical records of 51 children with MNE, who had long-term follow-up results (>6 months) before September 2013. They were treated by Desmopressin or alarm device. Patients with failed treatment were excluded. Forty-three patients with response (≥90% reduction in wet-night) or partial response (≥50% and <90% reduction in wet-night) were included to this study. Of 43 patients, 30 children were treated by Desmopressin and 13 children used alarm treatment. Patients were divided into two groups according to relapse rates. Group I (n:30): without relapse, Group II (n:13): with relapse. We aimed to determine whether or not relapse is associated with age, gender, family history and the number of wet-night.

Results: In Group II, eleven children were treated with desmopressine while two children were treated with alarm device. Mean age was 11.7 (6-16) years and 12.2 (6-16) years in Group I and II, respectively (p>0.05). Male/female ratio was 1.5; 1.1, respectively (p>0.05). Family history in first-and second-degree relatives was not statistically significant in the two groups (p>0.05). The number of wet-night/month was also not significant in the groups (p>0.05).

Conclusions: With this study we determined that age, gender, family history and the number of wet-nights are not risk factors for relapse after the treatment of MNE.

UP.345

Is Age Associated with Success of the Treatment in Children with Monosymptomatic Nocturnal Enuresis?

Oguz U[1]**, Demirelli E**[1], Yordam M[2], Ogreden E[1], Yalcin O[1]
[1]Dept. of Urology, University of Giresun, School of Medicine, Giresun, Turkey; [2]Dept. of Urology, Kecioren Training and Research Hospital, Ankara, Turkey

Introduction and Objectives: Monosymptomatic nocturnal enuresis (MNE) is observed in 15% of children at five years of age and the prevalence of MNE decreases with increasing age. But it is unclear if the age is associated with the success of the treatment in children with MNE. With this study, we aimed to evaluate whether age is associated with the success of the treatment in children with MNE.

Materials and Methods: We retrospectively reviewed the medical records of children with MNE until September 2013, and 51 children treated by Desmopressin or alarm device were included to this study. Of 51 patients, 35 children were treated by Desmopressin and 16 children used alarm treatment. Only patients with long-term follow-up results (>6 months) were included. We created 3 groups according

to response rates. Full response and ≥90% reduction in wet-night was considered as success (Group I); achieving ≥50% and <90% reduction in wet-night was considered as partial success (Group II); <50% reduction in wet-night was considered as failure (Group III). We evaluated the difference of age in three groups.
Results: Mean age was 11.3 years (6-16 years). Male/female ratio was 28/23. Forty-three (84.3%) children had family history of MNE in first-and second-degree relatives. We achieved full response and ≥90% reduction in wet-nights in 32 (62.7%) patients (Group I); ≥50% and <90% reduction in 11 (21.6%) patients (Group II) and <50% reduction in 8 (15.7%) patients (Group III). Mean ages of the groups were 12.5 years (6-16 years), 10 (6-16 years), 8.6 (6-16 years) in Groups I, II and III, respectively (p=0.015).
Conclusions: In the present study we determined that response to treatment in children with MNE increases with the increasing age.

UP.346
Lower Urinary Tract Dysfunction (LUTD) in Children with Dysfunctional Voiding Symptom Score (VDSS) Lower Than 8.5
Kibar Y, Irk1lata H**, Köprü B**, Alp B, Dayanç M
Gulhane Military Medical Academy, Ankara, Turkey

Introduction and Objectives: Lower urinary tract dysfunction (LUTD) can lead to several significant problems such as incontinence, recurrent urinary tract infection, vesicoureteral reflux and kidney damage in neurologically normal children. Dysfunctional voiding symptom score (DVSS) is frequently used with other noninvasive diagnostic methods [i.e. 3-day voiding diary and uroflowmetry with electromyography (UF-EMG)] for the diagnosis and follow-up of children with LUTD. We aimed to evaluate UF-EMG patterns of children whose DVSS was lower than 8.5.
Materials and Methods: UF-EMG, VDSS and 3-day voiding diaries of 302 patients, who were treated and followed-up between 2009 and 2013, were analyzed. The DVSS score of 89 patients (29%) were detected to be below 8.5, changing from 0 to 8.
Results: Among patients with DVSS lower than 8.5, isolated dysfunctional voiding (DV) was detected in 18 patients, over active bladder (OAB) in 31, DV and OAB in 8, isolated urgency in 15, extraordinary daytime urinary frequency in 14 and primary bladder neck dysfunction in 3. In the analysis of the UF-EMG patterns of the patients, the patterns of 32 patients were found to be normal, 27 were stakkato, 15 were intermittent, 9 were plato and 6 were tower. Among 26 patients with DV, severe voiding phase dysfunction (grade 3-4) was detected in 13 patients.
Conclusion: DVSS is a useful diagnostic method for the first evaluation and the follow-up of patients with LUTD. However, a DVSS lower than the cut-off value of 8.5 may not exclude the presence of LUTD. Therefore, the evaluation of LUTD presence should comprise the results of all diagnostic methods such as DVSS, voiding diary and UF-EMG.

UP.347
Complications after Common Sheath Reimplantation in Pediatric Patients with Complicated Duplex System
Lee Y, Son H, Shin S, Bascuna R, Ha J, Lee H, Im Y**, Han S**
Dept. of Urology, Urological Science Institute, Yonsei University College of Medicine, Seoul, South Korea

Introduction and Objectives: When the upper tract approach is contraindicated in patients with ectopic ureter or ureterocele combined with ureteral duplication (EU), a bladder level approach (BLA), involving either common sheath reimplantation (CSR) or total reconstruction (TR), is the remaining option. However, concerns exist about the high morbidity of BLAs. We report our experience of CSR for EU, including the success rate and rate of complications, such as voiding problems.
Materials and Methods: We retrospectively examined the results of 39 patients who underwent CSR between January 2001 and December 2012. Risk factors for the development of postoperative voiding problem and decreases in differential renal function (DRF) were analyzed.
Results: The median age at operation was 16.5 months. After CSR, upper urinary tract dilatation decreased in 36 patients (92.3%). During a median follow-up of 70.5 months, an additional operation was required in six patients (15.4%). Voiding problems developed in seven of 38 patients (18.4). Low preoperative DRF (≤40%) was the only risk factor for the development of postoperative voiding problem on multivariate analysis (p = 0.005). DRF decreased postoperatively in five of 36 patients (13.9%) and also associated with low preoperative DRF. No patient developed hypertension or proteinuria.
Conclusions: CSR decompressed the upper urinary tract effectively in our EU patients. Low preoperative DRF was the only risk factor for the development of postoperative voiding problems. When the upper tract approach is contraindicated, CSR is a reasonable alternative. TR is unnecessary, as the remnant upper pole kidney after CSR does not lead to complications.

UP.348
Pediatric Laparoscopy-Assisted Extracorporeal Pyeloplasty: A Comparative Single Institution Experience
Song S[1], Lee D[1], Sohn M[1], Hong B[1], Jeong I[1], Park S[1], Kim K[2], Choo M[1], Kim C[1], Kim K[1]
[1]Asan Medical Center, University of Ulsan College of Medicine, Seoul, South Korea; [2]Chung-Ang University College of Medicine, Seoul, South Korea

Introduction and Objectives: Laparoscopy-assisted extracorporeal pyeloplasty (LEP) is one of

UP.348, Table 1. Uni- and multivariate regression analysis for prediction of successful ooutcome after pyeloplasty

	Univariate			Multivariate		
	OR	**95% CI**	**P**	**OR**	**95% CI**	***P***
Gender	0.615	0.094-4.039	0.613	2.671	0.169-42.240	0.485
Age at op	1.002	0.984-1.021	0.797	1.018	0.989-1.048	0.233
Op method	0.224	0.024-2.136	0.194	0.347	0.029-4.210	0.347
Preop HN grade	2.089	0.464-9.401	0.337			
Preop APPD	1.102	0.528-2.298	0.796			
Split renal function	1.014	0.943-1.090	0.705			
Dismember or not	0.151	0.011-2.046	0.155			
Preop stone	1.683	0.000-	0.999			
Preop UTI	0.400	0.037-4.306	0.450			
Preop GHU	1.584	0.000-	0.999			
Preop PCN	1.584	0.000-	0.999			
Preop RGP	0.419	0.063-2.799	0.369			
Crossing vessel	**0.031**	**0.003-0.321**	**0.004**	**0.031**	**0.003-0.321**	**0.004**
Stent insertion	0.259	0.027-2.470	0.241	0.813	0.021-31.834	0.912
PCN insertion	1.615	0.000-	0.999			

the surgical options for treatment of pediatric ureteropelvic junction obstruction. We report our experience and compare the outcomes between open and LEP in pediatric patients.
Materials and Methods: We retrospectively reviewed the medical records of 36 children who underwent LEP and 36 age- and gender-matched pediatric patients who underwent open dismembered pyeloplasty for ureteropelvic junction obstruction at a single institution between 1996 and 2012. For laparoscopic surgery, ureteropelvic junction or ureters were dissected laparoscopically and were brought up to the level of the abdominal cavity near the camera port site for dismembered pyeloplasty under direct vision. Successful surgery was defined as resolution of symptoms, improvement of hydronephrosis on follow-up ultrasound, and improvement of drainage on diuretic renal scan.
Results: Mean age was 107.9 ± 51.4 months for open and 116.0 ± 51.5 months for LEP (p=0.545) Distribution of laterality, mean BMI and preoperative anteroposterior pelvic diameter on ultrasound were not different between the groups. Mean operative time was 192.5 ± 67.1 minutes for open and 197.4 ± 38.9 minutes for LEP (p=0.733). Ureteral stent was less frequently inserted in open group than in LEP group (33.3% in open vs. 74.3% in LEP, p=0.004). Hospital stay was shorter in LEP group (p=0.051). Mean follow-up duration was 49.0 ± 31.8 months for open and 20.2 ± 14.9 months for LEP (p<0.001). Primary success rate was similar between the groups (94.4% for open vs. 85.3% for LEP, p=0.253). Operative method, laterality, preoperative history of urinary tract infection, and stent insertion was not associated with successful outcome. Presence of aberrant vessel was the only factor that deteriorates successful outcome in uni- and multivariate regression analysis (Hazard ratio=0.031, 95% CI 0.003-0.321, p=0.004) (Table 1).
Conclusion: Open and laparoscopy-assisted extracorporeal pyeloplasty are effective surgical option for treatment of ureteropelvic junction obstruction, with similar success rate. Presence of aberrant vessel is a predictive factor for poor surgical outcome.

UP.349
Diurnal Temperature Change Is Not Associated with Testicular Torsion Incidence: A Nationwide Data in Korea
Choi W, Park H, Paick S, Kim H, Lho Y
Konkuk University Hospital, Seoul, South Korea

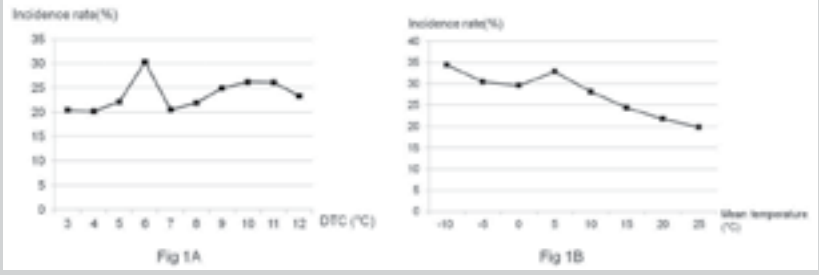
Introduction and Objectives: Many studies reported the relationship of testicular torsion and seasonality. Recently an association was reported about diurnal temperature change (DTC) and testicular torsion. The objective of this study was to confirm of the association of DTC and testicular torsion incidence using large nationwide data in Korea.

Materials and Methods: This study retrieved data from the Uro-PDS which is a database released by Korea urologic association (KUA). Uro-PDS data include age, diagnosis, kind of surgery, time of admission and time of discharge. We identified 587 orchiopexy cases for testicular torsion between 2006 and 2011 in Seoul. Orchiectomy case data were excluded in the analysis. Climatic data of Seoul were provided by the Korea Metrological Administration and included ambient temperature and diurnal temperature change. We stratified the whole day of 6 year by DTC and temperature. Per each 1°C change, the incidence rate of number of admission/number of day was calculated. The final incidence rate was 67/253 (26%). Correlation analysis was performed between DTC, temperature and incidence rate. To identify seasonality, DTC and mean number of torsion episode of Spring (March-May), Summer (June-August), Autumn (September-November), and Winter (December-February) were analyzed.
Results: A total of 587 patients with a mean age of 16.7 years presented with testicular torsion and underwent orchiopexy. Incidence rate was not correlated with DTC increase (p=0.09, Figure 1A) but correlated with temperature decrease (r=-0.53, p<0.001, Figure 1B). Among the four seasons, Spring (9.0°C) and Autumn (8.7°C) showed higher DTC than Winter (7.3°C) and Summer (6.7°C). However, Winter season showed higher mean torsion episode (29.0 cases) than other seasons (Spring 26.0, Summer 18.3, Autumn 24.5 cases).
Conclusions: Low temperature and winter season was associated with increase of testicular torsion incidence. However, diurnal temperature change was not associated with testicular torsion incidence.

UP.350
Seasonality of Testicular Torsion: A 6-Year Nationwide Population Based Study
Choi W, Park H, Paick S, Kim H
Konkuk University Hospital, Seoul, South Korea

Introduction and Objectives: Using a 6-year nationwide data set, we examined seasonal variability in the monthly incidence of pediatric testicular torsion in Korea. We also investigated the association between meteorological factors (ambient temperature, relative humidity, atmospheric pressure and hours of sunshine) and testicular torsion.
Materials and Methods: This study retrieved data from the Uro-PDS. In Korea, all resident-training hospitals should report the data related urology surgery annually to Korea urologic association (KUA). After collecting and classifying the data, KUA releases the data as the name of Uro-PDS annually. Uro-PDS data include age, diagnosis, kind of surgery, time of

UP.349, Figure 1. Torsion incidence rate according to DTC (A) and mean temperature (B)



UP.350, Figure 1.

admission and time of discharge. We identified 733 orchiopexy cases for testicular torsion of children between 2006 and 2011. The age of subjects was younger than 18 years old (mean: 12.4±4.1 years old). ARIMA method (Auto-Regressive Integrated Moving Average) was used to test for seasonality in the incidence of testicular torsion. Correlation analysis was used to explore possible associations between climatic parameters and the monthly incidence of testicular torsion.
Results: The results demonstrated seasonal pattern in monthly incidence rates for testicular torsion. Testicular torsion showed the highest occurrence in January (Mean: 15.3±4.9 cases) and lowest number in June (Mean: 6.5±3.7 cases). The monthly incidence was negatively associated with ambient temperature (r=0.53, p<0.001). Other climates factors were not associated with the torsion incidence. After adjusting for the time trend effect and climatic parameters, the ARIMA regression revealed that January had a significantly higher monthly incidence (p=0.02).
Conclusions: Our study shows that testicular torsion had seasonal variation. Winter season and low temperature were significantly associated with occurrence of testicular torsion in children.

UP.351
The Role of Endoscopic Injection of Bulking Agents in Patients with Persistent Vesicoureteral Reflux after Open Anti-Reflux Surgery
Bascuna R[1], Ha J[2], Lee Y[1], Lee H[1], Im Y[1], **Han S**[1]
[1]Yonsei University, Seoul, South Korea; [2]Keimung University, Daegu, South Korea

Introduction and Objectives: We propose endoscopic treatment using bulking agents for persistent vesicoureteral reflux (VUR) after unsuccessful open anti-reflux surgery (ARS).
Materials and Methods: Patients with persistent VUR after open ARS then managed subsequently with endoscopic injection using dextranomer/hyaluronic acid copolymer (Dx/HA) or polydimethylsiloxane (PDMS) in our institution from January 2006 to December 2010 were included in the retrospective study. Age, sex, surgical technique, material used for injection, and voiding cystourethrogram (VCUG) findings, were analyzed.
Results: Nine patients (6 males, 3 females), consisting of 11 ureteral units, were included. Median age during surgery was 10 months (range 7 – 71) while during endoscopic treatment was 29 months (range 19 – 92). Median interval from surgery to injection was 21 months (7 – 36). Paquin technique was performed in 4 units, 3 of them with ureteral plication; intravesical detrusorrhaphy in 3 units, 2 of them with ureteral plication; and extravesical detrusorrhaphy in 4 units. Persistent VUR was treated using Dx/HA and PDMS endoscopic injection in 4 and 7 units, respectively. Plicated ureteral units used more amount of bulking agents compared to non-plicated ureters (2cc versus 1cc). Follow-up VCUG documented persistent VUR resolution in 10 out of 11 units (91%).
Conclusion: Endoscopic injection of bulking agents, a reliable and safe secondary procedure, offers good solution for correcting persistent VUR after open anti-reflux surgery. Orthotopic ureteroneocystostomy, often underutilized because of its perceived complication of VUR persistence, should be not be hesitated upon by surgeons as effective treatment is available if needed.

UP.352
Flexible Ureterorenoscopy and Lasertripsy (FURSL) for Paediatric Renal Calculi: Results from a Systematic Review
Ishii H[1], Griffin S[1], Agrawal V[2], **Somani B**[1]
[1]University Hospital Southampton NHS Trust, Southampton, UK; [2]University of Rochester Medical Center, Rochester, USA

Introduction and Objectives: With advancement of technology and smaller flexible ureterorenoscopes it is now possible to treat paediatric renal stones with FURSL. We carried out a systematic review of literature to see the current evidence for FURSL in paediatric renal stones.
Materials and Methods: We looked at MEDLINE, PubMed, EMBASE and the Cochrane Library from January 1990 to December 2013. The inclusion criterion was all English language articles reporting on flexible ureteroscopy for paediatric renal stones reporting on a minimum of 5 cases. Studies reporting on rigid ureteroscopy and or treatment of adult stones or ureteric stones were not included.
Results: Five studies (187 patients) (Table 1) met the inclusion criteria reporting on FURSL exclusively for paediatric renal stones. The mean age was 7 years (range: 0.2-15 years) with a male to female ratio of 85:72. The mean stone size was 10.6mm (range: 1-30mm) with a stone free rate (SFR) of 82% of which 87 (91%) patients had a post-operative stent inserted. Complications included 5 intra-operative ureteric perforations and 22 minor post-operative complications (Haematuria-7; UTI-10; abdominal pain-2; voiding disturbances-2; and nausea/vomiting-1).
Conclusions: Paediatric FURSL for renal stones has a relatively high success rate. It should be done in an expert high volume centre.

UP.353
Ureteroscopy for Paediatric Stone Disease: Results from a University Teaching Hospital
Chedgy E, Griffin S**, Somani B**
University Hospital Southampton NHS Trust, Southampton, UK

Introduction and Objectives: The use of ureteroscopy for the treatment of paediatric stone disease has risen in recent years. We reviewed the results of ureteroscopic stone management for the regional paediatric stone service in our University teaching hospital.
Materials and Methods: Between April 2010 and January 2014, consecutive patients who had ureteroscopy and stone fragmentation were identified. Data was recorded from electronic records for patient demographics, pre-operative assessment, stone characteristics, intra- and post-operative complications.
Results: Twenty-two patients (mean age 9 years; range: 1.4-16 years) had 36 procedures done (14 males and 8 females). These patients were referred from distances ranging from 6-210 miles (mean 72 miles). Of these 22 patients, 16 (72%) were stone free after the first procedure, 18 (82%) after a second and 21 (95%) after a third (mean 1.5 procedures/patient). One patient with a 6mm residual fragment chose to have surveillance. Five (23%) had a metabolic abnormality, 9 (41%) had an anatomical abnormality and 8 (37%) with underlying congenital or other comorbidities. The mean initial stone size was 10.8mm (range: 5-20mm) with 22 procedures done for stones above PUJ and 14 for stones below the PUJ. The stone analysis was available for 14 patients (5 calcium phosphate, 4 calcium oxalate, 3

UP.352, Table 1. Studies included in the systematic review

Author	Journal	Year	Period of review	Country	No. of pts	Mean age (range)	Mean stone size (mm)	SFR (%)
Corcoran et al	J Urol	2008	2003-2007	USA	30	9.7 (2-14.4)	8.8 (1.5-25)	98
Tanaka et al	J Urol	2008	2002-2007	USA	50	7.9 (1.2-13.6)	8 (1-16)	58
Unsal et al	J Paeds Surg	2011	2006-2010	Turkey	16	4.2 (0.8-7)	11.5 (8-17)	88
Erkurt et al	Urolithiasis	2013	2005-2013	Turkey	65	4.3 (0.5-7)	14.6(7-30)	92
Yeow et al	J Indian Assoc Paed Surg	2009	1997-2006	Australia	26	8 (0.2-15)	10 .3(3-21)	88.5

magnesium ammonium phosphate, 2 uric acid and 1 cystine stone). Of the 36 procedures, 20 (56%) had a pre-operative stent. A positive pre-operative urine culture was seen in 5 (14%). CT KUB was only used in 7 (19%) with the rest having a combination of USS and or plain KUB. The energy source used for fragmentation was laser in 31 (86%) patients, lithoclast in 1 (3%) with the remaining 4 (11%) having basket extraction. Twenty (56%) had post-operative stent insertion. Mean length of stay was 1.5 days (range: 0-5 days). No major Clavien complications were recorded. Minor complication was observed in 2 (5.5%), the first patient needed additional oral antibiotics for UTI and a second patient with stent encrustation needed a ureteroscopic retrieval.
Conclusions: Our results show that all patients were stone free at the end except for one patient who chose to undergo surveillance. Ureteroscopy for stone disease in children is feasible with a low complication rate and high stone free rate.

UP.354
Modified Arab Technique for Distal Penile and Coronal Hypospadius Repair: Simple, Easy and with Less Complications
Ismail M, Mehena A, El Baz A, Alesaly K
Theodre Bilharz Research Institute, Giza, Egypt

Introduction and Objectives: Distal penile and coronal hypospadius are the most common types of hypospadius. There are multiple techniques for their treatment, like MAGPI, Snodgrass, Mathieu and Arab. In this work we describe a new technique that is simple, efficient easy to learn and with few complications with no use of stents, urethral catheter or need for urinary diversion.
Materials and Methods: For more than 3 years, 33 kids were admitted to our department for the treatment of distal penile and coronal hypospadius, their age range was 1-5 years. Modification of Arab technique was applied. First a transverse ventral skin incision 1-2 cm proximal to the urethra opening and dissection of the skin both proximal and distal; then the urethra was mobilized anteriorly by making a dorsal central incision in the urethral plate from its tip to within the urethral opening to widen it if the urethral opening was tight. The urethral incision was closed transversely. Then the distal skin edge was pulled at 2 points around the urethral opening making the roof for the mobilized urethra and 2-3 stitches fix that roof in place. The whole process takes about 10 – 15 minutes. No stents or urethral catheter was left and all patients were discharged in the same day.
Results: Twenty nine patients passed the post operative period uneventfully, 4 patients had either partial 2 patients or complete 2 patients loss of the skin stitches holding the roof. Of the partial loss of the skin stitches 1 chose to do nothing as he was satisfied with the results and the other had redone the lost stitches (2). While the total loss patients had either redone the operation (1) or TIP operation (1 patient).
Conclusion: This is a very simple operation that takes 10 minutes and has functional and cosmetic outcome comparable to other operations. Modified Arab is a simple cost effective and easy to learn procedure.

UP.355
Effect of Urine PGE2 Level on Bladder Growth
Ebiloglu T[1], Kibar Y[2], Irkilata H[2], Kaya E[2], Ergin G[3], Yaman H[4]
[1]Dept. of Urology, Etimesgut Military Hospital, Ankara, Turkey; [2]Dept. of Urology, Gulhane Military Medical Academy, Ankara, Turkey; [3]Dept. of Urology, Sarikamis Military Hospital, Sarikamis, Turkey; [4]Dept. of Biochemistry, Gulhane Military Medical Academy, Ankara, Turkey

Introduction and Objectives: Prostaglandins (PG) occur through the pathway starts with the cleavage of membrane phospholipids by Phospholipase C to form arachidonic acid and ends with the reaction of arachidonic acid with cyclooxygenase enzyme to form various forms of PGs. These PGs play different role in different structures of body. Growing child cannot be thought as an adult. In every step of growth many changes occur in the body. Bladder movements change and synchronize by years. In this research we wanted to identify if the PGE2 level changes and affects the bladder growth or not.
Materials and Methods: Forty-eight children between 5-15 age and attending to hospital for routine body weight and height control were enrolled in this study. In order to exclude urinary pathologies meticulous physical and neurological examination, urine sample, hemogram, blood urea and creatinine, direct graph of abdomen, USG and lower urinary tract symptom scale were applied. No urinary pathologies were detected. Correlation between child age and urine PGE2 level were examined by using Pearson correlation test.
Results: There were 22 girls and 26 boys. Mean age was 9.26 ± 2.87. Correlation between child age and urine PGE2 level was not statistically significant (p=0.71).
Conclusion: Urine PGE2 level cannot be thought as an agent on bladder growth.

UP.356
Color Doppler Sonographic Ureteral Jets Measurement in Evaluation of Congenital Hydronephrosis
Asanuma H[1], Satoh H[2], Matsui Z[2], Masuda A[1], Mizuno R[1], Oya M[1]
[1]Keio University, Tokyo, Japan; [2]Tokyo Children's Medical Center, Tokyo, Japan

Introduction and Objectives: Hydronephrosis and obstruction are closely associated, but upper urinary tract dilatation can occur without significant obstruction in children. Despite some pitfalls, conventional ultrasonography (US) and renography are the main means of evaluation of congenital hydronephrosis. The aim of this study was to evaluate color Doppler sonographic ureteral jets measurement as a diagnostic tool to distinguish obstructive from non-obstructive hydronephrosis in children.
Materials and Methods: We evaluated 45 pediatric patients (mean age: 4.2 years) who presented with unilateral grade III or IV hydronephrosis with pyeloureteral junction obstruction. All patients underwent renography and evaluation of ureteric jets by transverse color Doppler US of the bladder. Obstruction was considered in the renography when the hydronephrotic unit showed a differential renal function of less than 45%, in the US when renal pelvic dilatation was up-graded, or in the clinical follow-up when symptom related to hydronephrosis such as renal colic pain and breakthrough infection was present. The number of ureteric jets was counted over a 5-min period and the frequency calculated for each ureteral orifice. Relative jet frequency (RJF) was defined as frequency of the hydronephrotic side divided by total ureteric jet frequency.
Results: Obstructive and non-obstructive hydronephrosis were considered in 20 and 25 patients, respectively. The mean RJF differed between obstructive (0.109, range 0-0.389) and non-obstructive hydronephrosis (0.453, range 0.143-1) ($p<0.01$). The overall ability of RJF to detect obstructive hydronephrosis as given by the area under ROC curve was 0.96. Each cut-off of RJF <0.25, <0.3, <0.35 was correctly discriminated obstruction with a sensitivity of 87.5%, 93.8%, 93.8% and specificity of 93.8%, 87.5%, 87.5%, respectively.
Conclusions: Color Doppler US evaluation of ureteric jets is an easy and non-invasive method that can be used as an initial diagnostic tool to differentiate obstructive from non-obstructive hydronephrosis in children.

UP.357
Development of a Reliable Grading System for Bladder Trabeculation in the Pediatric Population with Neurogenic Bladder
Watts B[1], Hidas G[2], Kelly M[1], Soltani T[3], Wehbi E[1], McAleer I[1], McLorie G[1], **Khoury A**[1]
[1]UCI Dept. of Urology, CHOC Children's Hospital of Orange County, Orange, USA; [2]Hadassah and Hebrew University Medical Center, Jerusalem, Israel; [3]University of Michigan Medical School, Ann Arbor, USA

Introduction and Objectives: Bladder trabeculation is commonly seen in patients with a neurogenic bladder and is the result of smooth muscle hypertrophy secondary to asynchrony between the detrusor muscle and the bladder outlet. Radiologists and urologists not only note trabeculation in their patients, but it can

influence their decisions about plan of care; therefore, it is important that radiologists and urologists reliably communicate about the severity of trabeculation. Because of the lack of a reliable grading system for bladder trabeculation in the pediatric patient with neurogenic bladder, I aimed to develop definitions for grading bladder trabeculation in children with neurogenic bladder.

Materials and Methods: An expert panel of three pediatric urologists contributed to the development of a grading system for bladder trabeculation in the pediatric patient with neurogenic bladder by developing a domain of observables and definitions for different grades of trabeculation in the pediatric patient with spina bifida and neurogenic bladder. The grading system was then demonstrated to nine raters including pediatric urologists, an urologist, pediatric urology nurse practitioners, a certified nurse anesthetist, and a lay person. Each rater evaluated nine bladders, representing a range of trabeculation severity, using an anteroposterior (AP) view towards the end of filling on cystography. The nine raters' results were analyzed with intra-class correlation coefficient (Cohen's Kappa and Spearman's Rho) to establish inter- and intra-rater reliability.

Results: An intraclass correlation coefficient of 0.987 with a 95% confidence interval (CI) of 0.970-0.977, p<0.001 resulted indicating a high degree of inter-rater reliability. A Cohen's Kappa statistic ranging from 0.830-1.0, p<0.001 and Spearman's p (rho) correlation coefficient ranging from 0.930-1.0, p<0.001 were found for the nine bladder images thus documenting more than satisfactory results for intra-rater reliability.

Conclusion: The robust findings for inter- and intra-rater reliability will allow clinicians and radiologists to communicate standardized levels of trabeculation to one another. The grading system will also serve as the foundation to later correlate clinical findings and outcomes to trabeculation severity, in future validation studies. Results from such studies could be useful in guiding clinical decision-making involving trabeculation grade.

UP.358

Impact of Grade and Type of Vesicoureteral Reflux on the Outcome of Deflux Injection in Children

Trbay M, Abdel-Fattah M, Zakaria M, **El-Bahnasawy M**

Prince Saman Hospital, Tabuk, Saudi Arabia

Introduction and Objectives: Vesicoureteral reflux (VUR) is a common and major urological problem in children. Its incidence ranges from 1% to 3% in healthy children and 20% to 35% in children with urinary tract infection. Deflux injection has gained popularity and is now considered a valid alternative both to open surgery and antibiotic prophylaxis. Aim of the study is to evaluate the success of Deflux injection in relation to different grades and types of VUR in our children.

Materials and Methods: The study included 46 children (33 boys and 13 girls) with 63 refluxing ureteral units as determined by voiding cystourethrogram (VCUG). STING technique was used for low grade VUR (grade II, and III) while hydrodistension implantation technique (HIT) technique was used for high grade VUR (grade IV and V). All the patients were followed up with voiding VCUG at 3 months after the procedure.

Results: Cure rate for grade II was 100% (3/3), grade III 94% (17/18), grade IV 88.8% (16/18), and grade V 54.2% (13/24). Overall cure rate for low grade VUR (II, and III) was 95.2% (20/21) versus 69% (29/42) for high grade VUR (IV and V) (P<0.001). Resolution of VUR for 43 renal units with primary VUR was 83.7% (36/43) versus 65% (13/20) for 20 renal units with secondary VUR (P=0.005). Overall cure rate was 70% (44/63) with a single injection, and a second injection raised the cure rate to 77.8% (49/63) per renal unit.

Conclusion: Different types and grades of VUR greatly affect the outcome after correction by Deflux. Follow-up and repeat Deflux injection is expected to improve the outcome. We recommend endoscopic treatment with Deflux as a first-line therapy for most cases of VUR, particulary primary and low grades.

UP.359

Predictors of Enuresis among Primary School Children

Elderwy A, Kurkar A, Mohamed M, Khair A, **Aboulella H**

Dept. of Urology, Assiut University Hospital, Assiut, Egypt

Introduction and Objectives: Enuresis is a widespread and potentially disabling disorder in children. In the present study, we have determined the prevalence of enuresis in two different districts (urban vs. rural) to investigate the predictors of enuresis in our population.

Materials and Methods: A cross-sectional epidemiological study was carried out on randomly selected 1800 primary school children (6 to 14 years old). Data was collected through a parent-completed questionnaire created by the researchers. Enuresis was defined as intermittent incontinence while asleep at least once a month in the last year.

Results: Of the questionnaires distributed, 1596 (88.7%) were completed. Prevalence of enuresis was 11.3% (n = 181); enuresis occurred every night in 49.2%. On multivariate analysis, the predictors of enuresis were: younger age (adjusted OR = 0.87, 95% CI = 0.79-0.95), fourth or more born child (adjusted OR = 2.3, 95% = 1.4-3.5), middle family affluence (adjusted OR = 1.9, 95%CI = 1.3-3.2), family history of enuresis (adjusted OR = 4.5, 95%CI = 3.2-6.3), recurrent upper respiratory tract infections (adjusted OR = 1.8, 95%CI = 1.2-2.5), and initiation of toilet training after the age of 3 years (adjusted OR = 3.8, 95%CI = 2.5-5.7).

Conclusions: Early toilet training before 3 years of age and prevention of recurrent upper respiratory tract infections are modifiable factors which may help prevent enuresis. Parental awareness needs to be created.

UP.360

Prognostic Factors in Penile Cancer Patients with Negative Inguinal Lymph Nodes

Aita G[1], Zequi S[2], Guimarães G[2], Soares F[2], Werneck da Cunha I[2], Costa W[2], Vassalo J[3], Lopes A[2], Campos R[2], Sousa P[4]

[1]Hospital São Marcos, Teresina, Brazil; [2]AC Camargo Cancer Center, São Paulo, Brazil; [3]Universidade Estadual de Campinas, São Paulo, Brazil; [4]Fundação Municipal de Saúde, Teresina, Brazil

Introduction and Objectives: The inguinal lymph node (ILN) involvement is an unfavorable prognostic factor for survival in patients with squamous cell carcinoma of the penis (SCCP). However, the absence of lymph node metastasis is not an absolute guarantee of treatment success. Some of these patients develop locoregional recurrence or distant progression. The impact of the primary tumors features in the outcomes in the subjects with pathologically negative (pN0) and/or clinically negative (cN0) ILN is also unknown. This study evaluated clinicopathologic variables of a cohort of SCCP patients with pN0 and cN0 ILN and analyzed their respective prognostic impact factors for 10-year-overall survival (OS), cancer-specific survival (CSS) and disease-free survival (DFS).

Materials and Methods: The group was composed by 165 patients with pathologically negative ILN (pN0 subgroup) and 96 patients with clinically-negative nodes who were followed for 3 or more years with no recurrence (cN0 subgroup). A central pathologic review was carried out by a skilled pathologist. The clinicopathological variables were studied, in addition to the front pattern of invasion according to the modified criteria of Anneroth and Bryne. The Kaplan-Meier method was used to determine survival rates. Univariable and multivariable Cox regression models were fitted to test the predictors of survival rates.

Results: The 10-year-OS, CSS and DFS of cN0 and pN0 cohort were 59.7% vs. 52.7% (p = 0.0049), 96.4% vs. 87.1% (p = 0.001), and 95.2% vs. 86.0% (p = 0.025), respectively. In the multivariate analysis, the histologic grade was an independent predictor factor for 10-year-CCS and 10-year-DFS in the cN0 subgroup. The standard infiltrating invasion

was associated with a lower 10-year-CSS (p = 0.027) and lower 10-year-DFS (p = 0.019) in pN0 subgroup on univariate analysis.
Conclusion: The cN0 patients had better 10-year-OS, CSS and DFS than the pN0 ones. On univariated analysis, infiltrating pattern of invasion was associated with higher risk of tumor recurrence and cancer mortality in pN0 group. The presence of high-grade tumor was an independent unfavorable prognostic factor for DFS and CSS of patients with clinically negative ILN.

UP.361
The Role of Glans Resurfacing in the Treatment of Pre-Malignant Lesions of the Penis: An 11-Year Experience
Kaul A, Nair R, Ayres B, Watkin N
St George's Hospital, London, UK

Introduction and Objectives: Pre-malignant penile lesions (penile intraepithelial neoplasia, PeIN) can be difficult to differentiate from benign dermatoses or early invasive cancers. Centralisation of penile cancer services has increased our experience in managing such lesions and in selecting patients for glans resurfacing. We report on the accuracy of diagnosis and oncological outcome of total and partial glans resurfacing (TGR and PGR respectively) in treating these lesions.
Materials and Methods: From 2002-2013, 52 patients underwent glans resurfacing for suspected pre-malignant disease of the glans diagnosed by clinical examination or pre-operative biopsy. Definitive histology and margin status were obtained from a prospective database.
Results: Thirty three (63%) patients underwent TGR and 19 (37%) were treated with PGR. Thirty five (67%) had biopsies confirming PeIN and 17 (33%) had surgery based on clinical suspicion alone. Biopsy was accurate in 19 out of 35 patients (54%), missed invasive disease in 8 (23%) and 8 (23%) had benign disease on final histology. Clinical examination was accurate for PeIN in 12 out of 17 (70%), missed invasive disease in 2 (12%) and 3 (18%) had benign disease on final histology. There was no statistically significant difference in diagnostic accuracy between biopsy and clinical examination on chi-squared test (p=0.261). Positive margins were observed in 5 out of 33 (15%) and 8 out of 19 (42%) for TGR and PGR respectively. This difference was statistically significant (p=0.031).
Conclusion: Glans biopsies can lead to both under- and over-staging of suspected pre-malignant penile lesions and clinical suspicion is equivalent to biopsy in assessment. Margin positivity is significantly higher for PGR than TGR and this finding should be discussed in pre-operative counselling with patients.

UP.362
Morbidity of Inguinal Lymphadenectomy in Penile Cancer: Review of a Contemporary Series from a Single Institution
Castelo D, Tavares-Silva E, Marques V, Dinis P, Figueiredo A, Mota A
Dept. of Urology and Renal Transplantation, CHUC, Coimbra, Portugal

Introduction and Objectives: Squamous cell carcinoma of the penis has a tendency to metastasize through a lymphatic route, with a stepwise progression. This makes lymph node dissection a promising staging and therapeutic approach. Nonetheless, it is not routinely performed in all cases due to its high morbidity. Several modifications of the surgical technique have been described to improve its outcome. In this study the authors describe the contemporary morbidity associated with inguinal lymph node dissection at a single academic centre.
Materials and Methods: Retrospective review of intra and postoperative complications of lymph node dissections performed in the context of squamous cell carcinoma of the penis at a single academic centre between 2006 and September 2013.
Results: Of 36 patients treated for squamous cell carcinoma of the penis at our institution, 16 (44%) underwent lymph node dissection. A total of 27 inguinal regions were analyzed; including 3 superficial lymph node dissections (11%), 13 superficial and deep dissections (48%), 8 modified lymphadenectomies (30%) and 3 dynamic sentinel lymph node excisions (11%). No intraoperative complications were reported. Post-operative complications were reported in nine patients (56%), affecting 14 inguinal regions (52%). The most common complication was deep infection of the surgical wound, affecting 7 inguinal regions (26%) in 5 patients (31%). The second most common complication was skin necrosis, in 7 inguinal regions (26%) of 4 patients (25%); half of these patients also had wound infection. Of these, 3 patients required surgical debridement and myocutaneous flaps, and another one primary closure of the wound. The remainder were treated with medical therapy. Prolonged lymphorragy affected 5 inguinal regions (19%) in 3 patients (19%), having resolved with external drainage. One patient had a lymphocele requiring percutaneous drainage and another patient had chronic lymphedema of the scrotum requiring plastic surgery.
Conclusion: The incidence of postoperative complications remains high in contemporary series of inguinal lymph node dissections for the treatment of squamous cell carcinoma of the penis. Most of these complications require additional surgical and percutaneous procedures, which precludes inguinal lymphadenectomy from being recommended in all patients with penile cancer. If indicated, this technique should be centralized in high volume centres.

UP.363
The Management of Patients with Non-Visualisation following Dynamic Sentinel Lymph Node Biopsy for Penile Cancer
Rasool K[1], Saad Z[1], Shah P[1], Arya M[1], Minhas S[1], Malone P[2], Nigam R[3], Bomanji J[1], **Muneer A**[1]
[1]UCLH, London, UK; [2]Royal Birkshire Hospital, Reading, UK; [3]Royal Surrey Hospital, Guildford, UK

Introduction and Objectives: Lymphatic drainage from penile tumour occurs bilaterally to inguinal basins. In clinically impalpable inguinal nodes dynamic sentinel lymph node biopsy (DSNB) detects the first draining lymph node on each side. In some patients lymphoscintigraphy may only demonstrate the sentinel lymph node on one side. Our aim was to review the management, outcomes and identify risk factors in patients with unilateral non-visualisation following DSNB.
Materials and Methods: Patients diagnosed with penile cancer and clinically impalpable inguinal nodes (cN0) underwent DSNB following surgery for the primary tumour. DSNB was performed using ^{99m}Tc injected proximal to the original tumour site and planar lymphoscintigraphy was performed at 20 and 120 minutes. In cases of non-visualisation, either a further ^{99m}Tc dose was given with delayed images or patient underwent unilateral exploration of the visualised site with on table assessment of the non-visualised site for gamma probe activity before considering exploration. Where there was no exploration, patients either underwent further DSNB procedure at a later date with back up superficial modified lymphadenectomy (SML) or clinical surveillance.
Results: In a cohort of 116 patients, 16 (13.8%) were found to have unilateral non-visualisation. In this subset of patients, no exploration was performed due to lack of on table gamma probe activity. Six patients were offered a repeat DSNB procedure at later date with 5 of these had successful visualisation. A further 7 patients were offered SML due to high stage primary disease, all of which revealed no metastatic disease. Three patients (all with G2 disease) opted for clinical surveillance and remain disease free after mean of 11 months. In our study the median follow-up was 27 months.
Conclusion: Ideally patients undergoing DSNB with ≥ T1G2 disease should have bilateral inguinal visualisation. Repeat DSNB was successful in localising the lymph nodes in 83% of cases. Based on the original tumour histology patients with ≥T1G3 ± lymphovascular invasion were offered SMILD but still found to have pN0 disease. This suggests that DSNB should be offered as a repeat procedure following unilateral non-visualisation as it has lower morbidity and high probability to detect the sentinel lymph node.

UP.364

A Hypogastric Subcutaneous Approach for Endoscopic Inguinal Lymphadenectomy: Chinese Preliminary Experience

Liu C, Zheng S, Li H, Xu A, Chen B**, Wang Y**, Xu P

Southern Medical University, Guangzhou, China

Introduction and Objectives: To report the technique of the hypogastric subcutaneous approach for endoscopic inguinal lymphadenectomy and evaluate the simplicity, effectiveness and importance in treatment of patients with penile cancer.

Materials and Methods: From June 2011 to April 2013, 13 patients who have indications of inguinal lymph node cleaning underwent endoscopic inguinal lymphadenectomy via a hypogastric subcutaneous approach. The groin and pelvic lymph nodes were scanned by CT before operation. We used a minimally invasive approach with four trocars placed in the hypogastrium (respectively at the infraumbilical, both sides of the lateral rectus abdominis, anti McBurney point). Superficial inguinal group, Cloquet's group and deep inguinal group of lymph node and adipose tissue are dissected. Vacuum sealing drainage tube and compression bandaging inguinal indwelling are placed after surgery. Perioperative data and postoperative outcomes were systematically assessed.

Results: All laparoscopic procedures were successfully performed without conversion and intraoperative complications. Average (range) operative time for the endoscopic procedure was 116.7 (102–156) minutes, with estimated blood loss of approximately 92 (40–150) mL. A mean (range) of 11.7 (6-20) nodes were retrieved. The drainage tube was removed on average time of 5.2 days whereas the mean hospital stay was 5.8 days. Of the 13 patients, only 1 patient exhibited subcutaneous hydrops. No other serious long-term complications were observed. All patients were followed-up for more than 8 months with no significantly lower extremity swelling and movement disorder. One patient was found upper right lung metastasis 6 months after surgery.

Conclusion: Hypogastric subcutaneous approach for endoscopic inguinal lymphadenectomy is a safe and feasible technique that may further diminish the wound-related complications associated with the standard open procedure and that through leg video retrograde endoscopic inguinal lymphadenectomy. This approach could be performed during the dissection, which ensures the sweeping range with reducing surgical complications and improving the quality of life. However, its long-term therapeutic effects for cancer is still need large size with longer follow-up studies to be evaluated.

UP.365

Carbon Dioxide Laser Ablation of Penile Carcinoma-*in-situ*: Results from a Regional Penile Cancer Referral Centre in United Kingdom

Khan R, Hendry D

Gartnavel General Hospital, Glasgow, Scotland, UK

Introduction and Objectives: Penile carcinoma-*in-situ* (CIS) is treated using penis-preserving treatments like laser therapy [Carbon dioxide (CO2) laser and Nd:YAG laser], Mohs micrographic surgery, Photodynamic therapy and topical chemotherapy (5 fluorouracil). Clinical guidelines acknowledge the lack of scientifically rigorous comparative data for above modalities in published literature and therefore recommend that treatment should be tailored according to location and size of lesion and experience of treating Urologist. CO2 laser is the treatment modality of choice for penile CIS in our centre. We report the results of all histologically proven penile CIS cases treated with this modality in our unit over a 7-year period (2007-2014).

Materials and Methods: We performed a retrospective review of all patients identified from the theatre procedure book for CO2 laser ablation for penile CIS from 2007 to 2014. Case notes were reviewed to assess the oncological outcome.

Results: A total of 52 CO2 laser ablation procedures were identified. These patients were treated between July 2007 and March 2014. Twelve were excluded from analysis due to absence of histological evidence of CIS at the time of treatment, inadequate follow-up data or no follow-up since the treatment. Forty CO2 laser ablation procedures, done in 38 patients, with histologically proven CIS were analysed. Average age at the time of treatment was 56 years (Range 21-88). Average follow-up was 27 months (Range 1-70). Thirty five treatments (87.5%) showed no post procedure recurrence whereas 5 treatments in 4 patients (12.5%) showed recurrence of tumour. One patient developed recurrence on two occasions and both times he was treated with further CO2 laser ablation. Two patients were treated with Glans resurfacing and split thickness skin graft. One patient (2.5%) had invasive disease on biopsy of recurrence which was treated by primary excision. No patient developed metastatic disease related to penile cancer.

Conclusion: We have achieved excellent oncological control with low recurrence rate of 12.5% using this treatment modality. Our recurrence rate is better than other treatment modalities reported in other global contemporary series. To our knowledge, our cohort is one of the largest in the literature for penile CIS treatment using CO2 laser ablation.

UP.366

Comparison of Robot-Assisted and Laparoscopic Pelvic Lymphadenectomy in Penile Cancer Patients with Stage N2/N3 Inguinal Disease

Blick C, Taylor H, Buxton J, Nigam R, Minhas S, Kelly J**, Muneer A**

Dept. of Urology, University College Hospital, London, UK

Introduction and Objectives: Favourable outcomes using robot assisted pelvic lymphadenectomy (RAPL) have already been demonstrated in bladder and prostate cancer. Current EAU guidelines recommend that penile cancer patients with more than one metastatic inguinal lymph node found at radical inguinal lymphadenectomy should undergo an ipsilateral pelvic lymphadenectomy. We report a single centre experience of RAPL in penile cancer patients with N2 and N3 disease and compare this to penile cancer patients undergoing laparoscopic pelvic lymphadenectomy (LAPL).

Materials and Methods: A total of 6 patients (mean age 61) diagnosed with penile cancer underwent RAPL and a further 6 patients (mean age 61) underwent LAPL. All of the patients were diagnosed with at least N2 inguinal disease following a radical inguinal lymphadenectomy. The pelvic lymph node dissection was performed at a separate sitting on the ipsilateral side to the N2/N3 disease to the level of the common iliac bifurcation. Nodal yield, operation time and hospital stay was compared between the two procedures.

Results: RAPL and LAPL were each performed on 9 pelvic lymph node chains and achieved a mean nodal yield (range) of 4.6 (1-10) and 3.1 (0-9) nodes respectively (p=0.33). Mean operation time (range) was 180 (140-225) minutes for RAPL and 144 (55-235) minutes for LAPL (p=0.26), while mean length of hospital admission (range) was 1.5 (1-2) days and 5.7 (2-11) days respectively (p=0.016). Post-operative complications following RAPL were limited to a port-site hernia (n=1) and wound infection (n=1) both of which resolved on follow-up; after the laparoscopic procedure two patients developed a groin lymphocele.

Conclusion: Early outcomes from this series indicate that RAPL is safe and compares favourably with laparoscopic pelvic lymphadenectomy in patients with penile cancer. Initial results suggest a shorter convalescence period and superior nodal yield. RAPL is therefore a feasible option for penile cancer patients. Simultaneous inguinal lymphadenectomy with on table frozen section to confirm >N2 disease proceeding to RAPL may be an option for the management of penile cancer patients.

UP.367

Pre-Operative Detection of Regional Lymph Nodes in Penile Cancer Using Hybrid SPECT/CT Imaging in Dynamic Sentinel Lymph Node Biopsy (DSLNB)

Saad Z, Omorphos S, Bomanji J**, Muneer A**
UCLH, London, UK

Introduction and Objectives: Dynamic Sentinel Lymph Node Biopsy (DSLNB) for penile cancer patients with clinically impalpable inguinal nodes currently uses 2-Dimensional planar lymphoscintigraphy at most centres. Metastatic spread to the lymphnodes has important prognostic value. Aim of this study was to investigate the role of SPECT/CT following 2-Dimensional planar lymphoscintigraphy (dynamic & static) in the detection and localisation of the sentinel lymph nodes in groin.
Materials and Methods: A qualitative (visual) review was performed on planar followed by SPECT/CT lymphoscintigraphy in consecutive 84 patients (age range 28-68 years) who underwent injection of ^{99m}Tc-Nanocolloid with 20mins of dynamic scanning. Static images were obtained at 90mins followed by SPECT/CT imaging. The lymph-nodes in each groin using planar lymphoscintigraphy were compared to those detected on SPECT/CT.
Results: A total of 272 nodes were identified using planar-scintigraphy whereas SPECT/CT identified 325 nodes. Of the additional 53 lymph-nodes detected by SPECT/CT, 28 were new nodes (left groin-22, right groin-5 and 1 at an unusual location in the upper thigh) while remaining 25 were found to not be nodes on SPECT/CT (7 in-transit radiotracer in lymphatic channels, 6 scatter mis-registration and 12 contaminations). Due to SPECT/CT identification, unnecessary groin explorations for these (25) false positive nodes was prevented. Moreover, SPECT/CT demonstrated precise localization of regional draining basin for 43 nodes (Inguinal 35, Pelvic 8), which were difficult to distinguish on 2-Dimensional planar scintigraphy.
Conclusions: The addition of SPECT/CT improved detection rate of true radiotracer avid lymph-nodes and delineated their precise (3-Dimensional) anatomical localization in draining basins.

UP.369

Robot Assisted Pelvic Lymph Node Dissection: Early Experiences from a Tertiary Penile Cancer Service

Rudd I, Nair R, Bolgeri M, Kaul A, Issa R, Perry M, Sharma D, Anderson C, Watkin N, Ayres B
St George's Healthcare NHS Trust, London, UK

Introduction and Objectives: Pelvic lymph node dissection is recommended for penile squamous cell carcinoma in the presence of two or more positive inguinal nodes or any nodes showing extracapsular extension. Robotic pelvic surgery has recognised advantages over open surgery in terms of reduced blood loss, pain and shorter hospital stay. Following the introduction of transperitoneal robot assisted pelvic lymph node dissection (RA-PLND) at our tertiary penile cancer service, we compared its safety and effectiveness against our previous open series (O-PLND).
Materials and Methods: Twenty two consecutive RA-PLND patients (median age: 59 years, range 48-77) were compared with 30 consecutive O-PLND patients (median age: 61 years, range 32-83). Prospectively collected data on lymph node yields, blood loss, transfusion requirements, length of stay and complications were analysed.
Results: We performed 10 unilateral and 12 bilateral RA-PLNDs and 8 unilateral and 22 bilateral O-PLNDs. A median of 7 nodes (range 2-19) per side were removed robotically. This compares to 5 (range 0-19) with the open technique ($p<0.01$). Forty one percent of RA-PLND patients had positive nodes compared to 50% from the O-PLND group. Patients undergoing RA-PLND had a median recorded blood loss of 10mls (0-200mls), whereas for O-PLND it was 100mls (50-800mls) ($p<0.01$). One patient in the O-PLND group required blood transfusion. The median post-operative stay for RA-PLND patients was 1 day (1-10), compared to 4.5 days (2-19) for O-PLND ($p<0.01$). In the RA-PLND group there were 3 Clavien II (1 lymphocoele, 1 DVT and 1 PE) and 1 Clavien III complications (a pelvic collection requiring percutaneous drainage). In the O-PLND group there were 13 Clavien II (4 wound infections or dehiscences, 4 cases of lymphoedema, 3 lymphocoeles, and 2 haematomas) and 3 Clavien III (2 pelvic collections requiring percutaneous drainage and 1 wound infection requiring surgical debridement). Fifty percent of patients in the O-PLND group had at least one complication as opposed to only 14% in the RA-PLND group. One RA-PLND was converted to open.
Conclusion: In our initial experience RA-PLND compares favourably with O-PLND. We have seen significant improvements in length of hospital stay, blood loss and lymph node yields with a lower complication rate.

UP.370

Glans Resurfacing as the Treatment for Invasive Penile Cancer

Acimovic M[1,2], Rafailovic D[1], Radovanovic M[1], Pejcic T[1], Dzamic Z[1,2], Hadzi-Djokic J[2,3]
[1]Clinic of Urology, Clinical Center of Serbia, Belgrade, Serbia; [2]School of Medicine, University of Belgrade, Belgrade, Serbia; [3]Serbian Academy of Sciences and Arts, Belgrade, Serbia

Introduction and Objectives: Phallic sparing surgery for penile cancer can reduce psychosexual morbidity associated with traditional operations. Our objective is to report our experience with organ preserving surgery as method for treatment of penile cancer.
Materials and Methods: Between February 2005 and March 2012, 16 patients (mean age 57 years) underwent phallic sparing surgery for penile cancer. All patients had squamous cell carcinoma (SSC) limited to the glans penis (T1 and T2 tumors confined to the corpus spongiosus). Penile preserving surgery included glansectomy and reconstruction with a split-thickness skin graft (SSG) harvested from inner side of upper arm. Multiple frozen sections of the peripheral margins were obtained, and all of them were free of tumor invasion. All patients were regularly followed-up, every 3 months for the 2 years, and every 6 months thereafter. Six weeks after the surgery, all patients were asked about their postoperative cosmetic outcome and erectile function.
Results: Final histology showed that 6 (37.5%) patients had T1 disease, and 10 (62.5%) had T2 disease. The mean follow-up was 36 months (range 12-80). There were no postoperative complications and local recurrence. One patient had inguinal lymph node metastasis two years after glans resurfation, and he had undergone inguinal lymphadenectomy. All patients who had sexual ability before treatment, maintained sexual function 6-12 weeks after the surgery. Patients assessed cosmetic outcome as excellent in 13/16 (81.25%) cases and 3 patients were moderately satisfied. None of the patients had meatal stenosis or graft rejection.
Conclusion: Penile sparing surgery is oncologically safe and effective method for patients with squamous cell carcinoma of glans. Using this technique patients can preserve quality of life, sexual and urinary function of the penis.

UP.371

Surgery in Peyronie's Disease: Our Experiences with Tunica Plication, Plaque Incision and Grafting with Gore-Tex

Passavanti G[1], Bragaglia A[1], Costantini F[1], Nucciotti R[1], Pizzuti V[1], Aloisi A[2]
[1]Dept. of Urology, Misericordia Hospital, Grosseto, Italy; [2]Dept. of Physiology, University of Siena, Siena, Italy

Introduction and Objectives: Peyronie's disease is a relatively common condition, with an incidence of 3-9%. It is often associated with diabetes and erectile dysfunction (ED). This condition causes a penile deformity that can affect sexual penetration and lead to psychological disorders because of the difficulty in accepting the situation.
Materials and Methods: We treated 45 patients for recurvatum penis secondary to Peyronie's disease. The clinical examination involved an accurate medical history, a physical examination to identify the plaque, ultrasonography to detect calcified plaque, and a photograph of the erect

penis to document the recurvatum and sand-glass deformity. In the case of ED, we administered the IIEF-5 and performed intracavernous injection of PGE1; in patients eligible for grafting, we also carried out a dynamic echocolour Doppler of the corpus cavernosum. Penis length was between 11.5 and 14.5 cm (13.25 ± 1 cm). In 39 patients with moderate curvature (45-60°) we carried out tunica plication and in 6 cases with curvature >60° and with ED we performed plaque incision with grafting strips of polyester fluoropolymer (Gore-Tex).

Results: Correction of the recurvatum was good in all cases. In patients undergoing tunica plication, the shortening of the corpus cavernosum ranged from 0.5 cm (1 case) to 2 cm. Patients with ED, particularly those who received a synthetic graft, continued to take iPDE5, with good erections. The graft has never induced inflammation, scar retractions or pseudo-aneurysm expansion, even in the medium term (5 years). In all cases, we performed an extended dissection of the dorsal plexus and urethra.

Conclusions: A thorough diagnostic study of patients with proper indications for surgical treatment, a careful and detailed evaluation of the patient's expectations and extensive surgical dissection of the corpora cavernosa during surgery can provide good surgical results for both tunica plication and the polyester fluoropolymer graft. In our experience, this graft seems free of the complications thus far attributed to synthetic grafts.

UP.372

Which Factors Effect the Pain Perception during Cystoscopy under Local Anaesthesia?

Yilmaz O, Okcelik S, Ates F, Malkoc E**, Soydan H**, Senkul T
Dept. of Urology, GATA Haydarpasa Training Hospital, Uskudar, Istanbul

Introduction and Objectives: To assess the factors that affect the pain perception during cystoscopy under local anaesthesia.

Materials and Methods: In our survey, male patients underwent diagnostic cystoscopy in urology department were determined for pain perception during diagnostic cystoscopy under local anaesthesia between June and December 2013. The patients who needed additional procedures like J-J catheter extraction, internal urethrotomy, cold cup biopsy and fulguration were excluded from the survey. Cystoscopy was performed after administering 2% lidocain gel to the urethra for local anaesthesia. For panendoscopy, 20 Fr rigit cystoscope was used. Anterior urethra, prostatic urethra, prostate and intravesical area were evaluated. We divided the patients in some groups as listening to classical music during cystoscopy procedure or not, older or younger than 65 years, first or recurrent cystoscopy, with and without BPH. The pain level while procedure was assessed by ten points according to VAS pain score system. Statistical differences between the groups were assessed with SPSS 16.0. The p value for statistical significance was <0.05.

Results: A total of 56 male patients underwent diagnostic cystoscopy under local anaesthesia between June 2013 and December 2013 in our department. Mean age was 66.6. Mean VAS score was 1.25 during entry and 1.91 during the cystoscopy procedure. These pain levels were acceptable for a medical diagnosis and there were not any patients wanted interruption of procedure for pain. Listening classical music did not affect the pain scores in any step of the procedure (p=0.174, p=0.567). See Table 1. There was not any difference between the old and young patients for pain perception (p=0.761 p=0.521). See Table 2. The enlargement of prostate did not effect the pain scores (p=0.573 p=0.251). See Table 3. Cystoscopy count was found as an independent factor for pain in our patients according to pearson correlation (p=0.0021). See Table 4. The VAS scores were higher at first cystoscopies than recurrent ones. The reason might be orientation of patients to cystoscopy.

Conclusions: According to our study diagnostic cystoscopy can be performed under intraurethral topical anaesthesia. Only cystoscopy count affects the VAS scores. This study may show that the pain perception depends on becoming accustomed.

UP.373

A Novel Penoplasty Technique after Removal of Severe Foreign Body Granuloma: Modified Bilateral Scrotal Flaps

Jung G, Park S, Seo J, Ha S
Smile Jung's Urology Clinic, Busan, South Korea

Introduction and Objectives: Although worldwide incidence is not well known, foreign-body injection is often attempted in order to augment the penis. Definitive treatment of severe penile

UP.372, Table 1.

Music		N	Mean	P
Entry	Music (-)	28	1.5357	0.174
	Music (+)	28	0.9643	
During	Music (-)	28	2.0714	0.567
	Music (+)	28	1.7500	

UP.372, Table 2.

	Age	N	Mean	P
Entry	<65	21	1.3333	0.761
	>64	35	1.2000	
During	<65	21	2.1429	0.521
	>64	35	1.7714	

UP.372, Table 3.

	BPH	N	Mean	p
Entry	BPH	21	1.1429	0.573
	No BPH	33	1.3939	
During	BPH	21	1.5714	0.251
	No BPH	33	2.2424	

UP.372, Table 4.

		Entry	Cystoscopy count
Entry	Pearson Correlation	1	-0.308*
	Sig. (2-tailed)		0.021
	N	56	56
During	Pearson Correlation	-0.308*	1
	Sig. (2-tailed)	0.021	
	N	56	56

foreign body granuloma includes complete removal of the involved tissue and repair of the denuded penis. We tried a new technique comprised of modified bilateral scrotal flaps to provide reliable and stable coverage in such cases.
Materials and Methods: Eighty eight patients with penile foreign body granuloma underwent reconstructive surgery by authors from November 2001 to December 2012. Most of them showed severe deformity from corona of penis to penoscrotal junction due to foreign-body granuloma. Necrosis and ulceration of penile skin were seen in 18 patients. Foreign-body granuloma partly invaded the scrotum in 7 and the infrapubic area in 20 patients. The average age of the patients was 36 years. Complete removal of involved skin and subcutaneous tissue was performed under spinal anesthesia. After the preoperative design, flap elevation started with a midscrotal incision. The scrotal skin flap, including Dartos fascia, was elevated from the underlying tunica vaginalis using a blunt finger dissection. Finally, the inferior sides of flaps were incised and the bilateral scrotal flaps were completely elevated. The upper angles of each side of scrotal flaps were sutured together and fixed at middorsal portion of the corona. The lower angles of flaps were also sutured at the frenulum of penis. Two large Z-plasties were inserted into the dorsal and ventral suture lines. After the completion of penile resurfacing, the remaining scrotal skin was advanced forward and sutured.
Results: All the flaps survived completely. Delayed wound healing was seen in 14 patients and the wound were healed with conventional treatments, except in 6 patients who underwent surgical intervention. Sixteen patients complained of decreased scrotal size. Eight patients showed mild scar contracture at the penoscrotal junction. The part of the scrotal hair-bearing area was moved to the penile shaft. After 6-month recovery period, satisfactory sexual activity was possible for all patients.
Conclusion: In our experience, penile resurfacing with modified bilateral scrotal flaps is an effective and reliable method for repair of completely denuded penis.

UP.374
Changes in Haemodynamics in Testicular Artery after Varicocelectomy: A Long-Term Follow-Up
Shimpi R
Div. of Urology, Uro-Andrology Clinic, Pune, India

Introduction and Objectives: Varicocele is an abnormal dilatation and tortuisity of the Pampiniform plexus of veins and can cause detrimental effects on Spermatogenesis in the reproductive age and can reduce the size of the testes.
Materials and Methods: Sixty patients in the age group of 22-30 (mean 27 years) treated between 2006 and 2010 are randomized in two groups. Group A (n=45) had Grade II-III varicocele with strain pattern seen on spermatogram and the size of the testicle (left side) was smaller by a mean of 2.4 ml than the right side. All these patients underwent microsurgical varicocelectomy on both the sides. The control Group B also had varicocele Grade II-III with strain pattern seen on the spermatogram. All the patients of Groups A and B underwent Doppler study for the measurement of PSV, EDV and RI for the Capsular and Centripetal Arteries. The Colour Doppler of the arterial flow and measurement of the size of the testicle was repeated at 3, 6, 9, 18 months.
Results: At the time of surgery in Group A, the RI of the Capsular Artery was 0.62 ± 0.03 and that of Centripetal Artery was 0.58 ± 0.03. At 1 month, RI of Capsular Artery was 0.66 ± 0.04 while that of the Centripetal Artery was 0.63 ± 0.03, whereas there were minimum changes in the RI of the Capsular and Centripetal Arteries of Group B.
Conclusions: Because of venous hypertension in the Pampiniform plexus, there is a significant drop in testicular arterial perfusion. The Operative Treatment significantly improves the testicular arterial flow, and hence, possibly improves the spermatogenesis. The RI in the Centripetal Artery is the main haemodynamic indicator that correlates with the improvement in the sperm quality.

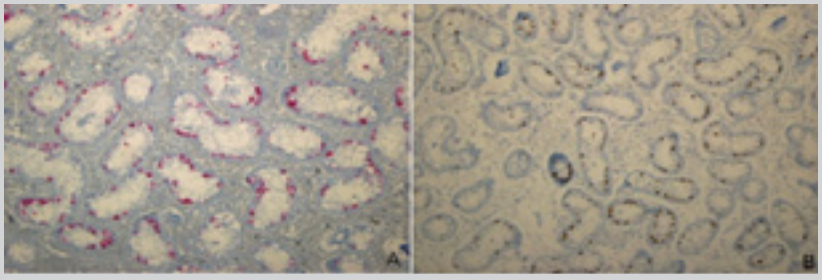
UP.375
Intratubular Germ Cell Neoplasia in Postpubertal Cryptorchid Testis
Jung J[1], Eom M[2], **Ryang S**[1], Kang T[1], Song J[1], Chung H[1], Kim K[1], Chae Y[3]
[1]Dept. of Urology, Yonsei University Wonju College of Medicine, Wonju, South Korea; [2]Dept. of Pathology, Yonsei University Wonju College of Medicine, Wonju, South Korea; [3]Dept. of Urology, Cheongju St. Mary's Hospital, Cheongju, South Korea

Introduction and Objectives: It is well known that testicular germ cell tumors arise with increased frequency in patients with cryptorchidism. Skakkebaek reported that intratubular germ cell neoplasia (ITGCN) is a precursor lesion to testicular germ cell tumor. Approximately 50% of patients with ITGCN will develop an invasive of testicular germ cell tumors within 5 years. Therefore, we evaluated that the incidence of ITGCN in postpubertal cryptorchidism.
Materials and Methods: Between January 2002 and August 2012, orchiectomy specimens from 34 postpubertal patients (aged 12 or over) with cryptorchid testis were reviewed. The specimens were evaluated for ITGCN using immunohistochemical stains of placental-like alkaline phosphatase and Oct 3/4, since it is hard to recognize ITGCN with routine H&E stain. Additionally, the degree of spermatogenesis was assessed using the Johnson's criteria.
Results: Mean age was 35 years (range 17 to 74) at surgery. All patients were diagnosed as unilateral inguinal cryptorchidism. After counseling the cancer risk and fertility potential of the cryptorchid testis, we performed the preventive orchiectomy. One patient (2.9%) of 20 years old had ITGCN in surgical specimen with all positive markers (Figure 1). Histological assessment of spermatogenesis showed that mean Johnson score was 3.38 (range 1 to 9).
Conclusion: Considering the risk of malignancy and low spermatogenesis, we should perform immunohistochemical stains and discuss preventative orchiectomy for the postpubertal cryptorchidism.

UP.376
Short-Term Results of Permanent Uventa Urethral Stent in the Treatment of Recurrent Bulbar Urethral Strictures
Cho D, Park M, Yeo J
Seoul Paik Hospital, Inje University, Seoul, South Korea

Introduction and Objectives: To evaluate the outcomes of permanent Uventa urethral stent in the treatment of recurrent bulbar urethral stricture.
Materials and Methods: Seven patients who underwent permanent Uventa urethral stent implantation due to recurrent bulbar urethral stricture following previous unsuccessful surgical procedure from 2010 to 2013 were included in the study.

UP.375, Figure 1. The germ cells are positive with immunohistochemical staining of PLAP (A) and Oct 3/4 (B)



Results: The overall success rate was 85.7% at the end of the 6 months. There was discomfort in implantation area in two patients about 1 month following the procedure. These patients were treated with alpha-blocker and anti-inflammatory drugs. Stone formation was not observed at the urethral stent implantation area. Post-void dripping has been observed in one patient up to the postoperative 3rd month. Partial stent migration was observed in one patient. None of the patients experienced pain during erection.
Conclusion: Uventa urethral stent is a minimal invasive surgical procedure which can be safely and effectively used in patients with recurrent urethral stricture.

UP.377
Nesbitt's Procedure for Penile Curvature: An 8-Year Experience at a Single Institution
Abusanad O[1], Omorphos S[2], Subramanian K[3]
[1]St Helens & Knowsley NHS Trust, St-Helens, UK; [2]St-James University Hospital, Leeds, UK; [3]Pinderfields General Hospital, Wakefield, UK

Introduction and Objectives: Retrospective evaluation of our results after surgical reconstruction with the Nesbitt's procedure, for congenital or acquired penile deviation, with regard to improvement in: (a) penile pain, (b) penile curvature, (c) sex life postoperatively.
Materials and Methods: Thirty six patients with stable disease for more than 1 year and persistent sexually disabling penile curvature of more than 30° underwent Nesbitt's procedure between February 2004 and January 2012 in our institution. Aetiology of penile deviation, preoperative clinical findings, surgical outcomes following straightening the penis and patient satisfaction were evaluated. Follow-up included clinical examination, including self-photography on erection (in some cases) and clinical assessment of erectile dysfunction. Mean follow-up period was 6 months following the operation (3-16 months).
Results: Thirty five patients had Peyronie's disease and 1 patient's curvature was congenital. Mean age was 55 years (25-72 years). Preoperative mean angulation of the penis was 45°. Overall, 31 patients were completely satisfied with the surgical correction, 4 patients were partly satisfied and 1 patient reported no satisfaction because of subsequent development of 10° lateral curvature on the contralateral side postoperatively. One patient developed wound infection but otherwise there were no major complications. In the follow-up period all patients were able to achieve rigid erection and penetration, but 4 elderly patients required PDE5 inhibitors. Only 1 patient complained of mild penile pain on erection postoperatively but was able to resume his sex-life.
Conclusion: The Nesbitt's technique is associated with low morbidity and can provide satisfactory results for mild and moderate penile curvature. Careful patient selection has a major impact on the outcome.

UP.378
A Comparison of Surgical Approaches for the Nesbit Procedure
Younis A, Dorkin T
Newcastle Urology, The Freeman Hospital, Newcastle upon Tyne, UK

Introduction and Objectives: Many studies have examined various surgical techniques to manage Peyronies disease (PD) with the Nesbit procedure being the most common option. Surgical access can be achieved either by circumcision and degloving or by a ventral midline incision (VMI). However, there is a paucity of data to favour one over another. In this case series, we aim to evaluate post-operative complications and patient satisfaction rates following Nesbit procedure for PD and to assess whether there is a difference in outcome between VMI and circumcision for surgical approach.
Materials and Methods: A retrospective review of notes of patients with PD who had a Nesbit procedure was performed. Patients were identified from a log of procedures performed within the department. Data was collected from electronic records and/or case notes.
Results: A total of 133 patients underwent surgery for PD between March 2006 and August 2013. Patients excluded were those who had plaque excision or if notes were not retrievable. The data for 110 patients was collected. The median age of patients was 56 (range 21-73) with a median preoperative angle of penile curvature of 70 degrees (range 20-120); the majority had dorsal curvature. A VMI was employed in 87 patients (79%) and 20 were circumcised (18%), 6 of whom were previously circumcised. Seventy five percent of those with VMIs were discharged the same day compared to 55% of the circumcised patients ($p = 0.095$). In the VMI group, 3 patients (3.4%) had post-operative wound infections and 6 (7%) developed phimosis, requiring circumcision. None within the circumcision group had a wound infection; however, pain and penile distortion was reported in 2 patients. The subjective satisfaction rates in the 2 groups were similar (75% circumcision vs. 68% VMI; $p = 0.595$).
Conclusion: VMI and circumcision are both valid surgical approaches for a Nesbit procedure. The results will help inform patient counselling about both approaches, particularly for men keen to preserve their prepuce. Patients must be made aware there is a minor risk of later circumcision if VMI is selected.

UP.379
Histological and Microbiological Characterization of Idiopathic Bulbar Urethral Strictures
Kogan M, Mitusov V, Naboka J, Pasechnik D**, Belousov I**, Naranov S
Rostov State Medical University, Rostov-on-Don, Russia

Introduction and Objectives: The etiology of idiopathic urethral stricture (IUS) is currently unclear. Our aim was to characterize histological and microbiological make up of IUS tissues.
Materials and Methods: Twelve patients were identified with idiopathic stricture disease and no prior manipulation. Patients age range from 21-40 years and disease duration was > 5 years in all. Among all, 66.7% of patients had stricture < 1cm, remaining 33.3% of patients had stricture of 1-2 cm in length. All patients underwent an "end to end" anastomotic repair with excision of the strictured segment. Histologic evaluation was done with H&E and picrofuchsin by Van Gieson stains. Bacteriological examination of urethral tissue was performed on an extended set of culture media for aerobic and anaerobic bacteria.
Results: The spongy body of the urethra demonstrated squamous metaplasia of the urothelium with weak keratinization in all cases. Additionally, the IUS zone showed signs of chronic inflammation with localized inflammatory infiltrate composed of lymphocytes, plasma cells, histiocytes and occasional neutrophils, mainly around the blood vessels. The development of small-cell coarse fiber connective tissue with focal microvascular proliferation was suggested as well. This process also extended into the periurethral tissue. The number of arterial and venous vessels in the urethral bulb was significantly reduced compared to the normal tissue. Only 8.3% of the samples showed no bacterial growth. Peptostreptococcus sp were isolated in 33.3% of the cases. Remaining 58.3% of the cases grew the following organisms Staphylococcus sp., Enteroccocus sp., Propionibacterium sp., Peptostreptococcus sp., Bacteroides sp.
Conclusion: In all cases, bulbar ISU was characterized by morphological signs of chronic inflammation, despite the absence of a history of inflammatory causative factors. In majority of the cases presence of aerobic or anaerobic organisms was identified. The role of bacterial presence in the development of the inflammation of the urethra requires further study. Coarse-fibered connective tissue develops not only in the lamina propria and urethral spongiosum, but also in the adjacent periurethral tissues. Given these findings, it is reasonable to propose that some strictures could be inflammatory and reactive in nature.

UP.380

Buccal Mucosa Graft Urethroplasty for Panurethral Disease Repair

Acimovic M[1,2], Radovanovic M[1], Milosavljevic M[3], Rafailovic D[1], Pejcic T[1], Dzamic Z[1,2], Hadzi-Djokic J[2,4]

[1]Clinic of Urology, Clinical Center of Serbia, Belgrade, Serbia; [2]School of Medicine, University of Belgrade, Belgrade, Serbia; [3]Dept. of Urology, University Children's Hospital, Belgrade, Serbia; [4]Serbian Academy of Sciences and Arts, Belgrade, Serbia

Introduction and Objectives: Panurethral disease (PUD) involving the penile and bulbar urethra, represents increasingly common urological problem. Our objectives are to estimate the principal causes of PUD and report the medium-term results of PUD repair using the buccal mucosa grafts (BMG).

Materials and Methods: Between January 2009 and June 2013, a BMG repair was used in 37 patients with pendular and bulbar strictures, with overall length >8cm. The average patients age was 46±7.56 years (range 21-64). All patients underwent abdominal ultrasonography, the measurement of the postvoid residual urine (PVR), uroflowmetry, retrograde urethrography, voiding cystourethrography and urethroscopy pre and postoperatively. The average length of urethral strictures was 11.2±0.9cm (range 8.1–17.5). A successful outcome was defined as normal voiding (Qmax >18ml/s) with no stricture on the voiding cystourethrogram and no need for subsequent instrumentation. 26 underwent one-stage surgery, 11 patients underwent two-stage surgery. In 32 patients buccal mucosa onlay graft technique was used, in 5 patients, inlay-onlay sandwich technique. The mean follow-up was 22.3±3.6 months (range: 4-36).

Results: The most common causes of the PUD were balanitis xerotica obliterans (BXO) in 21 cases (56.7%), trauma in 10 cases (27%), urethral infection and idiopathic causes in 6 cases (16.3%).The average operative time was 143±14.4minutes. The procedure was successful in 28 patients (75.67%), while 9 patients (24.33%) developed recurrent stenosis. Five patients were candidates for repeated urethral dilatations, while four patients underwent urethrotomy. Seventeen patients underwent one-stage surgery for the PUD caused by BXO with success of 94%. Four patients with BXO underwent two-stage surgery with success of 25%. The mean maximum flow rate increased from 6.5±2.5mL/s to 19±6mL/s, postoperatively. The mean postoperative PVR decreased from 58.7±39.7mL to 41±23mL. There were no patients with erectile dysfunction or urinary incontinence after the procedure.

Conclusion: Our results show that in patients with panurethral strictures, whose overall length exceeds more than 8cm in total, urethroplasty using BMG is feasible, with very encouraging medium-term results. This type of reconstruction could be considered as the standard of care for both pendular and bulbar strictures >8cm in total.

UP.381

Defining Failure of Erectile Dysfunction Therapy in Primary Care?

Jones C, Fraser M

Glasgow Royal Infirmary, Glasgow, Scotland, UK

Introduction and Objectives: Recent consensus statements and guidelines highlight the importance of cardiovascular risk assessment in men presenting with ED, and place the primary role of management of this condition with general practitioners. Following recent redesign of local referral pathways in male sexual dysfunction we aimed to define the extent to which published guidance is reflected in the management of ED locally and in the referral pattern of men deemed to have failed initial therapy in primary care.

Materials and Methods: We reviewed the records of patients (total=75 men; mean age 54.6 years) referred as "failed initial therapy" to our service in 2013. The following characteristics were analysed: Co-morbid conditions (patients post-radical prostatectomy excluded), Individual PDE5 inhibitor regimens, Adherence to guidelines in terms of investigations/assessment undertaken, Evidence of lifestyle modifications.

Results: In this treatment failure group, 46 men (61%) were diabetic with a significantly higher burden of cardiovascular morbidities compared to the non-diabetic patients. Less than half (48%) had documented lifestyle advice given but blood glucose and lipids were universally checked. A total of 26 men (35%) had serum testosterone checked pre-referral. In this series, 22% had biochemical hypogonadism. PDE5 inhibitors were unsurprisingly widely used as primary treatment, with 95% exposed to treatment; 65% having had an unsatisfactory outcome with their first PDE5 subsequently were treated with an alternative. 15% of men had no upward dose titration. Sildenafil was the first choice PDE5 inhibitor in 90% of cases, and all except one patient received on demand treatment. No patients had non-oral therapies instituted in primary care.

Conclusion: Our treatment failure population exhibits a high proportion of diabetic men with co-morbid cardiovascular conditions and a significant number with low testosterone. Such patients are at high risk of PDE5 non-response. In general terms drug treatment of ED is well managed in primary care with choice of agent and dose scheduling broadly meeting available guidance. Further reinforcement and education is necessary to ensure more complete cardiovascular risk stratification and lifestyle modification pre-referral.

UP.382

Prostate Cancer (PC): Management of 669 Consecutive Cases in Black Ghanaians

Yeboah E[1,2], Hsing A[3], Biritwum R[4], Tettey Y[5], Mante S[6], Mensah J[7], Kyei M[7], Yarney J[8], Vanderpuye V[8], Beecham K[8], Asante K[1], Ampadu K[1], Adusei B[1], Gepi-Attee S[1], Klufio G[1], Lamptey E[1], Owoo C[1]

[1]Dept. of Surgery, University of Ghana Medical School and Korle Bu Teaching Hospital, Accra, Ghana; [2]Nyaho Medical Centre, Accra, Ghana; [3]Cancer Prevention Institute of California, CPIC, Fremont, USA; [4]Dept. of Community Health, University of Ghana Medical School, Accra, Ghana; [5]Dept. of Pathology, University of Ghana Medical School, Accra, Ghana; [6]37 Military Hospital, Accra, Ghana; [7]Dept. of Surgery, Korle Bu Teaching Hospital, Accra, Ghana; [8]Dept. of Radio-Oncology, Korle Bu Teaching Hospital, Accra, Ghana

Introduction and Objectives: Study clinical incidence, risk factors of PC, TNM staged their management outcomes.

Materials and Methods: Study of PC managed in Accra 2004–2011. Diagnosis by history, ↑PSA abnormal DRE histologically confirmed Gleason Scored (GS), TNM staged and managed (Rx) as follows, organ confined Radical prostatectomy (RP), brachytherapy (BRCHY), external beam radiotherapy (EBRT), hormonal/chemotherapy (HCh) or surveillance. T3–4 M0 by HCh ± BRCHY/EBRT. Metastatic T1-4 M1 Rx HCh. Analysis social sciences package.

Results: A total of 669 cases, median age 70 years, median GS ≥7. Organ confined 415(62%), T3–T4 M0 167 (25%), Metastatic cases 87 (13%). Follow-up 1-7 years, median 18 months.

A. ORGAN CONFINED n= 415 – Asymptomatic 80% management:
   RP n =92. Median GS ≥7 Prior median (PM) PSA 16.1ng/ml, post (PSM) PSA 0.23ng/ml. Mortality 2%, Complications 3–22%.
   BRACHYTHERAPY n = 70. PM PSA 14.6ng/ml, PSM PSA 0.59ng/ml, Mortality 1.4%, Complications 3–10%
   EBRT n=155. PM PSA 15.7ng/ml, PSM PSA 0.54 ng/ml. Mortality 3%, Complications 2–6%
   HCh n= 98. PM PSA 13.8ng/ml, PSM PSA 0.59ng/ml. LHRH 41%, stilboestrol 29%, BTO 30%. Mortality 3%, Complications 2 – 10%
   Surveillance GS ≤6 PM PSA <8ng/ml 20 all converted to BRACHY/EBRT (11), HCh (9).
B. T3-4 M0 n=167 (T3 100, T4 67). PM PSA 48.5ng PSM 0.6ng/ml GS ≥7, symptomatic 90%.
   Rx All neoadjuvant HCh, LHRH 52%, Stilboestrol 12%, BTO 36% then by Brachytherapy T3 n=3, PM PSA 14.6ng/ml PSM 0.11ng/ml. Death 1

EBRT n=64, T3 (34%) PM PSA 32.4ng/ml, T4 (2%) PM 64.6ng/ml PSM PSA T3 0.6ng/ml, T4 0.4ng/ml. Deaths 2%, Complications 2-10%
HCh n=103 (T3 24%, T4 38%), LHRH 28%, Stilboestrol 4%, BTO 30%, mortality 26%

C. METASTATIC n=87, 13% PM PSA 93ng/ml PSM PSA 0.4ng/ml. Rx LHRH 23%, Stilboestrol 17%, BTO 60%, mortality 37%. Complications 7 – 30%

Conclusions: Prior to 2004 15.3% PC organ confined, T3/T4 32% and metastatic 52%. Improved facilities and skilled teams since 2004 led to organ confined PC 62% curable by RP, brachytherapy or EBRT with longer survival advanced disease pose challenges. Risk factors ↑BMI, chromosome 10p14 with PC, 5q31.3 with aggressiveness GS≥7 and Xq28 and 6q21 with low grade GS≤6.

UP.383

Clinicopathologic Features and Risk Stratification of Concomitant Prostate Cancer Found in Specimens Removed by Radical Cystoprostatectomy: A Prospective Study Using Mapping Technique of Prostate Specimen

Chung J[1], KIM S[1], Seo H[1], Joung J[1], Lee K[1], Park W[2]
[1]Dept. of Urology, National Cancer Center, Goyang, Kyanggi, South Korea; [2]Dept. of Pathology, Prostate Cancer, National Cancer Center, Goyang, Gyeonggi, South Korea

Introduction and Objectives: To describe the prevalence of incidental prostate cancer (IPC) and to quantify its risk stratification in association with other clinicopathologic features in patients undergoing radical cystoprostatectomy (CPT) for malignancy.
Materials and Methods: Consecutive 97 male patients scheduled to undergo CPT were prospectively enrolled. The CPT specimens were examined after mapping prostate specimens, where complete transverse sections of the prostate were taken from the apex to the base at 2-3 mm intervals.
Results: Of the 97 CPT patients, 83 (85.5%) had primary bladder cancer, 12 (12.4%) colorectal cancer, and two (2.1%) penile cancer. A total of 39 (40.2%) patients had concomitant ICP. Most of the IPCs (89.7%) were confined to the prostate, except for three (7.7%) cases of extracapsular extension and one (2.7%) of seminal vesicle invasion. Median tumor volume was 0.6 cm^3. Of these IPCs, 23 (59.0%) cases were clinically significant prostate cancer (CSPC). Among the 76 (81.7%) patients having preoperative PSA, PSA of five stratified categories showed significant correlation with increased incidence of CSPC (RR 0.313, p=0.015). Thirty four (44.7%) patients with PSA<4.0ng/mL had PC, including 11 (14.5%) CSPC and the other 42 (55.3%) with PSA≥4ng/mL, PC was diagnosed in 18 (42.9%) patients, including eight (19.0%) CSPC. Those 83 patients with bladder cancer with IPC had significantly higher age (68.9 vs. 61.6 years) and PSA level (3.9 vs. 1.13) than those with non-IPC.
Conclusions: IPC was a common finding in CPT and 59.0% of IPC was clinically significant. In addition, PSA still appeared to be a useful screening tool for detection of PC.

UP.384

Brachytherapy after TURP: Oncological Outcomes and Functional Urinary Results

Busto Martin L[1], Rodríguez Gómez I[1], Álvarez Castelo L[1], Mariño A[2], Busto Castañón L[1], Gómez Veiga F[1]
[1]Dept. of Urology, Complexo Hospitalario de A Coruña, A Coruña, Spain; [2]Dept. of Radiotherapy, Centro Oncológico Gallego, A Coruña, Spain

Introduction and Objectives: Brachytherapy is a well-known alternative to treat low-risk patients. The role of low dose brachytherapy (LDB) after TURP is on debate. Changes in the morphology of the gland compromise the target, dose prescribed and the impact in the urinary function. The aim of this study is to analyze oncological and urinary results in a group of patients treated with LDB after TURP.
Materials and Methods: From January 2001 to April 2011, 1631 patients with PCa were treated with LDQ. PCa patients who had a TURP performed before LDB were included. Real time technique was used with a dose prescription of 145Gy. Patients were asked in a personal interview about their continence status. After 2 years of follow-up, an ICIQ-SF was performed by phone interview to evaluate any continence Descriptive analysis and Mann-Whitney U test was performed with SPSSv20.
Results: Twenty nine patients were suitable for analysis. Mean follow-up was 55 months, mean age was 67.2 years and mean prostate volume 39.5cc. Twelve (38%) were low and 17 (58%) intermediate risk. Twenty six patients (89.7%) were free of biochemical recurrence and 3 (10.3%) had recurrence. Four patients related any kind of stress incontinence (3 grade 3, and 1 grade according to the RTOG classification). Twenty four patients fulfilled the ICIQ-SF. Mean ICIQ-SF score was 5 (scale from 0 to 21): 11 (47.8%) patients score was 0 and were totally dry. Twelve (52.2%) had any kind of leakage in the RTOG category grade for incontinence: 5 patients had grade 1, 1 had grade 2, and 4 had grade 3 (continuous). The percentage of prostate resected in the TURP (grams obtained in TURP/total prostate) was 17% in the continent group and 36% in the incontinent group (p=0.15).
Conclusions: In patients with previous TURP and low-intermediate risk PCa, LDB has adequate oncological results. Good levels of continence can be achieved, although some factors as percentage of the prostate resected during TURP should be taken in consideration. Prospective studies are needed to define the role of TURP and LDB, complications and risk factors, to minimize them.

UP.385

Results of Patient Feedback Questionnaire following Transperineal Template Guided Saturation Biopsy (TTSB) without Prophylactic Catheterisation

Sarkar D, Bass E, Parry M, Parr N
Wirral University Teaching Hospital, Upton, UK

Introduction and Objectives: TTSB is increasingly utilised in the diagnosis and characterisation of prostate cancer. However, there is little data on patient experience of this procedure. We offered a questionnaire to 500 consecutive patients from July 2007 to January 2014 and now analyse the responses.
Materials and Methods: The mean age for the cohort was 64 years (range-43-82). A mean of 28 biopsy cores (range13-43) were taken under general anaesthesia (GA), as day case procedure. Patients received diclofenac 100mg suppository on completion of the procedure. The questionnaire explored symptoms at 1hr, 1, 3 and 7 days post operatively.
Results: There were 261 responses (52%), with outcomes shown in the Table 1. Twenty (7.7%) with voiding difficulty required catheterisation. Several patients commented that the procedure was more tolerable than their previous conventional biopsy.

UP.385, Table 1.

Post TTSB	1 hour	1 day	3 days	7 days
Bleeding PR (%)	38	28	12	3
Haematuria (%)	80	63	48	27
Haematospermia (%)	-	9	18	38
Voiding difficulty (%)	9	11	7	5
Pain (%)	45	47	37	23
Grade 0-100 (median)	20	20	15	10
Analgesia required (%)	19	21	11	5

Conclusion: TTSB under GA without prophylactic catheterisation is well tolerated, carrying acceptable postoperative symptom rates. Interestingly, a significant proportion of patients ejaculate within 7days, which again suggests good tolerance to the procedure. Patients should be supplied this data preoperatively when considering TTSB.

UP.386

Association between Androgen Deprivation Therapy and Incidence of Hot Flushes among Males with Prostate Cancer

Masuda H, Sugiura M, Hou K, Araki K, Kojima S, Naya Y
Dept. of Urology, Teikyo University Chiba Medical Center, Ichihara, Japan

Introduction and Objectives: Androgen deprivation therapy (ADT) for prostate cancer was the one of effective therapy. Affecting up to 80% of men on ADT, one of the most bothersome side effects is hot flushes (HF). Immediate sweating, flushing and palpitation were concerned the reduce of quality of life (QOL), the treatment couldn't continue and had no choice but to stop. However, HF with treatment were reported the side effect that decreased the QOL. We evaluated the incidence of HF and the association between HF and clinical factors of prostate cancer patients receiving ADT.
Materials and Methods: We performed retrospective analysis of 121 patients who were diagnosed prostate cancer by prostate needle biopsy and had taken ADT for at least six months between January 2009 and July 2013. The incidence of HF was elucidated by the questionnaire of outpatient doctor and electronic clinical records. We didn't adopt hot flushes score. Univariate and multivariate logistic analyses were carried out to identify clinical covariates significantly associated with the incidence of HF.
Results: The overall incidence of HF was 45% (54/121). The mean age was 70.4±0.7 years old with HF and 74.4±0.9 without HF, respectively (P=0.0005). The mean pretreatment hemoglobin was 14.5±0.2g/dl with HF and 13.7±0.2g/dl without HF, respectively (P=0.0135). There was not statistical significant difference in the incidence of HF for each treatment. The interruption of the ADT by HF was not accepted. Multivariate analysis indicated that age was an independent risk factor for the incidence of HF (odds ratio [OR] 0.89, P=0.0082).
Conclusions: Our results suggest that HF tends to appear to younger patients with prostate cancer. Therefore, when the treatment of ADT begins for younger patients with prostate cancer, it is necessary to inform the incidence of HF previously. For younger patients with prostate cancer, the continuation of ADT was very important. So if ADT was discontinued, we should try the various treatments immediately.

UP.387

Impact of Guideline Implementation on Prostate Cancer Screening and Treatment among Men Ages 75 Years and Older

Wallner L[1], Schottinger J[2], Palmer-Toy D[3], Kanter M[2], Loo R[4], Hsu J[5]**, Jacobsen S**[5]
[1]University of Michigan, Ann Arbor, USA; [2]Southern California Permanente Medical Group, Pasadena, USA; [3]Southern California Permanente Medical Group, North Hollywood, USA; [4]Southern California Permanente Medical Group, Downey, USA; [5]Kaiser Permanente Southern California, Pasadena, USA

Introduction and Objectives: Concern about the potential over-treatment of older men prompted the US Preventive Services Task Force to recommend against screening men over the age of 75 with serum prostate-specific antigen (PSA) levels in 2008. We sought to examine the impact of implementing this guideline in a large integrated care organization.
Materials and Methods: A cohort of all 1,325,232 men ages 40 years and older with no history of prostate cancer who were enrolled in the Kaiser Permanente Southern California health plan from January 1, 2000, through December 31, 2012, was passively followed for the use of serum PSA screening tests, prostate biopsies and prostate cancer treatments through electronic health records. The proportion of men having a serum PSA test was estimated considering men eligible for screening once per year. The rates of prostate biopsy, prostate cancer diagnosis and prostate cancer treatment were estimated as a function of this same population, overall and stratified by age group.
Results: Overall, serum PSA screening rates decreased gradually over time among all age groups beginning in 2009. There was a sharp decline seen among men ages 75 years and older beginning in 2008, from 36% to 15%. The rate of elevated serum PSA levels remained constant for men younger than 75 years of age whereas the proportion among those ages 75 years and older dropped from 7.5% to 4%. Biopsy rates demonstrated modest declines among younger men but decreased from about 8/1000 to 3.7/1000 among older men. Among those with an elevated serum PSA level, however, the biopsy rates remained fairly similar across all age groups. Radical prostatectomy rates and radiation therapy rates demonstrated similar declines among men ages 75 years and older whereas younger men exhibited fairly consistent rates.
Conclusion: These data suggest that while rates of prostate cancer treatments remained highest among men in older age groups, there was a decline in utilization subsequent to the decreased testing rates. These data demonstrate that in an integrated care organization, a comprehensive approach to implementing guidelines can result in targeted decreases in over-treatment.

UP.388

Evaluation of the QOL in the Prostate Cancer Patients Advocacy Group

Honda S[1], Kishi H[2], Mizumoto K[1], Yamagata S[1], Noso Y[1], Ishibashi Y[3], Ogawa K[3], Nagami T[3], Anjiki H[3], Koike C[3], Arichi N[3], Nakamura S[3], Mitsui Y[3], Hiraoka T[3], Sumura M[3], Yasumoto H[3], Shiina H[3]
[1]Ohda General Medicine Education Center, Shimane University, Ohda, Japan; [2]Ohda Municipal Hospital, Ohda, Japan; [3]Simane University, Izumo, Japan

Introduction and Objectives: The prostate cancer patients advocacy group in our department was established in 2003 for patients that undergone radical prostatectomy. Annual activities were a general meeting, a party, a lecture and the publication of the bulletin and so on, those were administered by officers and supported by various medicines. We evaluated quality of life (QOL) between members for a longitudinal approach.
Materials and Methods: We evaluated QOL using SF-36 for 34 patients that participated in both a general meeting and a party of 2010 and 21 who were non-participation, of patients that undergone radical prostatectomy between 1999 and 2007. In addition, we compared QOL between in postoperative the second year and the fourth year.
Results: In postoperative the second year, Role physical (RP), Role emotional (RE) and Mental health (MH) was improved in a participation group as compared with non-participation.
In postoperative the fourth year, Physical functioning (PF), Social functioning (SF) and General health (GH) in addition to RP, RE and MH was improved in a participation group. But, there was the significant difference neither. By the longitudinal comparison, MH was significantly improved in a participation group by the fourth year from postoperative the second year. And also, PF, RP, SF and RE showed an improvement tendency in a participation group by the fourth year.
Conclusions: The advocacy group of these patients participation type was useful in preserving the good relation of the patients and the medical person, and constructing the network between the patients. Furthermore, it was suggested that the participation of the group activity led to improvement of the QOL.

UP.389

Treatment Outcomes following Combination Radiotherapy and Androgen Deprivation Therapy for the Treatment of Localized and Locally Advanced Prostate Cancer

Kim B, Jung W, Ha J, Kim C**, Park C**
Keimyung University, Daegu, South Korea

Introduction and Objectives: We investigated the efficacy of patients with localized and locally advanced prostate cancer treated with

combination of androgen deprivation therapy (ADT) and external beam radiotherapy.
Materials and Methods: A total of 61 men with T1-2 prostate cancer (31 men) and T3-4 prostate cancer (30 men) were treated with ADT and radiotherapy (72Gy) from January 2003 to January 2012. ADT was started before 1~2months from the start of radiation and conducted during 6~24 months using combination with LHRH agonist and non-steroidal antiandrogens. Patients' age, Gleason sum, PSA, prostate volume, recurrence, progress to castration resistance prostate cancer (CRPC), survival were analyzed. Biochemical recurrence (BCR) was defined as two consecutive rising of PSA at intervals of 3 months.
Results: The patients' mean age was 71 years and their mean follow-up period was 53.1 months (range, 10-138 months). Median pretreatment PSA was 14.875ng/mL (range, 4.85~187.2ng/mL), mean prostate volume was 37.2cc (range, 21~88cc). The number of patients in the Gleason sum 6-7, 8-9, and 10 were 27 (44.3%), 32 (52.4%) and 2 (3.3%), respectively. The mean PSA nadir level was 0.09ng/mL (range, 0.03~0.77ng/mL) and take mean 2.7 months. Eight patients (13.1%) were recurred at mean 33.6 months. Of the localized prostate cancer patients, BCR and local recurrence confirmed by MRI was 2 and 1, respectively. Of the locally advanced prostate patients, BCR and bone metastasis was 4 and 1, respectively. In recurred patients, the ADT was repeated, but in 2 cases, the disease progressed to CRPC. The 2 patients had received chemotherapy with docetaxel and mitoxantrone, but 1 patient died from cancer after 80 months after radiotherapy. There were several complications of radiation, diarrhea (9; 14.8%) radiation proctitis (7; 11.5%), perineal discomfort (4; 6.6%), frequency (4; 6.6%), dysuria (2; 3.3%), constipation (2; 3.3%), itching sensation (2; 3.3%), voiding difficulty (1; 1.6%). All patients could undergo radiotherapy except one patient who complained about severe proctitis.
Conclusion: In patients treated with combination of ADT and radiotherapy for localized or locally advanced prostate cancer, generally good responses were observed in recurrence and morbidity. No severe complication was observed and more patients and follow-up are required for further conclusions.

UP.391
Anxiety, Quality of Life, Advance Directives of Late-Stage Prostate Cancer Patients
Takeda H, Nakano Y, Narita H
Dept. of Urology, Tosei General Hospital, Aichi, Japan

Introduction and Objectives: Anxiety can worsen prostate cancer patients' decision making and quality of life. Early identification of anxiety disorders is thus very important for excellent prostate cancer treatment. This study aimed to determine the levels of anxiety in patients with advanced-stage prostate cancer and to test the feasibility, acceptability and safety of advance care planning intervention, Advance Care Planning for male patients with advanced-stage prostate cancer.
Materials and Methods: This study was performed at the department of urology, our hospital from 2008 to 2014. The subjects were advanced-stage prostate cancer patients with bone metastatic lesions proved by bone scan. Comparative analysis was done to analyze anxiety scores assessed by use of an 11-item modified Memorial Anxiety Scale for Prostate Cancer (MAX-PC) questionnaire. We also assessed the relationship of the MAX-PC score with age, prostate-specific antigen (PSA) value, number of bone metastases, and pain. Data were analyzed by using SPSS ver. 17 (SPSS Inc.).Exclusion criteria included severe depression and impaired mental status. Our advance directives (Ads) form include information regarding an individual's desire for services such as cardiopulmonary resuscitation, mechanical ventilation, intravenous fluid administration, tube feeding and analgesia (pain relief).
Results: There were 95 subjects with advanced-stage prostate cancer. We found that the mean anxiety score was significantly lower in the hormone-naive prostate cancer group (10.61±3.56) than in the castration resistance prostate cancer (CRPC) group (16.61±5.26) (p=0.001). Furthermore, there were significant positive correlations between MAX-PC score and PSA value, and number of bone metastatic lesions. However, the correlation between age and anxiety score was not significant. The percentages of patients who had Ads during the final hospitalization for cardiopulmonary resuscitation, mechanical ventilation, intravenous fluid administration, tube feeding, analgesia (pain relief), were 0%, 0%, 39%,12%,and 100%, respectively. Eighty eight percent of the patients had a do not rescue order.
Conclusions: The MAX-PC anxiety score was significantly elevated in CRPC, high PSA value and multiple bone metastatic lesions.

UP.392
Concurrent Use of Sr-89 Chloride with Zoledronic Acid Is Safe and Effective for the Metastatic Castration Resistance Prostate Cancer
Takeda H, Nakano Y, Narita H
Dept. of Urology, Tosei General Hospital, Aichi, Japan

Introduction and Objectives: Our aim in this study was to examine the safety and efficacy of the concurrent use of the radiopharmaceutical strontium-89 (Sr-89) chloride with zoledronic acid in standard anticancer therapy for the metastatic castration resistance prostate cancer.
Materials and Methods: The study comprised 35 metastatic CRPC patients with painful multifocal bone metastases detected by bone scintigraphy, computed tomography or magnetic resonance imaging. All patients were treated with Sr-89 and zoledronic acid concurrently between 2007 and 2014 as part of a standard therapeutic regimen comprising chemotherapy, endocrine therapy and targeted radiotherapy. Sr-89 was administered intravenously at 2 MBq/kg to a maximum of 141 MBq per person. Using PSA as an evaluation criterion of cancer control, patients were divided into PSA responder and non-responder groups, and the survival rates of these groups were compared. Safety was evaluated according to myelotoxicity as measured by the Common Terminology Criteria for Adverse Events (v3.0). To assess treatment efficacy, we monitored changes in analgesic drug dosages. Furthermore, bremsstrahlung imaging after the administration of Sr-89 was utilized to examine the relationship between the accumulation of Sr-89 in metastatic sites and treatment efficacy.
Results: Based on the results, a total of 31of 35 patients (88%) reported bone pain relief, indicating a high efficacy of Sr-89 combined with zoledronic acid.PSA 'response' occurred in 30 patients over average 4.2 months after Sr-89. In responsive cases, a strong uptake of Sr-89 was observed on bremsstrahlung imaging at the same sites indicated by (99m) Tc bone scintigraphy. Moreover, severe myelosuppression (> grade 3) was not observed, and adverse events were tolerable. Longer survival was expected for the PSA responder group than for the PSA non-responder group.
Conclusion: In conclusion, the use of Sr-89 with zoledronic acid in CRPC with painful bone metastases has the potential to control PSA and prolong survival, was safe and effective when administered concurrently with other standard therapies. In the future, the treatment with Sr-89 at the early stage should be considered, and a large-scale clinical study should be conducted.

UP.393
Unusual Presentation of Prostate Cancer: Supraclavicular Lymphadenopathy
Elabbady A, Kotb A
Alexandria University, Alexandria, Egypt

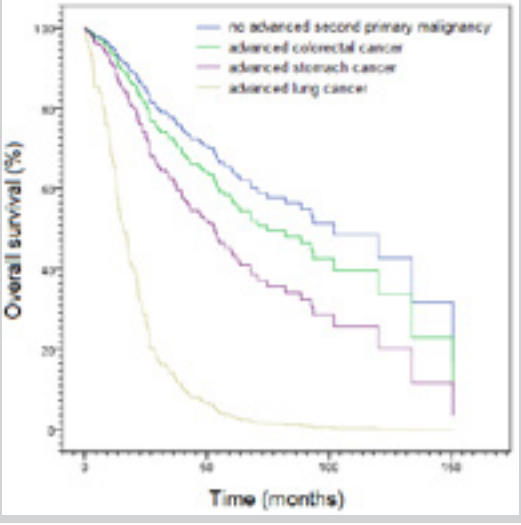
Introduction and Objectives: Prostate cancer is a common health problem, affecting a large group of men during their lifetime. Some authors reported the possibility of prostate cancer spread to left supraclavicular lymph node (L.N.), during the course of non-skeletal metastases. The aim of our work was to report our experience with such rare presentation of prostate cancer.
Materials and Methods: Data collection for patients diagnosed with prostate cancer, in the

past 7 years, in whom supraclavicular lymphadenopathy was one of the main presenting problem of the patients.
Results: We could identify six cases of metastatic prostate cancer with supraclavicular lymph nodes, 2 of them had right supraclavicular L.N. The first case presented to neurosurgery department, with a large right supraclavicular mass, aphasia and right hemi paresis. Three cases presented primarily to general surgery for left supraclavicular lymphadenopathy. The last two cases were known cases of metastatic prostate cancer, on intermittent androgen blockade, developed supraclavicular lymph nodes, during the off-treatment period. One of them developed right supraclavicular LN and the other developed left LN. All the patients had no or minimal lower urinary tract symptoms. All the L.N. decreased significantly in size or disappeared with total androgen blockade.
Conclusion: Prostate cancer should be suspected, in patients presenting primarily with supraclavicular lymphadenopathy, even in the absence of lower urinary symptoms. Serum PSA and DRE should be included in the workup for patients with supraclavicular L.N. especially in cases without an evidence for another primary tumor.

UP.394
Impact of Advanced Second Primary Malignancies on Overall Survival of Patients with Metastatic Prostate Cancer
Koo K[1], Lee D[2], Ham W[1], Hong C[1], Chung B[1]
[1]Yonsei University College of Medicine, Seoul, South Korea; [2]Pusan National University College of Medicine, Pusan, South Korea

Introduction and Objectives: Determining features that stratify the risk of overall survival (OS) of metastatic prostate cancer (mPCa) is critical for patient counseling and judicious application of a definitive therapy. Predictive factors associated with OS in patients with mPCa were analyzed.
Materials and Methods: A retrospective analysis was conducted on 539 consecutive mPCa patients diagnosed between May 1998 and August 2011. Patient age, BMI, Eastern Cooperative Oncology Group performance score, Charlson comorbidity index, PSA, T and N stages, Gleason score, American Society of Anesthesiologists (ASA) score, progression to castration-resistant PCa, prior treatments (chemotherapy, radiotherapy, and radical prostatectomy), and the presence of an advanced second primary malignancy (ASPM) at the time of metastasis were analyzed. ASPM was defined as a cytologically or histologically proven advanced-stage solid malignancy (≥T3 or ≥N1). The adjusted Kaplan-Meier method was used to estimate OS of patients stratified by the type of ASPM. Cox proportional hazards regression analyses were used to evaluate prognostic factors associated with OS.
Results: A total of 146 (27.1%) patients were noted to have an ASPM; 45 (8.3%) colorectal, 36 (6.7%) lung, 34 (6.3%) stomach, and 31 (5.8%) others. There were 288 deaths observed during the median follow-up of 47.4 months. Compared to patients without an ASPM, those with advanced lung and stomach cancers had significantly lower OS rates (log-rank p<0.001); however, patients with advanced colorectal cancer did not (log-rank p=0.384) (Figure 1). On multivariate analysis, clinical stage ≥T4, ASA score ≥1, and the presences of advanced lung and stomach cancers revealed to be independent predictors of a higher risk of all-cause mortality.
Conclusion: A significant proportion of patients with mPCa present with synchronous ASPM. Definitive therapy targeted at PCa may confer a survival benefit for mPCa patients even with advanced colorectal cancer; however, those with advanced lung and stomach cancer might not.

UP.394, Figure 1. Adjusted Kaplan-Meier Curves of Overall Survival for Metastatic Prostate Cancer Patients Stratified by the Type of Advanced Second Primary Malignancy



UP.395
A Meta-Analysis of the Relationship between CXCR4 Expression and Metastasis in Prostate Cancer
Lee J, Jeh S, Kwon J, Jung H, Kang H, Ham W, Choi Y, Hong S, Cho K
Dept. of Urology, Urological Science Institute, Yonsei University College of Medicine, Seoul, South Korea

Introduction and Objectives: Experimental studies have suggested that the stromal derived factor-1 (SDF-1)/CXCR4 axis is associated with tumor aggressiveness and metastasis in several malignancies. We performed a meta-analysis to elucidate the relationship between CXCR4 expression and the clinicopathological features of prostate cancer.
Materials and Methods: Data were collected from studies comparing Gleason score, T stage, and the presence of metastasis with CXCR4 levels in human prostate cancer samples. Studies were pooled and the odds ratio (OR) of CXCR4 expression for clinical and pathological variables was calculated. Five articles were eligible for the current meta-analysis.
Results: We found no relationship between CXCR4 expression and Gleason score (<7 vs. ≥7). The forest plot using the fixed effect model indicated an odds ratio (OR) of 1.585 [95% confidence interval (CI), 0.793 to 3.171, P=0.193]. Additionally, CXCR4 expression is not associated with T stage (<T3 vs. ≥T3) and the relevant meta-analysis showed an OR = 1.803 (95% CI, 0.756 to 4.297, P=0.183). However, increased CXCR4 expression was strongly associated with metastatic disease with a fixed-effects pooled OR of 7.459 (95% CI, 2.665 to 20.878, P<0.001).
Conclusion: Our meta-analysis showed that higher CXCR4 protein expression in prostate cancer specimens is significantly associated with the presence of metastatic disease. This supports previous experimental data for a role for the SDF-1/CXCR4 axis in metastasis.

UP.396
Efficacy and Safety of Docetaxel Chemotherapy in Geriatric (≥75 Years) Patients with Metastatic Castration-Resistant Prostate Cancer
Nishimura K, Ishizuya Y, Yamaguchi Y, Nakai Y, Nakayama M, Kakimoto K
Osaka Medical Center for Cancer and Cardiovascular Diseases, Osaka, Japan

Introduction and Objectives: To assess efficacy and safety of docetaxel (DTX) chemotherapy

for castration-resistant prostate cancer (CRPC) in geriatric patients.
Materials and Methods: Patients who received DTX for metastatic CRPC in our institution were reviewed retrospectively. Patients aged 75 years or older (geriatric group, GG) were analyzed for clinical efficacy and safety by comparison with those patients aged younger than 75 years (non-geriatric group, NGG).
Results: From April 2005 to December 2013, 58 patients with metastatic CRPC were treated with triweekly DTX (75mg/m^2 every 3 weeks) or weekly low-dose DTX (25mg/m^2 days 2 and 9) with estramustine (560 mg on days 1-3 and 8-10). All patients received oral prednisolone or dexamethasone daily. Twelve (21%) patients were in GG and 46 patients (79%) were in NGG at the start of DTX. Median time from initial hormonal therapy to DTX chemotherapy was 40 months for GG versus 23 months for NGG. Median PSA was 25 ng/ml for GG versus 62 ng/ml in NGG. Metastatic sites in GG included bone in 8 patients (67%), lymph node in 4 patients (33%), whereas those in NGG included bone in 36 patients (78%), lymph node in 17 patients (37%) and other organs in 6 patients (13%). Seven (58%) patients in GG and 42 patients (91%) in NGG received triweekly DTX. Median number of DTX cycles was 6 in GG versus 8 in NGG. Nine patients (75%) in GG and 36 patients (78%) in NGG showed a PSA decline >50%. Seven patients (58%) in GG and 33 patients (71.3%) in NGG had Grade 3/4 neutropenia. Other Grade 3/4 toxicities in GG included gastric ulcer, eruption, and pneumonitis, respectively, in a patient (8%). Two-year cancer specific survival was 47% in GG versus 43% in NGG.
Conclusion: In this cohort, GG had longer time of castration-sensitive status and lower PSA level than NGP. Although dose modification or cycle reduction may be required, DTX chemotherapy is efficacious and safe in geriatric patients as well as in non-geriatric patients.

UP.397
Efficacy and Tolerability of Leuprorelin Acetate Alone or in Combination with an Anti-Androgen for Patients with Advanced Prostate Cancer in Daily Clinical Practice
Ohlmann C[1], Gross-Langenhoff M[2], Tunn U[3]
[1]Dept. of Urology, Saarland University Medical Center, Homburg, Germany; [2]Medical Dept., Astellas Pharma GmbH, Munich, Germany; [3]Urological Clinic Facharztzentrum Klinikum Offenbach, Offenbach/Main, Germany

Introduction and Objectives: Androgen-deprivation therapy is the standard therapy for advanced prostate cancer (PCa). It is most often achieved by injecting long-acting luteinising-hormone-releasing-hormone (LHRH) agonists, such as leuprorelin acetate (LA), either alone, i.e. as monotherapy, or in combination with an anti-androgen, i.e. as complete androgen blockade (CAB). The role of monotherapy vs. CAB in daily clinical practice is not clarified conclusively. To gain a real life picture, we retrospectively analysed the efficacy and tolerability of LHRH monotherapy and CAB in daily clinical practice.
Materials and Methods: Two prospective, open-label, non-interventional studies were conducted in Germany in 1,906 advanced PCa patients treated with the 3-month (22.5 mg) or the 6-month (45 mg) LA depot formulation. PSA and serum testosterone (not mandatory) were measured at baseline and every 3 (22.5 mg) or 6 (45 mg) months until 12 months after treatment initiation. Physicians also rated local tolerability. We conducted a subanalysis of pooled data from both studies in patients treated with LA alone or in combination with the anti-androgen flutamide or bicalutamide.
Results: A total of 1,113 patients received monotherapy, 505 received CAB with anti-androgen. In the CAB group, the presence of metastases was more often indicated as the main reason for starting treatment (23.8% vs. 6.5% for monotherapy group). Median serum PSA levels were reduced by 97% in the LA monotherapy group (from 10.8 ng/ml to 0.3 ng/ml 12 months after treatment start) and by 96% in the CAB group (from 18.1 ng/ml to 0.8 ng/ml). Median testosterone levels were reduced by 91% in the LA monotherapy group (from 111.3 ng/dl to 9.7 ng/dl 12 months after treatment start) and by 89% in the CAB group (from 111.1 ng/dl to 12.1 ng/dl). Testosterone reduction below the castration level was sustained up to 12 months in both groups.
Conclusion: These data confirm the efficacy of the 3- and 6-month LA depot formulations in daily clinical practice, either as monotherapy or as part of CAB. In the CAB group, disease burden (metastatic disease) seemed to be higher than in the LHRH monotherapy group and was more often indicated as the main reason for starting treatment in this group. Both strategies reduced PSA and testosterone levels to a similar extent over 12 months.

UP.400
Detection of Circulating Cancer Cell and PSMA Antigen by an Immunomagnetic Sensor to Improve Prostate Cancer Diagnosis
Pang S[1], Yang H[2], Lin C[2], Hua M[3], Liao S[2], Chen Y[4], Chen H[5], Weng W[4], Chuang C[1], Ma C[2]
[1]Dept. of Urology, Chang Gung University College of Medicine and Memorial Hospital, Taipei, Taiwan; [2]Dept. of Chemical Engineering, National Tsing Hua University, Hsin-chu, Taiwan; [3]Dept. of Chemical and Materials Engineering, Biomedical Engineering Center, Chang Gung University, Kuei-Shan, Taiwan; [4]Dept. of Chemical Engineering and Biotechnology and Graduate Institute of Biochemical and Biomedical Engineering, National Taipei University of Technology, Taipei, Taiwan; [5]Dept. of Biochemistry, School of Medicine, Taipei Medical University, Taipei, Taiwan

Introduction and Objectives: Although prostate specific antigen (PSA) is the most frequently used assay for prostate cancer (PCa) detection, its sensitivity and specificity remained to be low. Here, we developed an immunomagnetic sensor to improve PCa diagnosis through the detection of prostate-specific membrane antigen (PSMA) serum level and circulating cancer cells (CTCs).
Materials and Methods: A device containing the PSMA antibody-conjugated magnetic graphene oxide (MGO-PSMAab) was used to capture and measuring the electrochemistry for the detection of PSMA and PCa cells in blood serum. The sensor was used to first detect PSMA in the centrifuged serum sample, and new MGO-PSMAab can then be dropped on the electrode to further detect the number of CTCs in the re-suspended pellet from whole blood sample.
Results: The Δ current increased linearly with increasing PSMA concentrations from 1 pg mL^{-1} to 1000 ng mL^{-1}, indicating that the response was the direct result of PSMA binding to MGO-PSMAab. The number of PSMA-positive cells in healthy males was low (0 to 11 PSMA-positive cells mL^{-1}) as compared to PCa patients (103 to 212 PSMA-positive cells mL^{-1}). The detection limit for PSMA was 10 pg mL and 46 CWR22R PCa cells per sensor, and the amount of PSMA detected was close to that measured by ELISA.
Conclusion: Our sensor provides a broad working range, high specificity, reusability, stability, and low cost. The simultaneous and combined detection of PSMA and CTCs may result in a higher accuracy of PCa detection.

UP.401
Angiopoietin-Like Protein 2 Induces Androgen-Independent and Invasive Behavior in Human Prostate Cancer Cells
Sato R, Yamasaki M, Hirai K, Matsubara T, Nomura T, Sato F, Mimata H
Dept. of Urology, Oita University Faculty of Medicine, Yufu-City, Oita, Japan

Introduction and Objectives: Angiopoietin-like proteins (ANGPTLs) are structurally similar to angiopoietins and composed of seven members (ANGPTL1 to 7). Recently, ANGPTL2 was reported to be involved in inflammatory carcinogenesis and drive metastasis. We investigated the roles of ANGPTL2 in the acquisition of androgen independency and aggressive malignant behavior of human prostate cancer cells.
Materials and Methods: Expressions of ANGPTLs mRNA and proteins were determined

by quantitative real-time PCR and Western blot analysis in androgen dependent and independent prostate cancer cell lines. Androgen dependent LNCaP and independent LNCaP/DHT(-) cells were cultured in fetal bovine medium and charcoal-stripped medium, respectively. The proliferation, androgen-dependency, migration and invasion of LNCaP cells were examined under overexpression and knockdown of ANGPTL2 by transfection of ANGPTL2 cDNA and its siRNA, respectively. The effects of exogenous ANGPTL2 and blocking of its receptor, integrin α5β1, were also investigated. Immunohistochemical analysis was performed using radical prostatectomy specimens obtained from patients with and without neoadjuvant hormonal therapy.

Results: Human prostate cancer cell lines predominantly expressed ANGPTL2 among the members. Interrupting ANGPTL2 expression suppressed the proliferation, invasion, and migration of LNCaP cells. LNCaP/DHT(-) cells showed higher ANGPTL2 expression than LNCaP cells did. Furthermore, LNCaP/DHT(-) cells showed higher proliferation, invasion, and migration than LNCaP cells did. Si-RNA led to apoptosis with increased caspase-9, caspase-3, and cleaved PARP in LNCaP/DHT(-) cells. The ANGPTL2-overexpressing LNCaP cells markedly increased the proliferation, epithelial-to-mesenchymal transition (EMT) and invasive behavior in androgen-deprived medium. The migration rates were increased markedly depending on the concentration of ANGPTL2 recombinant protein and inhibited by anti-integrin α5β1 antibodies. Weakly positive staining of ANGPTL2 was observed in the specimens obtained from patients without neoadjuvant hormonal therapy, however surviving prostate cancer cells were strongly positive staining after hormonal therapy.

Conclusions: The present study demonstrates the expression of ANGPTL2 in human prostate cancer cells for the first time. ANGPTL2 may play an important role in the acquisition of androgen-independency and tumor progression of prostate cancer by autocrine and/or paracrine manner via integrin α5β1 receptor. Targeting ANGPTL2 might be an efficacious therapeutic modality for prostate cancer, especially for androgen-independent prostate cancer.

UP.402

Prognostic Value of Structural and Ultra-Structural Changes of Erythrocytes

Kotrikadze N[1], Veshapidze N[1], Ramishvili L[1], Alibegashvili M[1], Gordeziani M[1], Chigogidze T[2], Gabunia N[2]

[1]Dept. of Biology, Faculty of Exact and Natural Sciences, Iv. Javakhishvili Tbilisi State University, Tbilisi, Georgia; [2]Dept. of Urology, Faculty of Medicine, Iv. Javakhishvili Tbilisi State University, Tbilisi, Georgia

Introduction and Objectives: The defense function of erythrocytes that reveals in absorption, transportation and participation in metabolic processes is an important regulative mechanism of organism. The aim of the work was to study the erythrocytes morphology in order to estimate the prognostic value of the structural and ultra-structural changes of erythrocytes of men with prostate adenocarcinoma before and after plastic orchiectomy.

Materials and methods: Blood erythrocytes of 15-15 male patients with prostate adenocarcinoma before and after plastic orchiectomy and 15 of practically healthy men were studied by means of light and electron microscopy.

Results: The study of erythrocytes with light microscopy in patients with prostate adenocarcinoma before the plastic orchiectomy has revealed all structural parameters that are characteristic to the control group erythrocytes, with the following differences: normocytes without central pallor, small diameter normocytes with central pallor, long erythrocytes and big diameter normocytes with central pallor were increased, while the normocytes with central parrol and middle diameter normocytes with central pallor were decreased, as well as the number of erythrocytes with protuberances and folds and adhesion of thrombocytes on the surface of erythrocytes has been decreased. The normalisation of some erythrocytes' structural characteristics takes place after plastic orchiectomy. Furthermore, the erythrocytes with protuberances and folds and the adhesion of thrombocytes have not been detected in patients after plastic orchiectomy. Electron microscopy studies of erythrocytes before and after plastic orchiectomy revealed weakly outlined, shape changed pathological erythrocytes. Also the long shaped erythrocytes, in both cases, were also found that mostly produce sledges. Investigation has revealed that after plastic orchiectomy sledges appear in blood not only between erythrocytes, but also between erythrocytes and thrombocytes too.

Conclusion: Thus, the microscopic study of erythrocytes is of prognostic importance in genesis of prostate cancer, because this kind of investigations gives the essential information about the processes that take place in organism with tumor pathology.

UP.403

Ceruloplasmin as an Antioxidant Preparation in Case of Prostate Tumors

Ramishvili L[1], Zibzibadze M[1], Gordeziani M[1], Khazaradze A[1], Chigogidze T[2], Managadze L[2], Kotrikadze N[1]

[1]Dept. of Biology, Faculty of Exact and Natural Sciences, Iv. Javakhishvili Tbilisi State University, Tbilisi, Georgia; [2]Dept. of Urology, Faculty of Medicine, Iv. Javakhishvili Tbilisi State University, Tbilisi, Georgia

Introduction and Objectives: Natural blood plasma antioxidant, Ceruloplasmin (Cp) plays the defense role in organism as nonspecific agent in several kinds of pathologies (inflammatory processes, tumor growth and other patho-physiological conditions). The basis of Cp defense function is enzyme's antioxidant features and correspondingly inhibition of free radical processes. It's also known that in biological systems exogenous Cp preparation exposes inhibitory effect. This fact promotes to use Cp for treatment of some patho-physiological cases. The goal of given work was: to study Cp preparation antioxidant activity *in vitro* in the blood of men with prostate tumors and to determine what sort of connection is between Ceruloplasmine's antioxidant and oxidative activities in given pathology.

Materials and Methods: The blood plasma of the patients with Benign Prostate Hyperplasia (BHP) and Cancer of Prostate (CaP) served as material for the studies. Each group was consisted of 15 men. The patients with age of 60-75, at primary revealing of a tumor, were investigated. The control group was consisted of 15 practically healthy males of the compatible age. For evaluation of Endogenous Cp Oxidative activity (530nm) and amount in the blood plasma, modified Ravin method has been used, which implies Cp-induced oxidation of the *p*-phenylenediamine dihydrochloride. Antioxidant activity of Cp was evaluated by the inhibition of lipid peroxidation process while incubation with Cp or without it. Lipid peroxidation was determined by the overall amount of malone dialdehyde (MDA) and was shown as nm/ml.

Results: The study of Ceruloplasmin's antioxidant activity has revealed that, Cp preparation in 100-200 μg /ml concentrations caused inhibitory effect on the lipid peroxidation intensity in all experimental groups (BHP and CaP). In case of higher Cp concentrations (300-800 μg/ml) inhibitory effect on lipid peroxidation was considerably decreased. It has been determined that antioxidant activity doesn't depend on enzyme's oxidative activity and functions independently (at least partially). The different mechanism of antioxidant and oxidative activities might be conditioned by existence of independent sites of substrate binding and alternative ways of electron transfer in Cp.

Conclusion: Obtained results point at Ceruloplasmin's superior role in antioxidant processes and on its established perspective in treatment of prostate tumor pathologies.

UP.404

SHARPIN Overexpression Induces Tumorigenesis in Human Prostate Cancer LNCaP, DU145 and PC-3 Cells via NF-kB/ERK/Akt Signaling Pathway

Huang H, Lai Y, Du T, Zhang Y, He W, Dong W, Zhu D, Lin T, Huang J, Guo Z

Sun Yat-sen Memorial Hospital, Sun Yat-sen University, Guangzhou, China

Introduction and Objectives: SHANK-associated RH domain-interacting protein (SHARPIN) plays an important role in inflammation and the development of the immune system. However, there is no study about the role of SHARPIN in the proliferation, apoptosis, and migration of prostate cancer, and its mechanisms are still unknown.
Materials and Methods: We first investigated the expression of Sharpin protein in tissues of prostate cancer and benign prostate hyperplasia by immunohistochemistry, and the relationship with tumor clinic-pathological features was analyzed. Then we constructed and transfected Sharpin expression vector (pcDNA3.1-Sharpin) to LNCaP, DU145 and PC-3 cells, and testified the efficacy of SHARPIN overexpression by RT-PCR and Western blot. Then we tested the cell proliferation by MTS assay, apoptosis and cell cycle distribution by flow cytometry assay, and cell migration and invasion by transwell assay, respectively. Furthermore, we compared the expression of P65, p-P65, IkBα, p-IkBα, ERK, p-ERK, Akt, p-Akt, Bcl-2, Bax, Survivin and Caspase-3 by Western blot among groups.
Results: By means of immunohistoehemistry, we observed that the expression level of SHARPIN in the cancerous tissues was significantly higher than benign prostate hyperplasia (P<0.001). In addition, we found that the level of SHARPIN in prostate cancer was significantly correlated with Gleason Grade and serum t-PSA (P<0.05). After transfection with pcDNA3.1-Sharpin, the level of SHARPIN increased approximate 106.07%, 89.27% and 276.40% compared with the NC groups in LNCaP, DU145 and PC-3 cell line respectively (all P<0.05). Overexpression of SHARPIN in LNCaP, DU145 and PC-3 cells promoted cell proliferation, invasiveness and migration. SHARPIN overexpression also inhibited the cell cycle arrest in S phase, and showed decreased apoptosis. Furthermore, SHARPIN overexpression LNCaP, DU145 and PC-3 cells displayed elevated Bcl-2 and Survivin expression and reduced levels of Bax, cleaved caspase 3. SHARPIN overexpression increased the levels of phosphorylated IkBα, which is known to increase p-P65 degradation. The activated survival pathways, ERK1/2 and Akt, were selectively increased in these cells, which characteristically have higher tumorigenicity.
Conclusions: Overexpression of SHARPIN induces tumorigenesis of prostate cancer cells through the NF-kB/ERK/Akt pathway. Furthermore, our findings suggest new lines of investigation aimed at developing therapies by targeting SHARPIN or its aberrant expression-associated stimulated antiapoptotic pathways.

UP.405

Frequency of RNASEL R462Q Allelic Variant in Prostate Cancer Patients in Brazilian Population

Dias A[1], Curvo R[2], Quindós G[1], Capibaribe D[1], Frota R[1], Mattos R[1], Pedrosa J[1]
[1]Bonsucesso Federal Hospital, Rio de Janeiro, Brazil; [2]Rio de State University, Rio de Janeiro, Brazil

Introduction and Objectives: The Hereditary Prostate Cancer gene (HPC1) codes for an endoribonuclease named RNase L, enrolled in interferon-linked immune response and in cell cycle regulation. The allelic variant R462Q (G1385A polymorphism), when in homozygosis (Q/Q), have been described as a marker of neoplastic susceptibility and prognosis, in different populations. We developed a real time PCR essay aiming rapid and low cost allelic discrimination of Aa462 position on HPC1 gene to estimate the behavior and prognostic relations of that mutation in Brazilian prostate cancer patients.
Materials and Methods: We selected 72 patients with prostate cancer, who received primary surgical treatment (Retropubic Radical Prostatectomy) and were on a regular follow-up. The clinical-pathological data was gathered retrospectively from medical records. The blood DNA was extracted and the allelic discrimination was performed with a real time PCR, using specific primers for R and Q alleles and Aa462 position. Age at diagnosis, Gleason Score of surgical specimen and initial PSA were reviewed, searching for correlations with molecular analysis.
Results: From 72 patients in study, 34 (47.22%) do not carry any trace of the mutation (RR), 31 (43.05%) were heterozygous (RQ), and 7 (9.72%) displayed the mutation on both chromosomes (QQ). The median age was 62 years old for the homozygous, QQ, mutation group. For the RQ and RR groups, the median age was, 64 and 64.5, respectively. The median PSA value was 12, 10 and 9.85, for the QQ, RQ and RR groups. The Gleason Score was 8 or 9 in 2 out of 7 (28.57%) patients in QQ group. Within the RQ and RR groups we identified 4 (12.9%) and 6 (17.64%) patients with this high-risk Gleason score. None of the observed differences between groups reached statistical significance.
Conclusion: A significant fraction of patients with prostate cancer in this cohort had allelic variant R462Q in HPC1/RNASEL gene, with nearly 10% homozygous mutation. The clinical-pathological characteristics evaluated did not show a positive correlation with this mutation after statistical analysis.

UP.406

An Automated, Sensitive, High-Throughput Biomarker Protocol for Tissue Microarrays Containing Archival Prostate Specimens: The Prognostic Potential of an ERG EMT Panel

Brown M[1], Al-Sukani A[1], Hart C[1], Ramani V[2,3], Lau M[2,4], Sangar V[2,3], **Clarke N**[2,4]
[1]Genito Urinary Cancer Research Group, University of Manchester, Manchester, UK; [2]The Christie NHS Trust, Manchester, UK; [3]South Manchester University Hospital, Manchester, UK; [4]Salford Royal NHS Trust, Salford, UK

Introduction and Objectives: Tissue microarrays (TMAs), linked to clinical databases containing clinical outcome data, offer a great potential for defining and validating new biomarkers in urological oncology. The long-term follow-up required for true clinical outcome prostate cancer results in the use of archival material for TMA construction. The use of such material has inherent problems which must be overcome to unlock the full potential of prostate TMAs.
Materials and Methods: A prostate 2,450 core TMA containing normal, prostatic intraepithelial neoplasia and malignant prostate tissue from 524 archival patient specimens was constructed and analysed. Each core was independently verified histologically. An automated, high throughput fluorescent staining (Leica BOND-MAX), image capture (Carl Zeiss Microimaging Mirax scanner) and scoring (Definiens Tissue Studio) protocol was compared with standardised conventional staining and manual scoring techniques.
Results: Image analysis showed excellent correlation (r=0.785) and absolute agreement between the automated and manual scoring protocols (ICC=0.769, 95% CI [0.629-0.877]). Replicate analysis demonstrated that the automated, high throughput protocol was more reliable and consistent than the standardised manual staining and scoring protocols. The increased sensitivity of fluorescent staining in the automated protocol highlighted significant (p>0.0001) antigen degradation (pan-cytokeratin), hence poorly persevered regions, in 50.7% of the archival TMA cores. Initial analysis of expression levels in well preserved cores show no correlation between single or combined marker expression with outcome. The inclusion of normal cores from the same patient enables analysis of the fold change in marker expression between normal and tumour cores, normalising each tumour core to the patient. The potential of individual patient normalised Erg expression combined with EMT markers as a prognostic indicator will be presented.
Conclusions: This study shows that archival TMAs can be utilised for biomarker characterisation and validation. However there are caveats to their use, namely antigen preservation. The use of multicolour automated protocols, which

utilise a house keeping antigen, circumvents these caveats and releases the full potential of TMAs in biomarker research.

UP.408

Combining Prostate Health Index and Multiparametric MRI Findings for Prostate Cancer Diagnosis

Acar Ö[1], Paloğlu E[2], Vural M[3], Cezayirli F[1], Musaoğlu A[1], Esen T[1,4]

[1]Dept. of Urology, VKF American Hospital, Istanbul, Turkey; [2]Dept. of Biochemistry, VKF American Hospital, Istanbul, Turkey; [3]Dept. of Radiology, VKF American Hospital, Istanbul, Turkey; [4]School of Medicine, Koc University, Istanbul, Turkey

Introduction and Objectives: Prostate Health Index (Phi) and multiparametric prostate MRI (Mp-MRI) are useful clinical adjuncts that help the physician to better understand the risk of prostate cancer. In this study, we evaluated the combined diagnostic performance of Phi and Mp-MRI.

Materials and Methods: We retrospectively evaluated the charts of the patients who were assessed by Phi test between June 2012 and May 2013. According to the Phi result, patients were assigned to risk categories; 0-20.9 (low risk), 21-39.9 (moderate risk), ≥40 (high risk). Some of these patients underwent Mp-MRI and prostate biopsy was ordered for those with clinical and radiologic suspicion of prostate cancer. We analyzed the diagnostic yield in each risk group.

Results: Out of 72 patients, 4 (5.5%), 42 (58.3%) and 26 (36.1%) patients were assigned to low, moderate and high risk categories, respectively according to their Phi result. Mean patient age in low, moderate and high risk categories was 51.7±13.6, 60.9±7.9 and 60.9±10.8 years, respectively. Mean serum PSA value was, 3.8±1.4, 4.7±2.6 and 9.5±10.7 ng/ml in low, moderate and high risk groups, respectively. Thirteen patients in moderate risk group and 16 patients in high risk group were further evaluated by Mp-MRI. Of these, 5 in moderate risk group and 10 in high risk group were reported to harbor highly suspicious lesions on Mp-MRI. Based on the clinical and radiologic data, 4 patients in moderate risk group and 9 patients in high risk group were biopsied. Eventually, all of the biopsies in moderate risk group were negative whereas 8 out of 9 prostate biopsies (88.8%) revealed prostate cancer in high risk group.

Conclusion: Phi result >40 and highly suspicious lesions on Mp-MRI will most probably translate into a histopathologic diagnosis of prostate cancer.

UP.409

Correlation of Multi-Parametric MRI with Template Trans-Perinteal Prostate Mapping in Diagnosis of Prostate Cancer

Yek J**, Chen K**, Tay K, Ho H, Yuen J, Tan E, Cheng C

Singapore General Hospital, Singapore

Introduction and Objectives: To correlate findings detected on multi-parametric Magnetic Resonance Imaging (mp-MRI) with positive prostate biopsy in template trans-perineal prostate-mapping (TTPM) biopsy, in diagnosis of prostate cancer (PCa).

Materials and Methods: A consecutive cohort of patients in a tertiary institution, from May 2011 to December 2013, with rising PSA and between 0 - 2 negative TRUS biopsies underwent mp-MRI and TTPM biopsy. mp-MRI protocol included T1-weighted, T2-weighted, apparent diffusion coefficient maps of diffusion-weighted images and dynamic contrast-enhanced imaging. Images were read independently in routine clinical setting by experienced radiologists. Suspicious lesions, defined as any lesions seen on 1 – 3 sequences, were categorized into an 8-region subdivision of the prostatic gland, according to the anatomical (anterior fibromuscular stroma, central, transitional and peripheral) zones of each prostatic lobe. Systematic biopsy cores were grouped into identical anatomical subdivisions and Gleason score of each region was taken as the highest score observed amongst all positive biopsies. A total of 14 patients with mpMRI-detected lesions were included, and their histology findings were compared with mpMRI-detected lesions to determine the detection rate of PCa in each region.

Results: Mean patient age was 60 years with mean prostate volume of 31.8 mls; mean PSA 9.10ng/ml; mean PSA density of 0.25; mean number of cores 31. Prostate cancer was detected in 11 of the 14 patients. Seven of these patients had corresponding mpMRI-detected lesions, of which four had Gleason ≥ 7. Seven patients had positive biopsy in regions undetected by mp-MRI - of which, three had Gleason ≥ 7. Six of these patients had undetected lesions in TZ, four in AFS, three in CZ and only one in PZ. mpMRI has a positive predictive value of 47.0% and negative predictive value of 76.8% for PCa.

Conclusions: MpMRI can guide systematic prostatic biopsy in detection of PCa but will not suffice alone to replace with mpMRI-targeted biopsy altogether.

UP.408, Table 1. Mp-MRI findings, Phi Results and Biopsy Outcome in the Study Population. CaP: Prostate Cancer, Bx: Transrectal Prostate Biopsy

Low risk, n (CaP/Bx/total)		**Risk category according to Phi result**			
		Moderate risk, n (CaP/Bx/total)	**High risk, n (CaP/Bx/total)**	**Total**	
Mp-MRI findings	**High degree of suspicion**	**0/0/0**	**0**/4/5	**6**/7/10	6/11/15
	Low degree of suspicion	**0/0/0**	**0**/0/8	**2**/2/6	6/11/15
	Mp-MRI was not performed	**0**/0/4	**1**/4/29	**3**/5/10	6/11/15
	Total	0/0/4	1/8/42	11/14/26	12/22/72

UP.410

The Effect of Finasteride on Prostate Volume in Men with Androgenetic Alopecia

Ahmadnia H[1], Yazdanpanah M[2], Kamalati A[3], Imani M[4], Younesi Rostami M[5], Rajabpoor Sanati F[6]

[1]Dept. of Urology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; [2]Dept. of Dermatology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; [3]Dept. of Urology, Faculty of Medicine, Kerman University of Medical Sciences, Kerman, Iran; [4]Dept. of Urology, Ghaem Hospital, Mashhad University of Medical Sciences, Mashhad, Iran; [5]Dept. of Urology, Faculty of Medicine, Mazandaran University of Medical Sciences, Sari, Iran; [6]Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: Recent studies have indicated that treatment with finasteride 5mg/day leads to reduction of prostate cancer prevalence compared to patients who were treated with placebo. However, prevalence of high grade cancers in these patients increases. It is not clear whether or not finasteride 1mg/day which is indicated in androgenetic alopecia treatment affects prostate volume and therefore changes the rate of high grade prostate cancer detection. The aim of this study is to estimate the effect of finasteride 1mg/day on prostate volume in patients with androgenetic alopecia.

Materials and Methods: A total of 25 men with androgenetic alopecia participated in this randomized clinical trial study and treated with finasteride 1mg/day for a year. Prostate volume was measured before treatment, 6 months and one year after treatment. Furthermore, 25 healthy men without any previous history or suspicious background in relation with diseases

or conditions that affect prostate volume participated in this study as control group, while prostate volume were measured in this group similar to the study group.
Results: The mean age of case and control groups was 30.8±8.15 and 31.16±8.15 years, respectively. During one year of treatment with finasteride 1mg/day in patients with androgenetic alopecia, mean prostate volume reduced 14% and 16% after 6 and 12 months of treatment, respectively (from 18.68±4.2 to 16±3.39 cm3 and from 18.68±4.2 to 15.52±3.40 cm3).
Conclusion: In this study, finasteride 1mg/day results in reducing prostate gland volume after treatment. In fact, this reduction is slightly lower than other studies; however, it is of paramount importance that treatment with finasteride 1mg/day should be considered in interpreting the results of prostate biopsies, especially in order to detection of high grade prostate cancers.

UP.411
Importance of Prostate-Specific Antigen Screening before and after Bacillus Calmette–Guérin Intravesical Bladder Instillation Treatment to Avoid Unnecessary Prostate Biopsy
Okamura T[1], Akita H[1], Tanaka Y[1], Yamada K[1], Kobayashi T[1], Ando R[2], Kawai N[2], Tozawa K[2]
[1]J.A. Aichi Anjo Kosei Hospital, Anjo, Japan; [2]Nagoya City University, Nagoya, Japan

Introduction and Objectives: Adverse effects of Bacillus Calmette–Guérin (BCG) intravesical instillation therapy vary widely, and can include BCG-induced prostatitis. The rate of prostatitis was 0.2% (17/3,377 cases) in a post-marketing surveillance study in Japan. In contrast, prostate cancer that emerges as bladder cancer is frequently observed. In some cases, the clinical diagnosis is difficult. Therefore, if prostate-specific antigen (PSA) levels increase after BCG therapy, a prostate biopsy should be performed to rule out a diagnosis of prostate cancer. This study aimed to determine whether ta significant association exists between intravesical BCG immunotherapy and an increase in serum PSA; an association could help avoid unnecessary prostate biopsies.
Materials and Methods: PSA values were determined in 114 men who had undergone intravesical BCG instillation at our institution between 2000 and 2012. The mean age of the patients was 69.2 years (range, 40–87 years). All cases were of urothelial cancer; the histological classification was G1 in 9 patients, G2 in 74 patients, G3 in 17 patients, and carcinoma *in situ* in 14 patients.
Results: PSA was measured more than once in 37 out of 100 cases, except the cases diagnosed with prostate cancer. Patients showed an increase in PSA levels in 7 cases, and 3 patients showed an increase in PSA levels after BCG treatment. There were 2 cases of granulomatous prostatitis after BCG treatment, which led to a definitive diagnosis via biopsy. Furthermore, there were 14 cases of opportunistic prostate cancer, 8 cases of suspected prostate cancer, 2 cases identified through hematuria examination, 1 case identified during medical screening, and 3 cases undergoing treatment due to a previous diagnosis of prostate cancer.
Conclusion: Our results confirm that PSA examination is essential before and after BCG treatment. PSA elevation in patients treated with intravesical BCG is self-limiting; prostate biopsies are not mandatory in these patients and could be delayed while PSA levels are monitored. However, prostate biopsies are mandatory in patients with abnormal PSA elevation, because there are many metachronous occurrences of prostate cancer.

UP.412
Significance of Hypoechoic Lesion in Trans Rectal Ultrasonography
Kim B, Ha J, Jung W**, Park C**, Kim C
Keimyung University, Daegu, South Korea

Introduction and Objectives: Hypoechoic lesions in trans rectal ultrasonography(TRUS) of the prostate are known as associated with cancer, but it is a not clearly conclusive. We analyzed that the relationship between hypoechoic lesions seen in TRUS and prostate cancer.
Materials and Methods: From January 2009 to December 2012 in our institution, 501 patients who performed transrectal needle biopsy were analyzed. Prostate specific antigen (PSA), digital rectal examination, prostate volume, TRUS findings were analyzed. Also, we investigated correlation of hypoechoic lesion locations in TRUS and positive core locations in prostate needle biopsy.
Results: The mean age of the patients was 68.8 years old. The median prostate volume was 45gm (range, 17 ~ 270gm). Median serum PSA level was 11ng/ml (range 1.7 ~ 4083ng/ml). A total of 44.9% (225/501) cases were diagnosed with prostate cancer. Transrectal ultrasonography showed a hypoechoic lesion in the 135 cases (27.0%), and 30 (22.2%) patients of these patients were diagnosed with prostate cancer. Hypoechoic lesion in the ipsilateral lobe and in the case of cancer was diagnosed in 15 cases (11.1%). Depending on the size of the hypoechoic lesion, less than 0.5cm, 5 cases (4.6%) in the diagnosis of cancer, but, more than 0.5cm, 25 cases (92.5%) were diagnosed in the prostate cancer. PSA values were not associated with the presence of hypoechoic lesion. In cases of hypoechoic lesion with PSA was lesser than 3ng/ml, 29.6% (8/49) were diagnosed prostate cancer. Digital rectal examination was performed in 241 cases. There were 177 cases with palpable nodule and 92 cases (52.0%) were diagnosed with cancer. In multivariate analysis, prostate cancer patients had higher PSA ($p < 0.01$) and palpable nodule at digital rectal examination ($p = 0.02$). But old age, prostate size and the presence of hypoechoic lesion was not related.
Conclusion: The cases of hypoechoic lesion in TRUS with normal PSA were diagnosed to prostate cancer in 29.6%. The hypoechoic lesion larger than 0.5cm was likely to be a cancer. But, PSA and digital rectal examination were more accurate to diagnosis of the prostate cancer.

UP.414
Evaluation of the Efficacy of a Combination of Benzocaine Gel and Periprostatic Nerve Block in Pain Control during Transrectal Ultrasonography-Guided Biopsy of the Prostate
Takeda H, Nakano Y, Narita H
Dept. of Urology, Tosei General Hospital, Aichi, Japan

Introduction and Objectives: The choice of analgesia during prostate biopsy remains controversial. Periprostatic nerve block (PPNB) is currently the gold standard modality for decreasing pain of prostate biopsy. We determined the efficacy of anesthesia for prostate biopsy by a combination of benzocaine gel and periprostatic nerve block.
Materials and Methods: A total of 121 consecutive patients undergoing prostate biopsies were randomized into A: lidocaine with benzocaine gel used Hurricaine Topical Anesthetic Gel (n=61) and B: benzocaine gel only groups (n=60). A 5 ml. dose of 1% lidocaine was injected via 18 gauge needles inserted through the transrectal ultrasound probe working channel and aimed at the prostatic neurovascular bundles bilaterally. Patients completed a symptom questionnaire applying a visual analog scale of 0-none to 10-maximal addressing pre-procedure anxiety, overall pain and discomfort throughout the procedure, pain during biopsy punctures and patient tolerance, as judged by the operator. Student's t test was used to analyze continuous variables and the chi-square test was applied for categorical data.
Results: The average pain level throughout the procedure was 2.73 in the lidocaine group versus 4.76 in the control group ($p=0.04$), while the pain level during biopsy punctures was 1.32 versus 4.12 ($p=0.001$) and patient tolerance was 1.06 versus 1.93 ($p=0.018$). The level of discomfort throughout the procedure was lower in the lidocaine combination of benzocaine gel and periprostatic nerve block group with borderline significance (4.31 versus 5.24, $p=0.077$). The combination and control groups were comparable regarding average patient age (70.2 and 70.9 years, respectively). Prostate volume was similar in the 2 groups (27.5 versus 28.4 ml.). The median number of biopsy

punctures was 11.2 and 11.6, respectively. Cancer was identified in 32.1% patients.
Conclusions: The combination of benzocaine gel and PPNB with 1% lidocaine is more effective method of anesthesia for prostate biopsy than without 1% lidocaine.

UP.415

Before, during and after Prostate Biopsy PSA Change Relation with Prostate Cancer and Benign Prostate Hyperplasia

Kilinc M[1], Goger Y[1], Esen H[2], Piskin M[1], Kandemir A[1]
[1]Dept. of Urology, Faculty of Medicine, Necmettin Erbakan University Meram, Konya, Turkey; [2]Dept. of Pathology, Faculty of Medicine, Necmettin Erbakan University Meram, Konya, Turkey

Introduction and Objectives: We studied the changes in the PSA level before and after prostate biopsy. The present study aims to expose the difference between prostate cancer (PrCa) and Benign Prostate Hyperplasia (BPH) in PSA fluctuation.
Materials and Methods: A total of 436 patients underwent TRUSG prostate biopsy during 2008-2012. Out of these patients, 285 had BPH and 151 PrCa according to pathology results. In the present study serum PSA levels were measured right after PSA2, PSA3 after 30 minutes (PSA4), and 24 hours (PSA5) following biopsy to the right and left prostate lobes (Table 1). PSA1, PSA2, PSA3, PSA4, and PSA5 levels were compared with each other as pairs in BPH and PrCa groups (Table 2).
Results: PSA1, PSA2, PSA3, PSA4, and PSA5 levels of 436 who underwent TRUSG prostate biopsy were measured. Among the measured pairs there was not any statistically significant difference in both BPH and PrCa groups (p>0,05); yet, there was a difference present in ,PSA1-PSA2, PSA1-PSA3, PSA1-PSA4, PSA1-PSA5, PSA2-PSA3, PSA2-PSA5, PSA3-PSA4, PSA3-PSA5, PSA4-PSA5 pairs (p< 0.05). In the PrCa group, the PSA1, PSA2, PSA3, PSA4, PSA5 levels were significantly higher than those in the BPH group. Among the measured pairs, the difference in the BPH group was higher compared to the PrCa group. Especially in the PSA1-PSA2, PSA1-PSA3 pairs the difference in the BPH group was higher in comparison to the PrCa group. In the PrCa group the difference among the measured pairs lower compared to BPH group.
Conclusion: The high difference among the PSA measured pairs could be considered as BPH; yet, if all the values are in close proximity it might be an indicator of PrCa. Changes in the measured PSA pairs might require a reevaluation of cancer patients with negative biopsy results in actual clinical use.

UP.415, Table 1. PSA Values of BPH and PrCa Patients

	BPH (n:285)			Pr Ca (n:151)		
	Mean	Std. Deviation	Variance	mean	Std. Deviation	Variance
YAŞ	64.82 (47-86)	8.33	69.46	68.83 (46-91)	8.99	80.96
PSA1	12.06 (0.40-150.00)	12.85	165.23	38.69 (2.30-152)	46.1	21.40
PSA2	57.86 (2.80-154.00)	43.68	1908.40	73.12 (2.50-296)	53.49	28.73
PSA3	70.21 (3.40-152)	48.1	2314.97	84.64 (7.20-299)	54.59	29.62
PSA4	54.78 (3.20-152)	41.36	1710.84	75.32 (6.40-298)	53.50	28.29
PSA5	30.17 (3.20-150)	23.61	557.77	51.19 (4.10-308)	50.83	25.57

UP.415, Table 2. Statistical Comparison of PSA Levels of BPH and PrCa Groups

	BPH				Pr Ca			
	Mean	Std. Deviation	Std. Error Mean	Sig	Mean	Std. Deviation	Std. Error Mean	Sig
PSA1 - PSA2	45.96 (40-50)	42.88	2.54	.000	34.66 (28-41)	40.40	3.29	.000
PSA1 - PSA3	58.34 (52-63)	47.92	2.84	.000	46.23 (38-53)	47.17	3.85	.000
PSA1 - PSA4	42.86 (38-47)	41.01	2.43	.000	36.88 (30-43)	40.84	3.33	.000
PSA1 - PSA5	18.17 (15-20)	23.48	1.39	.000	12.72 (9-16)	20.70	1.69	.000
PSA2 - PSA3	12.34 (9,6-15)	25.16	1.49	.000	11.51 (7,1-15)	27.04	2.20	.000
PSA2 - PSA4	3.08 (0,2-6,3)	28.25	1.67	.067	2.20 (0,8-6,9)	25.54	2.07	.291
PSA2 - PSA5	27.68 (23-32)	37.79	2.23	.000	21.92 (16-27)	32.69	2.66	.000
PSA3 - PSA4	15.42 (12-18)	22.73	1.34	.000	9.31 (6,5-12)	17.43	1.41	.000
PSA3 - PSA5	40.03 (35-44)	41.83	2.47	.000	33.44 (27-39)	39.14	3.18	.000
PSA4 - PSA5	24.60 (20-28)	33.18	1.96	.000	24.12 (18-29)	32.11	2.61	.000

UP.416

Comparison of PSA Values of Prostate Cancer Patients before, during and after Prostate Biopsy Using Gleason Score

Kilinc M[1], Goger Y[1], Esen H[2], Ozturk A[1], Balasar M[1]
[1]Dept. of Urology, Faculty of Medicine, Necmettin Erbakan University Meram, Konya, Turkey; [2]Dept. of Pathology, Faculty of Medicine, Necmettin Erbakan University Meram, Konya, Turkey

Introduction and Objectives: The prostate specific antigen (PSA) levels of prostate cancer patients have been measured during, and after prostate biopsy. We studied the reaction of cancerous prostate tissue to the changes in PSA levels.

Materials and Methods: In the present study 151 patients who underwent prostate biopsy with TRUSG and had prostate cancer according to pathology results were evaluated. The prostate specific antigen levels were measured right after (PSA2, PSA3), 30 minutes (PSA4), and 24 hours (PSA5) following an intervention to the right and left lobes of the prostate. The pathologic specimen obtained during the biopsy was categorized according to Gleason Grading System. Hence four groups were formed. Group 1 consisted of the tissue scored as under 6, Group 2 as 6, Group 3 as 7, Group 4 as above seven (Table 1). PSA1, PSA2, PSA3, PSA4, and PSA5 levels of the patients were compared according to their groups. Intergroup changes have been measures in pairs using paired difference test. The relation between

changes in measured groups and relation between Gleason Score were compared (Table 2). **Results:** PSA1, PSA2, PSA3, PSA4, and PSA5 levels of 151 prostate cancer patients have been measured. Whereas there was not any statistically significant difference among the PSA2-PSA4 pair ($p>0.05$), there was a significant difference in PSA1-PSA2, PSA1-PSA3, PSA1-PSA4, PSA1-PSA5, PSA2PSA3, PSA2-PSA5, PSA3-PSA4, PSA3-PSA5, PSA4-PSA5 pairs ($p<0.05$). In the groups categorized according to Gleason Grading System, the higher Gleason score was the less was the statistically meaningful difference among the groups. In both Group 1 and 2, there was not any statistically significant difference among the PSA2-PSA4 pair likewise in the PSA3-4 pair in Group 3, and PSA2-PSA5 in Group 4. The higher the Gleason score was the closer were the increase ratio in PSA2, PSA3, PSA4, and PSA5 levels. **Conclusion:** Despite the increase in PSA levels with the increase in Gleason Score, the difference among the measures PSA pairs decreased. The higher the prostate cancer grade became, the lower did PSA secretion sank. In prostate cancer patients with close scores for measured pairs, Gleason score can also be considered to be high in actual clinical use.

UP.417

Post Prostate Biopsy Pain: Is Analgesia Essential?

Kyei M[1], Mensah J[1], Klufio G[1], Mante S[2], Toboh B[1], Ali M[1], Johnson B[3], Yeboah E[1]
[1]University of Ghana Medical School, Accra, Ghana; [2]37 Military Hospital, Accra, Ghana; [3]Yale Center for Analytical Sciences, New Haven, USA

Introduction and Objectives: The use or otherwise of analgesia for post prostate biopsy pain relief is based on the practitioner's preference. The objective of this study was to establish if there is the need for post prostate biopsy analgesia and to determine the appropriate duration of the analgesia if so used.
Materials and Methods: A randomized prospective study of 250 patients scheduled for TRUS biopsy of the prostate from January 2013 to November 2013 was carried out. The patients had 12 core biopsy of the prostate performed with a peri-prostatic block using 2% lignocaine injection. The patients were randomized to; Group 1 (n=64) with a mean age of 67.4 (range 52-82) with no post biopsy administration of analgesia; Group 2 (n=69) mean age of 67.4 (range 40-83) to receive 1g of acetaminophen 8 hourly for one day (24 hours); and Group 3 (n=117) with a mean age of 65.9 (range 45-89) for 2 days (48 hours). The parameters documented included the age, TRUS prostate volume, PSA density, the histology of the specimen and the 10 point visual analogue pain scores on post procedure days 1, 2 and 3.
Results: Comparing Group 1 with no post biopsy analgesia to Groups 2 with a day (24 hours) and Group 3 with 2 days (48 hours) of analgesia, pain scores on days 1, 2 and 3 were significantly greater for Group 1; $p = 0.0046$, $p = 0.0399$ and $p = 0.0118$ respectively. Comparing Group 2 to Group 3, there was no evidence that pain scores on days 1, 2 and 3 was different between the two groups; $p = 0.1$, $p = 0.06$, and $p = 0.098$ respectively. There was no correlation between the pain scores of the group without

UP.416, Table 1. PSA1, PSA2, PSA3, PSA4, PSA5 Levels According to Groups

	Group 1 (Gleason score <6)		Group 2 (Gleason score 6)		Group 3 (Gleason score 7)		Group 4 (Gleason score >7)	
PSA mg/dl	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
PSA1	22.83 (14.7-31.1)	19.8	16.91 (10-23.7)	23.67	70.25 (51.7-88.7)	57.08	70.25 (51.7-88.7)	57.08
PSA2	88.6 (69.6-107.5)	45.8	53.84 (41.6-66)	41.97	89.89 (67.8-111.9)	68.09	89.89 (67.8-111.9)	68.09
PSA3	100.12 (80.3-119.9)	47.9	70.73 (56.9-84.4)	47.35	96.24 (73.5-118.8)	69.64	96.24 (73.5-118.8)	69.64
PSA4	80.6 (61.4-99.7)	46.3	57.52 (45.9-69.5)	41.41	92.68 (70.4-114.9)	68.65	92.68 (70.4-114.9)	68.65
PSA5	50.94 (34.6-67.2)	39.50	34.31 (25.2-43.4)	31.39	84.63 (62.7-106.5)	67.47	84.63 (62.7-106.5)	67.47

UP.416, Table 2. Statistical Analysis of PSA Measured Pairs According to Groups

	Group 1 (n:24)			Group 2 (n:47)			Group 3 (n:41)			Group 4 (n:38)		
	Mean	Std. Deviation	Sig.	Mean	Std. Deviation	Sig.	Mean	Std. Deviation	Sig.	Mean	Std. Deviation	Sig.
PSA2 - PSA1	65.6	40.24	.000	36.9	39.72	.000	28.7	32.42	.000	19.6	39.26	.003
PSA3 - PSA1	77.1	39.43	.000	53.8	47.82	.000	37.7	39.79	.000	25.9	47.44	.002
PSA4 - PSA1	57.6	37.20	.000	40.6	39.67	.000	34.3	38.93	.000	22.4	41.28	.002
PSA5 - PSA1	28	26.09	.000	17.3	23.32	.000	15.1	27.71	.001	14.3	31.71	.007
PSA3 - PSA2	11.5	23.07	.020	16.8	33.51	.001	9.0	27.72	.041	6.3	16.27	.020
PSA4 - PSA2	8.0	23.69	.104	3.68	29.45	.391	5.6	29.84	.226	2.7	9.66	.080
PSA5 - PSA2	37.6	38.22	.000	19.5	39.45	.001	13.5	36.46	.021	5.2	21.96	.143
PSA4 - PSA3	19.5	21.60	.000	13.2	20.05	.000	3.0	12.99	.101	3.5	9.42	.024
PSA5 - PSA3	49.1	36.597	.000	36.421	38.365	.000	22.588	33.132	.000	11.608	30.979	.025
PSA5 - PSA4	29.6	33.868	.000	23.206	30.490	.000	19.226	29.932	.000	8.051	24.283	.045

treatment and the age, prostate volume, PSA density and histology of the specimen.
Conclusion: Patients given analgesia after TRUS prostate biopsy tend to have significantly lower pain scores on all days than people who receive no pain treatment, thus making the use of analgesia essential. The use of analgesia for two days led to relatively lower pain scores compared to one day. There was no evidence to support the use of analgesia beyond day two as most of the patients had no pain by then.

UP.418
High Incidence of the Prostate Cancer in Japanese Men with the B Blood Group
Ito M, Takeshita H, Ishioka J**, Moriyama S**, Yoshida S, Mastuoka Y, Numao N, Saito K, Masuda H, Fujii Y, Kihara K
Tokyo Medical and Dental University, Tokyo, Japan

Introduction and Objectives: Many studies suggest associations between the ABO blood group and the risk of various cancers. However, the relationship between the ABO blood group and prostate cancer (PCa) has never been investigated. Moreover, the B blood group population constitutes a relatively large population in Japan compared with in Western countries. The aim of this study is to assess the association between the B blood group and PCa in the Japanese population.
Materials and Methods: A retrospective analysis was performed on 1687 consecutive Japanese men who underwent prostate biopsy from January 2006 to October 2013 in our institute. Data from 1538 of these men were able to be analyzed. The association between the B blood group and PCa was examined using univariate and multivariate analyses that included age, PSA, DRE findings, family history, prostate volume, and BMI. We also examined the relationship between the ABO blood group and high-grade cancer (HGCa, Gleason score ≥ 4+3).
Results: PCa was detected in 830 (53.9%) men, and high-grade cancer was detected in 382 (24.8%) men. The median age was 67 years, and serum PSA level was 7.7 ng/ml. The overall ABO blood group distribution was 616 (40.1%) in group A, 468 (30.4%) in group O, 309 (20.1%) in group B, 145 (9.4%) in group AB, which is consistent with the general Japanese population. The proportion of men with PCa in each blood group was 327 (39.4%) in group A, 252 (30.4%) in group O, 185 (22.3%) in group B, 66 (8.0%) in group AB (P=0.034). There was no significant difference between the B blood group and non-B blood group in terms of age, PSA, DRE, family history, prostate volume, and BMI. Univariate analyses indicated that the B blood group was significantly associated with PCa detection compared with non-B blood group (P=0.019). Multivariate analyses indicated that the B blood group has a significant association with not only PCa (Odds ratio 1.43; P=0.018) but HGCa detection (odds ratio 1.38; P=0.047).
Conclusion: This is the first report to show the significance of the B blood group in the detection of prostate cancer.

UP.421
Zinc/PSA Ratio as a Novel Biomarker for Prostate Cancer Detection
Temiz M, Cakir O, Kandirali E, Colakerol A, Kücük S, Aykan S, Tüken M, Yürük E, Semercioz A
Bagcilar Training and Research Hospital, Istanbul, Turkey

Introductıon and Objectıves: Although Prostate Specific Anthigen (PSA) is a useful marker for detection of prostate cancer, its specificity is not sufficient. Several PSA variations were defined in order to increase the specificity of the test, but they are not much more effective than the PSA alone for detection of disease. Former studies reported that serum and prostatic tissue zinc levels decreased in prostate cancer disease. One of them confirmed that measurement of serum zinc levels improves prostate cancer detection efficiency in patients with PSA levels between 4 ng/mL and 10 ng/mL. We hypothesized that usage of the two parameters (zinc and PSA) whose serum levels are changing in prostate cancer disease together can improve detection efficiency of the disease. In this study we aimed to establish the utility of serum zinc/PSA ratio for detection of prostate cancer.
Materials and Methods: Between July 2012 and January 2013, 480 patients with elevated serum PSA levels (>2.5 ng/mL) and/or suspicious digital rectal examination were included to the study. The serum zinc, PSA, zinc/PSA and percent free PSA levels were detected. Transrectal ultrasound (TRUS) guided prostate biopsy was performed to these patients by using the standard 10 core technique. The patients were divided into prostate cancer and control cohorts according to the pathological findings. These markers were evaluated by statistically considering to their diagnostic values for prostate cancer.
Results: Although no significant difference was detected on the mean levels of the serum zinc (127.33 µg/dL-131.15 µg/dL. p=0.350) levels between the two groups, there were significant differences on the serum PSA (7.62 ng/mL-5.23 ng/mL. p=0.0001), percent free PSA (0.17-0.23. p=0.0001) and zinc/PSA (150.8-239.6. p=0.0001) median levels between the two groups. By using receive operating characteristic (ROC) analysis and comparing area under curve (AUC) levels, we did not find significant differences between serum zinc/PSA with PSA and zinc/PSA with percent free PSA levels (p=0.209 and p=0.790).
Conclusions: In the present study we established that even though there is no gain an advantage over PSA and percent free PSA, the diagnostic value of the serum zinc/PSA ratio is similar to serum PSA and percent free PSA levels according to the similar AUC levels. Due to our results, serum zinc/PSA level might be alternatively a useful marker for detection of prostate cancer and further studies are needed to confirm this topic.

UP.422
Should We Take More Samples by Transrectal Ultrasound-Guided Biposy from Every Patient with Large Prostate? A Retrospective Analysis of 2079 Patients
Kandirali E**, Temiz M**, Colakerol A, Cakir O, Yuruk E, Aykan S, Tuken M, Binbay M, Muslumanoglu A, Semercioz A
Bagcilar Training and Research Hospital, Istanbul, Turkey

Introduction and Objectives: Transrectal ultrasound guided prostate biopsy (TRUS-bx) is the gold standard for the diagnosis of prostate cancer. Usually, 10 or 12 core biopsy sample are taken by this method. There has been a tendency to obtain more samples from large prostate to increase the cancer detection success in recent years. The aim of this study is to define the patient group who needs to be taken more biopsy samples.
Materials and Methods: We included the 2079 patients who had been undergone 10 core TRUS-bx because of their serum PSA level>2.5ng/ml and/or suspicious digital rectal examination in this study. Prostate volumes were measured by TRUS. Patients were divided into three groups according to the PSA levels: Group 1, patients with serum PSA level ≤ 10ng/ml; Group 2, patients with serum PSA level between 10-20ng/ml and Group 3; patients with serum PSA level >20ng/ml. Every group was divided into two groups according to having cancer or not. Ages and prostate volumes of the patients were compared statistically.
Results: The mean age, prostate volume and serum PSA levels were 66.6±8.6 years, 58.5±30.8ml and 26.5±16.4ng/ml respectively. Overall cancer detection rate was 22%. Cancer detection rates were 16%, 25%, 53% in Group 1, 2, 3 respectively. Mean prostate volume of the patients with and without cancer was 49.8±25.2ml, 60.9±31.8 ml, respectively (p=0.08). There was no statistically significant difference between the groups in terms of age. There was a statistically significance on the prostate volumes between patients with and without cancer only in Group 1 (58.2±31.5ml without cancer, 45.7±21.2ml with cancer, p=0.019).
Conclusions: Our results figure out that, more than 10 core samples should be taken from the patients with serum PSA level ≤10ng/ml and

with large prostate volume. Further study is needed to determine how many cores should be taken from different prostate volumes.

UP.423

Impact of Local Anesthesia Type on Cancer Detection Rate in Transrectal Ultrasound Guided Prostate Biopsy

Temiz M, Kandirali E, Colakerol A, Ertas K, Gonultas S, Serefoglu E, Tuken M, Cakir O, Atilla S
Bagcilar Research and Training Hospital, Istanbul, Turkey

Introduction and Objectives: Studies about the anesthesia techniques during transrectal ultrasound guided prostate biopsy (TRUS-Bx) are usually focused on pain relief. Although patient tolerance is an important issue in TRUS-Bx, cancer detection rate (CDR) must not be ignored. In this study, we compared the impact of intrarectal lidocaine gel anesthesia (IRLA) and periprostatic nerve blockade (PNB) techniques on CDR and pain relief.
Materials and Methods: A total of 422 patients who had been undergone 10 core TRUS-Bx because of elevated serum prostate specific antigen (PSA) level (>2.5ng/ml) and/or suspicious digital rectal examination findings. Patients were divided into two groups according to the anesthesia technique applied; group1: IRLA and group2: PNB. Age, serum PSA level, prostate volume, visual analogue scale (VAS) score and pathological findings were recorded and compared statistically with chi square and unpaired t-test.
Results: The mean age, serum PSA and prostate volume and level of patients were 64.5±7.9 years, 58.1±27.7 cc and 12.8±17.2 ng/mL, respectively. Of the patients 126/422 (29.9%) underwent TRUS-Bx by using IRLA whereas 296/422 (70.1%) by PNB technique. The mean, age, serum PSA and prostate volume were not different between the two groups. CDR was 19.8% and 25.4% in Group 1 and 2 respectively (p=0.001). Mean VAS score of the Group 2 (1.84 ± 0.89) was significantly lower than the Group 1 (3.62±1.06) (p=0.001).
Conclusions: Our results revealed that PNB is superior to IRLA in terms of pain relief and CDR. Further studies are required to confirm our findings.

UP.424

Multiparametric Magnetic Resonance Targeted Biopsy with Cognitive Guidance

Hernando Arteche A, Garde García H, Useros Rodriguez E, Paños Fagundo E, Quijano Barroso P, Martinez Benito M, Alpuente Roman C, Vallejo Desviat P, Martín García A, Moreno Reyes A, Cabrera Cabrera J, García Murga J
Hospital Central de la Defensa Gómez Ulla, Madrid, Spain

Introduction and Objectives: Multiparametric magnetic resonance imaging (mpMRI) has enabled image-guided detection of prostate cancer (PCa) suspected zones. Imaging fusion can be performed either cognitively or electronically, using a fusion device. The aim of the study was to evaluate the rates of PCa diagnosis using mpMRI targeted biopsies with cognitive guidance.
Materials and Methods: Twenty eight consecutive patients (mean age, 66.3 years; mean PSA, 8.77 ng/ml; mean prostate volume, 60.7 cc, median previous prostate biopsy, 2 [1-4]) with at least one prior negative TRUS-guided prostate biopsy and persistent suspicion of PCa were included in this study. All patients underwent mpMRI at 1.5 Tesla and PI-RADS classification system. Magnetic resonance imaging (MRI) includes a combination of high resolution T2- weighted morphological sequences and the multiparametric techniques of diffusion-weighted MRI (DWI), dynamic contrast-enhanced MRI (DCE) and proton MR spectroscopy (H-MRS). We performed mpMRI targeted biopsies with cognitive guidance to suspicious lesions under anesthesia in an outpatient surgical setting.
Results: PCa was detected in eleven patients (39.3%) who were all clinically significant. Cancer detection for patients with low, intermediate and high suspected lesions on PI-RADS were 12.5%, 28.6% and 61.5% (p=0.055). A total of 36.4% of cancer patients were at intermediate or high risk according to D'Amico score. No relationship was found between PI-RADS classification and PSA or D'Amico score.
Conclusion: Mp-MRI and cognitively targeted prostate biopsy seems to be effective for the detection of clinically significant PCa in patients with previous negative TRUS-guided biopsies. PI-RADS score seems to improve diagnostic of PCa, in accordance with recent literature.

UP.425

Relation between PSA Values Measured before, during and after Prostate Biopsy and Positive Core Percentage in Prostate Cancer Patients

Goger Y**, Kilinc M**, Esen H
Dept. of Pathology, Faculty of Medicine, Necmettin Erbakan University Meram, Konya, Turkey

Introduction and Objectives: Prostate specific antigen (PSA) values of prostate cancer patients have been measured during and after prostate biopsy. We analyzed the relation between positive core percentage and changes in the PSA values.
Materials and Methods: Pathology results of 151 prostate cancer patients diagnosed after biopsy with TRUSG were evaluated in the present study. PSA values were measured right after right lobe and left lobe biopsies, (PSA2, PSA3), 30 minutes later (PSA4), and 24 hours later (PSA5). Fluctuations in the PSA values of cancer patients were studied. Positive core percentage in the biopsy pathology was compared in order to reveal the correlation between prostate cells cancer spread and PSA fluctuations. Patients were divided into four groups according to positive core percentage. Thus, Group 1 consisted of patients with a positive core under 25%, Group 2 between 25-50%, Group 3 between 50-75%, and Group 4 between 75-100% (Table 1). Changes in PSA1, PSA2, PSA3, PSA4, and PSA5 values among the groups have been compared using pair's difference test (Table 2). The relation between changes in the compared pairs and tumor core percentages was also evaluated.
Results: PSA1, PSA2, PSA3, PSA4, and PSA5 values of 151 prostate cancer patients were evaluated. In prostate cancer patients, there is no statistically significant difference in the

UP.425, Table 1. PSA Values of the Groups Divided According to Core Percentages with Tumor

	Group 1: Core percentage with tumor <25% (n:39)			Group 2: Core percentage with tumor 25-50% (n:56)			Group 3: Core percentage with tumor 50-75% (n:25)			Group 4: Core percentage with tumor 75-100% (n:30)		
	Mean	Std. Deviation	Std. Error Mean	Mean	Std. Deviation	Std. Error Mean	Mean	Std. Deviation	Std. Error Mean	Mean	Std. Deviation	Std. Error Mean
PSA1	16.54	26.873	4.418	30.31	35.666	4.809	47.93	47.159	9.626	78.43	57.549	10.876
PSA2	55.51	44.256	7.276	69.14	50.137	6.760	90.19	51.650	10.543	91.39	66.035	12.479
PSA3	65.11	46.180	7.592	87.78	54.002	7.282	90.30	51.019	10.414	95.16	65.100	12.303
PSA4	52.89	41.317	6.792	79.50	51.783	6.982	83.48	52.876	10.793	93.66	65.907	12.455
PSA5	29.10	28.859	4.744	57.14	45.973	6.199	60.67	49.906	10.187	88.88	70.550	13.333

UP.425, Table 2. Comparison of the Groups Divided According to Core Percentages with Tumor

	Group 1: Core percentage with tumor <25% (n:39)			Group 2: Core percentage with tumor 25-50% (n:56)			Group 3: Core percentage with tumor 50-75% (n:25)			Group 4: Core percentage with tumor 75-100% (n:30)		
	Mean	Std. Deviation	Sig	Mean	Std. Deviation	Sig	Mean	Std. Deviation	Sig	Mean	Std. Deviation	Sig
PSA2 - PSA1	38.96	38.20	.000	38.82	39.36	.000	42.25	48.42	.000	12.957	31.175	.037
PSA3 - PSA1	48.57	39.64	.000	57.46	50.71	.000	42.37	48.08	.000	16.732	34.119	.015
PSA4 - PSA1	36.34	32.51	.000	49.18	45.27	.000	35.54	45.40	.001	15.232	30.732	.014
PSA5 - PSA1	12.55	10.36	.000	26.82	33.73	.000	12.74	18.83	.003	10.443	31.500	.091
PSA3 - PSA2	9.60	18.97	.004	18.64	35.77	.000	0.112	2.82	.847	3.775	11.618	.097
PSA4 - PSA2	2.62	19.87	.426	10.36	33.78	.027	6.71	15.86	.050	2.275	7.400	.115
PSA5 - PSA2	26.41	33.34	.000	11.99	40.51	.032	29.51	42.83	.003	-2.514	10.261	.206
PSA4 - PSA3	12.22	17.62	.000	8.28	15.19	.000	6.82	16.24	.051	-1.500	7.672	.310
PSA5 - PSA3	36.01	33.49	.000	30.64	39.65	.000	29.62	43.12	.003	-6.289	15.594	.042
PSA5 - PSA4	23.79	26.23	.000	22.35	34.11	.000	22.80	39.57	.010	-4.789	9.181	.010

PSA2-PSA4 pair (p>0.05); yet for PSA1-PSA2, PSA1-PSA3, PSA1-PSA4, PSA1-PSA5, PSA2P-SA3, PSA2-PSA5, PSA3-PSA4, PSA3-PSA5, PSA4-PSA5 pairs there are (p<0.05). The higher the positive core percentages became, the higher was the proximity among the compared pairs. In the group with a core percentage less than 25% only the comparison of PSA2-PSA4 pair was statistically insignificant; however, above 50% the pair comparisons PSA2-PSA3, PSA2-PSA4, and PSA3-PSA4 were not statistically significant.

Conclusions: The higher the proximity between PSA compared pairs, the higher was the increase in the Core percentage with tumor. Tumors can be claimed to be more aggressive and widespread in patients with high proximity in their PSA compared pairs.

UP.426

Is Estimated Glomerular Filtration Rate a Significant Predictor of Prostate Cancer?

Isono M, Sato A, Tsujita Y, Kuroda K, Asakuma J, Horiguchi A, Seguchi K, Ito K, Asano T
National Defense Medical College, Tokorozawa, Japan

Introduction and Objectives: Patients with chronic kidney disease (CKD) reportedly have increased prostate cancer detection rates. We investigated whether estimated glomerular filtration rate (eGFR), a practical marker for CKD, is a significant predictor of prostate cancer.

Materials and Methods: Reviewing the records of the 426 men who underwent transrectal prostate needle biopsy at our institution between January 2011 and November 2013 (median age 71 years, range 42–87), we classified the patients into groups A (eGFR <60 ml/min/1.73 m^2) and B (eGFR ≥60 ml/min/1.73 m^2) and used Mann–Whitney U-tests and logistic regression analyses to evaluate the predictive significance of age, total PSA, digital rectal examination (DRE) findings, prostate volume, trans-rectal ultrasound findings, number of biopsy cores, number of biopsies, and eGFR.

Results: Median total PSA was 8.582 ng/mL (range 2.664–4058), and cancer was detected in 212 patients. The cancer detection rate in Group A, 59.8%, was higher than that in Group B, 46.1% (p = 0.0133), but the patients in Group A were also older (p <0.0001) and had a higher total PSA (p = 0.0001). In univariate analysis the significant predictors of prostate cancer were age (p <0.0001), total PSA (p <0.0001), nodule on DRE (p <0.0001), prostate volume (p <0.0001), hypoechoic lesion (p <0.0001), number of cores (p = 0.0009), number of biopsies (p <0.0001), and eGFR (p = 0.0417). In multivariate analysis the significant predictors were also age (p = 0.0003), total PSA (p = 0.0001), prostate volume (p <0.0001), and hypoechoic lesion (p = 0.0284) but not eGFR (p = 0.1578). Age was correlated with serum creatinine (p <0.0001) and was also a significant predictor of eGFR <60 ml/min/1.73 m^2 (p <0.0001).

Conclusion: The cancer detection rate was higher in Group A, but in multivariate analysis eGFR was not a significant predictor of prostate cancer. eGFR is of limited use in predicting prostate cancer because it is significantly influenced by age.

UP.427

Comparison between Transrectal Ultrasound (TRUS) Guided Biopsy of Prostate Complications in Patients Undergoing Apical versus Bi-Basal Injection of Local Anaesthetic: A Single Centre Experience

Katmawi-Sabbagh S, Payne D, Al-Sudani M, Khan Z
Kettering General Hospital, Kettering, UK

Introduction and Objectives: We performed a prospective cohort study to clarify if there is any differences in pain and other complications in apical versus bi-basal anaesthetic infiltration given prior to TRUS biopsy of prostate.

Materials and Methods: We prospectively assessed 78 patients who underwent TRUS guided prostate biopsies. Bupivacaine 0.5% (10mls)

was administered at the apex of the prostate in 38 patients and bi-basally in 40 patients. All patients were given questionnaires to fill scoring the pain from 0-2 (no, or mild pain) – 3-6 (moderate pain) and 7-10 (severe pain) both at 24 hours and 2 weeks after the procedure. Secondary end points included other complications such as bleeding, LUTS, and UTIs.
Results: At 24 hours the pain scores were fairly similar with majority of patients scoring no or mild pain (76.32% in the apical group vs. 67.5% in the bi-basal group) with slight favourability towards experiencing no pain (i.e.: scoring 0) in the apical administration group (47.37% vs. 37.50%) were documented. At 2 weeks, no patients in the bi-basal group reported any severe pain, while some did in the apical group (10.52% in the apical group vs. 0% in the bi-basal). UTI's occurred in 12.8% of patients with no statistical difference in both groups. LUTS and Bleeding from different sites were higher incidences in the bi-basal group as demonstrated in Table 1.
Conclusion: Although the route of peri-prostatic infiltration of Bupivacaine does not affect the total number of patients experiencing pain however, the pain severity and timing is different. More post procedural complications documented after bi-basal anaesthetic infiltration compared to apical one. Further studies are required to help us understanding these pain and other complications differences.

UP.427, Table 1.

Complication	Apical group (%)	Bi-basal group (%)
Hemauria	58	70
Hematospermia	39.5	52.5
Blood in stool	13.2	20
LUTS	21.1	32.5

UP.429
Is Multi-Parametric MRI (MP-MRI) Alone Sufficient in Monitoring Prostate Cancer for Patients in Active Surveillance?
James A, Gooneratne A, Bhat A, Henderson A
Maidstone and Tunbridge Wells NHS Trust, Maidstone, UK

Introduction and Objectives: 2014 NICE guidelines support the use of Multi-Parametric MRI (MP-MRI) in Active Surveillance of prostate cancer after year 1 of follow-up. We investigated if this is currently justified based on audited outcome from two 3T MP-MRI scanners.
Materials and Methods: This retrospective audit assessed patients who underwent both >32 core template biopsy (reference standard) and MP-MRI between June 2010 and November 2013. Patients who had undergone both MP-MRI and template biopsy within 6 months of each other were included (n=166). Pathology and radiological reports compared template biopsy findings with MP-MRI suggesting disease in that prostate hemisphere.
Results: We found that whilst sensitivity of MP-MRI in prostate cancer diagnosis was 88.3%, specificity was 11.1%. The positive and negative predictive values were 61.90% and 36.8% respectively. The positive likelihood ratio was 1.0.
Conclusions: Our results suggest that using MP-MRI to predict prostate cancer by hemisphere results in over-diagnosis of prostate cancer, when all MP-MRI radiologists reported. Specialist reporting and further protocol optimisation may help us to further improve results. Current MP-MRI outcomes may falsely encourage men to cease active surveillance. This is probably not justified unless histology from template biopsy demonstrates that core volume or cancer grade has increased.

UP.430
Nomogram Including Prostate Cancer Gene 3 Score and PSA Free/Total Ratio Predicts Significant Prostate Cancer in Biopsy Specimen
Ohigashi T[1], Yamashita H[1], Koshida T[1], Arakawa T[1], Mizuno R[2], Nakashima J[3]
[1]IUHW Mita Hospital, Tokyo, Japan; [2]School of Medicine, Keio University, Tokyo, Japan; [3]Tokyo Medical School, Tokyo, Japan

Introduction and Objectives: The clinical value of prostate cancer gene 3 (PCA3) score for predicting tumor aggressiveness is still inconsistent. In this study, we investigated that PCA3 sore and other parameter can predict 'significant carcinoma' in biopsy specimen.
Materials and Methods: Urinary PCA3 score and other parameters were measured in 63 patients with PSA ≤20 ng/ml before receiving systemic transrectal needle biopsy (at least 12 cores). Prostate cancer was detected in 37 men, of whom 10 patients were suspected as 'insignificant prostate cancer' according to the Prostate Cancer Research International: Active Surveillance (PRIAS) criteria. Urinary PCA3 score was quantified using GEN-PROBE™ PCA3 assay.
Results: According to Receiver operating characteristics (ROC) analysis, PCA3 score had the greater AUC for predicting all prostate all cancer (0.827) as well as positive core more than 2 (0.792) when compared with other PSA-associated markers. PCA 3 score was significantly higher in significant cancer patients than in others (p=0.009, Mann-Whitney test). However, ROC predicting significant cancer showed PCA3 score showed less AUC (0.731) than PSA free/total (F/T) ratio (0.801). A stepwise multivariate logistic regression analysis revealed that both PSA F/T and PCA3 score were the independent significant predictors of significant cancers. Using these two factors, a nomogram was developed to predict significant cancers in biopsy. In ROC analysis, the value of nomogram showed a greater AUC (0.823) than any other single factors.
Conclusion: Because PSA F/T ratio and PCA3 sore were measured easily from the patient's sample, this nomogram seems to be useful for men with moderately elevated PSA to introduce more precise clinical management plans, including the decision of biopsy.

UP.431
The Value of Multiparametric Prostatic MRI in the Detection of Cancer
Magalhães Pina J[1], Campos Pinheiro L[1], Lopes Dias J[1], Nobre Lucas R[2], Melo Rocha P[1], Meirinha A[1], Baltazar P[1], Mateus Marques R[1]
[1]Hospital de São José, Lisbon, Portugal; [2]Hospital de Santo António dos Capuchos, Lisbon, Portugal

Introduction and Objectives: Multiparametric Magnetic Resonance Imaging of the prostate (Mp-MRI) allows the detection, localization and characterization of suspicious lesions for prostate cancer (PCa). When done prior to the diagnosis it also allows targeting of the biopsy, significantly improving the performance of the standard random prostate biopsy. Our objective is to assess the value of Mp-MRI before prostate biopsy, allowing targeted sampling of suspicious PCa lesions and comparing the results with standard randomized prostate biopsy.
Materials and Methods: Thirty patients aged 61-67 were selected with a PSA greater than 4ng/mL (PSA between 5.6 – 19.2) and with suspicious PCa lesions on Mp-MRI (Pi-RADS 3-5). A total of 75 suspicious lesions were detected. All biopsies were performed by the same Urologist (JMP), using trans-rectal ultrasound guidance and after previous visualization of MRI images. Sampling was targeted to the area considered suspicious on MRI, using a Cognitive Fusion Technique, collecting two samples per area. After that, a double-sextant standard prostate biopsy was also done in all patients. The variables used for statistical analysis were PCa detection rate and amount of cancer per sample.
Results: Twenty two patients were diagnosed with PCa. In 5 patients, cancer was only detected on targeted cores. Targeted biopsies diagnosed 23% more PCa when compared to random biopsies (p<0,001), and almost doubled the amount of cancer per sample (p<0,001). The overall PCa detection rate was 61% for all samples. A total of 360 fragments were collected from standard randomized prostate biopsy, of which 169 were positive for PCa (47%), with a median Gleason score of 6 (3+3). The median amount of cancer per sample was 25% (5%-85%). There were 105 of 150 fragments collected by cognitive fusion targeted biopsies that were positive for PCa

(70%). The median Gleason score was 7(3+4) with a median amount of cancer per sample of 45% (10%-90%).
Conclusions: Multiparametric prostatic MRI detects areas highly suspicious for PCa, allowing targeted biopsies, which increases diagnostic accuracy and improves the detection of clinically significant PCa.

UP.432
The Role of MRI-Targeted Prostate Biopsy in Patients with Previous Negative Biopsies and Elevated PSA Levels
Kubota Y[1], Nagai S[1], Maeda S[1], Horie K[2], Uno H[3]
[1]Toyota Memorial Hospital, Toyota, Japan; [2]Gifu University Hospital, Gifu, Japan; [3]Kouseiren Chu-nou Hospital, Seki, Japan

Introduction and Objectives: The efficacy of adding MRI-targeted prostate biopsy to the standard systematic 12-core biopsy in patients with previous negative biopsy results was evaluated.
Materials and Methods: Between October 2012 and February 2014, 24 patients with persistently increasing PSA levels were studied prospectively. The average age, PSA level at re-biopsy, and PSA velocity were 66 years, 11.7ng/mL, and 1.92ng/mL/year, respectively. All patients were examined with combined T2-weighted and diffusion-weighted MRI before undergoing the prostate biopsy. A total of 12 cores were obtained transperineally from each patient; 2 from the transition zone and 10 from the peripheral zone. Additional 4-core targeted biopsies were performed of the site with abnormal MRI findings. If the patients had normal MRI findings, additional 4-core biopsies were performed to the anterior part.
Results: Among a total of 24 cases, 15 patients had abnormal MRI findings (62.5%), and 9 (37.5%) had prostate cancer. The average number of positive cores at re-biopsy was 2.6; 6 cases were Gleason score 6, 2 were Gleason score 7, and 1 was Gleason score 8. For MRI, the overall sensitivity for predicting positive biopsies was 88.8%, with a specificity of 53.3%. On analysis by dividing all biopsy cores into the targeted cores and standard cores, prostate cancer was found in 12/108 (11.1%) MRI-targeted cores and 11/208 (5.2%) standard cores. In 3 cases, prostate cancers were detected only in additional MRI-targeted cores. If only the standard systematic 12-core biopsies were performed without MRI-targeted biopsies, 3 cases with prostate cancer might have been missed. One of these 3 cases was Gleason score 8.
Conclusion: We suggest that MRI-targeted biopsy be considered for the detection of prostate cancer in patients with previous negative biopsies and elevated PSA levels.

UP.433
The Free Prostate-Specific Antigen Ratio as a Predictive Factor for Developing Abnormal Levels of Total Prostate Specific Antigen (>4.0 Ng/Ml) in Patients with Low Total Prostate-Specific Antigen at Initial Screening
Sasaki M[1], Ishidoya S[2], Ito A[3], Numahata K1, Shibuya D[4], Arai Y[3]
[1]Yamagata Prefectural Central Hospital, Yamagata, Japan; [2]Sendai City Hospital, Sendai, Japan; [3]Tohoku University Graduate School of Medicine, Sendai, Japan; [4]Miyagi Cancer Society, Sendai, Japan

Introduction and Objectives: The present study investigated whether the free prostate-specific antigen ratio (%fPSA) can be used to efficiently identify patients with low total prostate-specific antigen (PSA) at initial screening who are likely to subsequently develop abnormal PSA (>4.0 ng/mL).
Materials and Methods: Free PSA levels have been measured in addition to PSA levels in all patients undergoing prostate cancer screening at Tohoku University and the Miyagi Cancer Society since July 2001. A total of 9,522 patients underwent prostate cancer screening at our institution between July 2001 and June 2011. Among these patients, 6,374 aged 40-79 years with PSA ≤4.0 ng/mL at initial screening who had been screened at least twice were retrospectively investigated regarding changes in PSA level. The observation period was calculated from the day of initial screening to the point that PSA increased to >4.0 ng/mL or to June 2011, whichever was earlier. Patients who developed abnormal PSA (>4.0 ng/mL) levels were divided into four quartile groups based on the %fPSA at initial screening, and the percentage of patients that developed abnormal PSA over time was calculated for each group using the Kaplan-Meier method. Relative risk was also calculated using the Cox proportional hazards model.
Results: The median (range) PSA at initial screening and %fPSA were 0.86 ng/mL (0.1-4.0 ng/mL) and 28.8% (3.8-99.5%), respectively. A total of 341 patients developed abnormal PSA after a median of 34 months (range, 10-95 months). The median number of screenings was 3 (range, 2-8). The percentage of patients that developed an abnormal PSA level and the relative risk (with the >28.2% group set as 1) for each for the initial %fPSA quartile groups were as follows: <15.7% group: 31.5%, 7.0; 15.7-20.9% group: 22.8%, 3.7; 21.0-28.2% group: 18.4%, 2.3; and >28.2% group: 9.8%, 1. Significant differences were observed among the groups ($p<0.0001$).
Conclusion: Measuring %fPSA may facilitate the efficient identification of patients likely to develop abnormal PSA levels, as well as the establishment of suitable screening intervals.

UP.434
Prospective Analysis of Emotional Distress Provoked by TRUS Guided Prostate Biopsy
Vukotic V, Filipovic N, Spasic D, Savic S
Clinical Center, Belgrade, Serbia

Introduction and Objectives: Treatment of prostate cancer has changed a lot in recent few years. Watchful waiting or active surveillance has been recognized as a valuable option in patients with low risk prostate cancer. Although there have been changes in treatment strategies, diagnostic algorithm remained the same. PSA value and digitorectal finding are main parameters on which indication for biopsy is made. PSA is the most questionable one since the threshold for biopsy is getting lower, which results in more men being biopsied, with cancer detection with low level PSA (<4ng/ml) being about 20%. Risk stratification is advisable in order to maximize the benefits of prostate cancer diagnosis and to reduce potential harms of over diagnosis. One of the potential harms which have not been adequately taken into account is the potential long term emotional distress induced by the suspicious prostate malignancy. The aim of this study was to evaluate the emotional distress in patients in whom prostate biopsy have been performed, particularly if cancer have not been found. According to our personal experience, younger, more educated and better informed men are most prone to be on long-term, emotionally affected by the biopsy, even if the result is negative.
Materials and Methods: In order to measure the psychological distress, we used a "Memorial Anxiety Scale for Prostate Cancer". Of 276 patients in whom prostate biopsy was performed in the 6-month period for elevated PSA and/or suspicious DRE, 142 were randomly selected to answer the questionnaire. In the questionnaire, along with the anxiety scale, were included items addressing demographics (age, educational level, and marital status), clinical data (PSA, previous interventions/surgeries) and the information about physical activity. Of those 142 patients, cancer was detected in 91 (Group 1), 51 patients were cancer free (Group 2). Group 3 was a control group formed by 50 patients who consulted for BPH and also answered to the questionnaire. All three groups were retested after 6 months.
Results: The "Scale" was considered reliable (Cronbach α coefficient: 0.94). At initial testing, the first group was the most anxious one. Age of the patient and PSA value were not associated with anxiety (Perason correlation, p: 0.29). There were no statistically significant association between marital status, educational level and anxiety. Only physical activity was inversely associated with anxiety (T test, p: 0.48). On retest, after six months, in all three groups anxiety was lower which might be the result of retesting, but biopsied, cancer free

patients did not achieve the low level of anxiety as BPH patients.
Conclusion: Neither age, PSA level, nor marital status had significant impact on anxiety. In our patients, prostate biopsy did not result in major psychological distress in the six months period following biopsy although cancer free patients after biopsy maintained higher level of anxiety then BPH patients.

UP.435
Age-Specific Serum Prostate-Specific Antigen Ranges among Lagos Civil Service Men without Prostate Cancer
Ikuerowo S[1], Ajala M[2], Abolarinwa A[3], Omisanjo O[1]
[1]Lagos State University College of Medicine, Ikeja, Lagos, Nigeria; [2]Lagos State Pathology Services, General Hospital, Lagos, Nigeria; [3]Lagos State University Teaching Hospital, Ikeja, Lagos Nigeria

Introduction and Objectives: Serum prostate-specific antigen (PSA) levels increase with age and vary among different races and communities. The study was aimed at defining the age-specific ranges of serum PSA in our environment.
Materials and Methods: We evaluated the relationship between age and serum PSA levels and the age-specific reference ranges of serum PSA among civil service men in Lagos who underwent routine medical checkups. Criteria for inclusion were men who have no lower urinary tract symptoms, normal digital rectal examination and serum PSA ≤20ng/ml. SPSS Statistic 21 was used for data evaluation and the mean, median, 95th percentile PSA levels were estimated. Pearson's correlation was used to examine the relationship and $p<0.05$ was considered significant.
Results: The number of men who met the criteria for inclusion in the evaluation was 4032. The mean age was 51.6 (range 40-70) years and there was a strong correlation between serum PSA levels and age ($r=0.097$, $p<0.001$). PSA ranges of 0-2.5, >2.5-4.0, >4.0-10ng/ml were found among 3218 (80%), 481 (12%), 284 (7%) and 52 (1%) respectively. The mean, median and the 95th percentile PSA for the overall group were 1.84, 1.33 and 5.2ng/ml respectively. However the 95th percentile PSA levels for men aged 40-49, 50-59 and 60-70 years were 4.78, 5.47 and 8.93ng/ml respectively.
Conclusion: The age-specific PSA levels among Nigerian men for each age group are higher than what was previously described for men in the Western world.

UP.436
Digital Rectal Examination Is an Important Tool in Aiding Diagnosis of Prostate Cancer at an Early Stage
Walsh A, Considine S, Thomas A, Casey L, O'Brien M, Lynch T, Manecksha R
Dept. of Urology, St. James's Hospital, Dublin, Ireland

Introduction and Objectives: There is currently no standardised screening programme for prostate cancer in Europe. Risk assessment is opportunistically undertaken in consultations between patients and their general practitioner. Evaluation of the prostate gland consists of a Prostate Specific Antigen (PSA) serum level and a digital rectal examination (DRE) of the gland. DRE forms a key screening tool that can independently predict prostate cancer in the setting of a normal PSA level. The aim of this study is to evaluate the clinical usefulness of the digital rectal examination in both general practice and the urology outpatient clinics, and to ascertain the positive predictive value and sensitivity of this.
Materials and Methods: Review of prospectively collected data. We analysed patient demographics, PSA levels and DRE findings from a prospectively established database and hospital data systems from May 2009 to October 2013.
Results: Of 103 men referred over a 53 month period with a normal PSA level, 67% were referred on the basis of an abnormal DRE alone. Thirty five percent of all the men with a normal PSA were found to have prostate cancer. DRE alone was found to have a sensitivity and specificity of 81% and 40% respectively in diagnosing prostate cancer with a positive predictive value of 42%. Seventy six percent of these had high grade disease on TRUS biopsy pathology.
Conclusion: DRE is a key part of the assessment of prostate cancer risk. In itself it can independently identify patients at risk of prostate cancer, with a substantial proportion of these having significant disease requiring treatment. In this study we have reinforced that we should not be reassured by normal PSA levels in the setting of suspicious clinical findings.

UP.437
Impact of Initial PSA Level on Biochemical Failure Free Survival (BFFS) following Radical Prostatectomy for the Prostate Cancer Detected in Community-Based PSA Mass Screening Program in Saga, Japan
Tokuda Y, Udo K, Tobu S, Kakinoki H, Nanri M, Kurata S, Ichibagase Y, Takahara K, Noguchi M, Uozumi J
Saga University, Saga, Japan

Introduction and Objectives: Key points of our screening program are, as the first step, recruitment of participants who undergo PSA test, and the second step, examination including prostate biopsy for the participants with PSA over 4.0 ng/ml. Patients in whom prostate cancer was detected with PSA over 10 ng/ml is not rare in our screening program. The present study was conducted to assess the impact of pre-operative PSA level, gray zone or over 10 ng/ml, on biochemical failure following radical prostatectomy for the patients detected in the screening program.
Materials and Methods: Clinico-pathological characteristics and BFFS were evaluated in 190 patients who underwent radical prostatectomy in our hospital between 2003 and 2014. The data were analyzed in two groups according to the preoperative PSA level, 4.0 to 10 ng/ml (gray zone group) and 10 to 20 ng/ml (PSA>10 group). The median follow-up was 50.2 months (1 to 120.8). There was no cancer related death in either group during the follow-up period.
Results: Clinical stage, pathological stage, Gleason score, extra prostatic extension rate, positive margin rate and seminal vesicle invasion rate of PSA>10 group were statically higher than those of gray zone group. As a matter of course BFFS rate of gray zone group was higher than that of PSA>10 group. When the patients with Gleason score 8 or more were excluded, there was no statistical difference in BFFS rate between the two groups. Our data clearly demonstrated that pre-operative PSA>10 is one of the critical PSA failure risk. Two thirds of patients with PSA 10-20 ng/ml showed Gleason score 7 or less in biopsy. Those patients might be cured by radical prostatectomy as effectively as gray zone PSA cases. However, we cannot identify those low risk patients without prostate biopsy. Early detection and early treatment is still important in cancer screening program.
Conclusion: To establish much more effective PSA mass screening program, aggressive encouragement to the second step examination including prostate biopsy for the participants with abnormal PSA greater than 4.0 ng/ml is required.

UP.438
Prognostic Significance of Very-Low and Low Risk Prostate Cancer of NCCN Guideline in Japanese Population
Takizawa I[1], Ohori M[1], Ohno Y[1], Yoshioka K[1], Nakashima J[1], Aoyagi T[2], Tachibana M[1]
[1]Tokyo Medical University, Tokyo, Japan; [2]Tokyo Medical University Ibaraki Medical Center, Ibaraki, Japan

Introduction and Objectives: To validate the prognostic significance of NCCN guideline for prostate cancer, especially very low and low risk cancer.
Materials and Methods: We studied the 751 patients with clinical stage T1-3N0M0 prostate cancer who were treated with radical prostatectomy at Tokyo Medical University during 12 years between 2001 and 2012. Patients with neoadjuvant treatments were excluded. Patients were divided into 4 groups of NCCN guideline to assess its prognostic significance by Kaplan-meier analysis and correlation with pathologic features.
Results: Overall, a total of 212 patients (28.2%) had a biochemical recurrence (BCR)

with 69±2% non-BCR rate at 5 years after a surgery. Of the 751 patients, 45, 137, 350 and 219 patients were categorized into very low, low, intermediate or high risk group of NCCN guideline. Non-BCR rates at 5 years for each risk group were 86.9%, 81.1%, 75.1% and 49.0%, respectively. While non-BCR for patients with very low and low risk were significantly better than those with intermediate or high risk cancer (p<0.0005), there was no significant difference between patients with very low and low risk (p=0.56). In the analyses of radical prostatectomy specimens, the frequencies of non-confined cancer (≥pT3), positive surgical margins and Gleason score ≥7 cancers were significantly increased as the risk group was advancing (p<0.0005 for all). But the frequencies of >pT3 cancer and positive surgical margins were not significantly different between patients with very low and low risk cancer (p=0.223 and p=0.161), respectively).
Conclusion: In general, NCCN guideline provides the useful information for clinical decision to select initial treatment. However, it seems to be difficult to recommend the initial treatment such as active surveillance to patients with very low and low risk cancer solely based on the distinction of very low and low of NCCN guideline.

UP.439

Targeted Prostate Biopsy with Diffusion-Weighted Magnetic Resonance Imaging Could Improve the Prostate Cancer Detection in Comparison with the Systemic 12-Cores Prostate Biopsy in Patients Who Had PSA Level Lower Than 10 ng/ml: Initial Experiences

Lee D[1], Nam J[1], Kim T[1], Koo K[2], Bang W[3], Lee S[1], Chung M[1]
[1]Pusan National University School of Medicine, Yangsan, South Korea; [2]Yonsei University College of Medicine, Seoul, South Korea; [3]College of Medicine, Hallym University, Anyang, South Korea

Introduction and Objectives: To compare pathologic results of prostate biopsy between systemic 12-core prostate biopsy and targeted prostate biopsy using diffusion weighted magnetic resonance imaging (DW-MRI) in patients with PSA level lower than 10 ng/ml.
Materials and Methods: Prospectively, a total of 34 patients underwent 3 Tesla multiparametric MRI prior to first round prostate biopsy between January 2014 and April 2014. Using DW-MRI, a single urologist performed a targeted prostate biopsy. After a targeted prostate biopsy, a systemic 12-core prostate biopsy was performed consecutively. We compared the pathologic results of biopsy cores according to the two biopsy procedures; the positive core rate, mean cancer core length and mean cancer core percentage.
Results: Mean PSA was 7.1 ng/ml. Among 34 patients, 23 patients had an abnormal DW-MRI. A total of 408 cores using a systemic 12-cores biopsy and 63 cores using a targeted biopsy were performed. Positive core rate was 14.2% (58 of 408 cores) and 52.3% (33 of 63 cores), respectively (p<0.001). In comparison between a systemic 12-core biopsy and a targeted biopsy, mean cancer core length and mean cancer core percentage were significantly higher in a targeted biopsy. They were 3.43mm, 27.8% and 5.03mm, 43.3%, respectively (p=0.017 and p=0.005). However, the biopsy Gleason score was not different according to biopsy methods (p=0.800) However, there were no differences in biopsy Gleason scores according to biopsy method (p=0.800).
Conclusions: Our experiences showed that a targeted prostate biopsy based on DW-MRI could improve prostate cancer detection in patients with PSA levels lower than 10 ng/ml. Further studies are warranted to investigate patients for whom MRI prior to prostate biopsy may confer advantage.

UP.440

The Prognosis of Patients with a Negative Real-Time Virtual Sonography-Assisted Targeted Prostate Biopsy Using MR-US Fusion

Ikeda A[1], Miyagawa T[2], Tanaka K[1], Komine M[1], Tsutsumi M[1]
[1]Hitachi General Hospital, Hitachi City, Japan; [2]Saitama Medical Center Jichi Medical University, Saitama, Japan

Introduction and Objectives: In our institute, Real-time virtual sonography (RVS)-assisted targeted prostate biopsy is performed in patients with suspected prostate cancer on magnetic resonance imaging (MRI). The cancer detection rate is approximately 60%. The accuracy of the targeted biopsy and interpretation of the MRI findings remains an issue. We retrospectively studied the clinical courses of patients with negative RVS-assisted targeted prostate biopsy.
Materials and Methods: The 69 patients with suspected prostate cancer on MRI and negative RVS-assisted targeted biopsy between February 2007 and August 2013, who were followed-up for over 1-year post biopsy, were included. The changes in the PSA levels, rate of prostate rebiopsy, and presence/absence of cancer were evaluated.
Results: The median (range) age, PSA level, and prostate volume of the patients were 67 (46 - 84) years, 9.3 (4.2 - 46) ng/ml, and 49 (18 - 141) ml, respectively. Of the 69, 15 (21%) underwent prostate rebiopsy. Of the 15, all underwent repeat MRI, and 10 had had their first targeted biopsy before 2009; 14 had positive MRI findings, and 9 had positive targeted biopsy. One patient underwent systematic transperineal biopsy, because the previous MRI findings were no longer found; the biopsy was positive. Sixteen patients were treated for prostatic hyperplasia. Patients with prostate cancer had significantly higher PSA velocities than those with negative results (mean 3.68 ng/ml/year vs. 0.1 ng/ml/year, p < 0.001) and significantly smaller volumes (mean 36.7 ml vs. 58.7 ml, p = 0.015).
Conclusions: For patients with high PSA velocities and small gland volumes, repeat MRI and rebiopsy must be considered despite a negative first RVS-assisted targeted biopsy. Two-thirds of the patients undergoing rebiopsy had had their first biopsy shortly after the introduction of RVS-assisted biopsy in clinical practice. It is necessary to improve the accuracy of targeted biopsy and our ability for MRI interpretation.

UP.441

Evaluation (-2)Proprostete-Specific Antigen and Prostate Health Index for Detection Aggressive Prostate Cancer

Lalic N[1], Vukovic I[2], Glisic B[3], Djordjevic D[2], Durutovic O[2], Milenkovic-Petronic D[2], Micic S[4]
[1]Faculty of Pharmacy, Novi Sad, Serbia; [2]Clinic of Urology, Clinical Center of Serbia, Belgrade, Serbia; [3]Center of Medical Biochemistry, Clinical Center of Serbia, Belgrade, Serbia; [4]Policlinic Uromedica, Belgrade, Serbia

Introduction and Objectives: tPSA alone has a low specificity and cannot identify aggressive PCa. Beckman Coulter developed a "prostate health index" (*phi*) which combines tPSA, fPSA and [-2]proPSA (*phi*=[-2]proPSA/fPSA) x√tPSA). The clinical performance of *phi* index for the detection of aggressive PCa was evaluated from 2011 to 2113.
Materials and Methods: A total of 127 patients with tPSA values between 1.8–10 ng/mL, 64 with, 63 without PCa, underwent ≥10 core biopsies. Serum samples were prepared prior to DRE.The serum concentrations of tPSA, fPSA and [-2]proPSA were measured with Beckman Coulter Access immunoassays on an Access2. The Prostate Health Index was calculated using the following formula: (p2PSA/fPSA)*√tPSA. ROC curves were plotted to compare the clinical performances of tPSA, %fPSA and *phi* for the detection of PCa. Detection PCa aggressivity was performed on 64 patients for which the biopsy Gleason score information was available. Based on this information, the patients were grouped as "aggressive PCa" for patients with biopsy Gleason score of 7 and above (GS ≥ 7) or "less aggressive" biopsy Gleason score of 6 (GS < 7).
Results: Of 127 patients, PCa was diagnosed in 64 (50.3%). Median tPSA (6.54ng/mL (BPH) vs. 5.89 ng/ml (PCa); *p*=0.852) and p2PSA (14.75 vs. 15.17 pg/ml) did not differ between

groups; conversely, median fPSA (1.14 vs. 0.77 ng/ml; $p<0.001$), %fPSA (0.16 vs. 0.12; $p<0.001$), and *phi* (32.60 vs. 48.78; $p<0.001$) did differ significantly between men without and with PCa. Evaluation of area under ROC curve (AUC) analysis showed that *phi* (AUC=0.706) provided significantly (p<0.001) better clinical performance relative to f/tPSA (AUC=0.616) or tPSA (AUC=0.502) in predicting PCa. Significantly higher median values of *phi* were observed for patients with Gleason score ≥ 7 (*phi*=52.5.0) as compared with patients with Gleason score < 7 (*phi*=39.60, p<0.001). The proportion of aggressive PCa (Gleason score >7) increased with the *phi* score.
Conclusion: The results of this study show that *phi* index compared with tPSA or %fPSa demonstrated superior clinical performance in detecting PCa in patients with TPSA 1.8 – 10.0 ng/mL and is better able to detect aggressive PCa.

UP.442

Visualization of Human Prostate Cancer Using Infrared Radiation

Khuskivadze A[1], Kochiashvili D[1], Chovelidze S[1], Koberidze G[1], Papava V[1], Partskhvania B[2], Petriashvili G[2], Sulaberidze T[2]
[1]Tbilisi State Medical University, Tbilisi, Georgia; [2]Georgian Technical University, Tbilisi, Georgia

Introduction and Objectives: The use of near-infrared radiation (NIR) is a promising approach for biomedical imaging of human prostate cancer. The technique has so far been employed only in animal models. The objective of our experiment was to study the possibility of using infrared radiation for imaging of prostate cancer in humans.
Materials and Methods: For our study, we used gross prostate specimens obtained from radical prostatectomy and transvesical prostatectomy. A total of 30 experiments were performed. The prostate was illuminated with small light emitted diode working in the infrared region (850 nanometers), placed in the prostatic urethra from the apical side. Infrared light passed through the prostate tissue and was captured by infrared CCD camera. The experiment was carried out in a dark environment in order to avoid any artifact. Transrectal ultrasound guided biopsy was performed to locate prostate cancer prior to radical prostatectomy. Surgery specimens were then studied with standard histopathological techniques to pinpoint the cancerous lesions of the prostate.
Results: Prostate cancer was positively identified in 17 patients. Prostate carcinoma appeared on infrared images as dark spots against a relatively light background and represents areas with high optical dense. In all 17 cases, the location of infrared-detected lesions fully corresponded to that identified by biopsy and histopathology. Thirteen samples obtained through transvesical prostatectomy were diagnosed as benign prostatic hyperplasia. Infrared images of those 13 prostate specimens were evenly illuminated, with no dark spots.
Conclusion: In this study, we demonstrated the feasibility of identification and visualization of human prostate cancer using a novel infrared imaging technique. Further research is warranted to improve real-time detection of carcinoma and to move this technology toward its potential clinical application.

UP.443

Repeat Prostate Biopsy in High Clinical Suspicion of Prostate Cancer: Revisiting an Old Dilemma

Marques V, Tavares da Silva E, Castelo D, Figueiredo A, Rolo F, Mota A
Dept. of Urology and Renal Transplantation, Coimbra's Hospital and University Centre, Coimbra, Portugal

Introduction and Objectives: The aims of this study are to characterize the population of patients undergoing repeat transrectal prostate biopsy (TRPB) after an initial negative result and to assess the impact of the indications for rebiopsy in the final diagnosis of prostate cancer (PCa).
Materials and Methods: Between January 2005 and February 2013, a total of 2853 patients were submitted to a first diagnostic TRPB; 496 of them did at least 1 repeat TRPB (maximum of 5 rebiopsies per patient), giving a total of 665 rebiopsies. Patient's age, total and free PSA levels, number of biopsies and fragments, histological result, indication for biopsy and complications were recorded retrospectively.
Results: The average age was 71 years (range 47 to 92). The overall CaP detection rate for the first TRPB was 36.0% and for repeat TRPB was 34.7%. The most frequent indication for rebiopsy was a persistently elevated PSA, followed by the presence of multifocal high-grade papillary intraepithelial neoplasia (HiPIN) in the first TRPB. The average age of patients with PCa wasn't significantly different from those without PCa (74.3 vs.70.4; p=0.797). There was a significant difference between PSA levels from patients with and without PCa (69.6 vs.20.92; p=0.013). However only a PSA value greater than 20ng/mL was related with a positive result in a repeat TRPB (p=0.047). Free/total PSA ratio didn't differ from patients with and without PCa (p=0.358) and a ratio inferior to 0.20 didn't correlate with a superior PCa detection rate (p=0.509). In addition to PSA level, the only indication for rebiopsy associated with the presence of PCa was the existence of multifocal HiPIN on a previous biopsy (p=0.037). The number of fragments obtained increased on every rebiopsy, however it didn't correlate with a superior detection rate of PCa (p=0.256).
Conclusion: The repetition of a TRPB after a first negative result reveals the presence of PCa in about a third of the cases. PSA levels above 20ng/mL and the presence of multifocal HiPIN in previous biopsies seem to be robust indications for performing a repeat TRPB.

UP.444

Prostate Cancer Detection in the Community

Chinegwundoh F[1], Allchorne P[1], Ancheta J[1], Trevatt P[1], Reams E[2]
[1]Barts Health NHS Trust, London, UK; [2]Kings College, London, UK

Introduction and Objectives: Men are traditionally reluctant to go to their GP. It is postulated that this may be part of the reason for late presentation of prostate cancer in the UK. Prostate cancer has ethnic variability. Coupled with the finding of excess prostate cancer mortality in Newham, London (an area of ethnic diversity), the idea arose as to setting up a clinic in the community, which men could access without a referral. We sought to determine if we could detect prostate cancer at an earlier stage than would normally be the case.
Materials and Methods: A one-year pilot clinic was set up in a community setting in Newham. This was supported by the Department of Health and involved close collaboration between several agencies. The clinic ran twice a week. It was staffed by doctors and nurse specialists. It was a free drop-in service for prostate evaluation. No appointment was necessary. PSA testing was offered. Results were given to the men and their GPs. Those with elevated PSA were offered prostate biopsy. This was a first of its kind in the UK.
Results: A total of 328 men attended. Most men attended for a "check-up". They had not accessed their GP (family doctor). Eighty four percent of men had a PSA test. Fifty six percent had a flow test. Client satisfaction was high. Fifty six men were referred into secondary care, mostly with moderate LUTS or raised PSA. Nine men were diagnosed with early prostate cancer. Ordinarily, 30% of our new prostate cancers in hospital are metastatic.
Conclusion: Such a community based setting offers an alternative access to healthcare in the UK. The men found the setting acceptable and easy to access. They appreciated the professionalism of the staff. It appealed to all cultures. Good numbers of men were reached. We demonstrated that prostate cancer may be detected earlier than might otherwise be the case in the absence of a national screening programme. The cost was not prohibitive.

UP.445

Nomogram for Prediction of Prostate Cancer with Serum Prostate-Specific Antigen Less than 10 ng/mL

Ha H[1], Lee J[1], Chung M[1], Shin D[1], Bang S[2]
[1]Pusan National University Hospital, Busan, South Korea; [2]Dept. of Urology, Daedong General Hospital, Busan, South Korea

Introduction and Objectives: Although prostate-specific antigen (PSA) is a very useful screening tool, prostate biopsy is still necessary to confirm prostate cancer (PCA). However, it is reported that PSA is associated with a high false-positive rate and prostate biopsy also has various procedure-related complications. Therefore, the authors have devised a nomogram, which can be used to estimate the risk of PCA, using available clinical data for men with a serum PSA less than 10 ng/mL.
Materials and Methods: Prostate biopsies were obtained from 2,139 patients from January 1998 to March 2011. Of them, 1,171 patients with a serum PSA less than 10 ng/mL were only included in this study. Patient age, PSA, free PSA, prostate volume, PSA density and percent free PSA ratio were analyzed.
Results: Among 1,171 patients, 255 patients (21.8%) were diagnosed as PCA. Multivariate analyses showed that patient age, prostate volume, PSA and percent free PSA had statistically significant relationships with PCA ($P < 0.05$) and were used as nomogram predictor variables. The area under the (ROC) curve for all factors in a model predicting PCA was 0.759 (95% CI, 0.716-0.803).
Conclusion: This nomogram is useful to determine prostate biopsy in patients with a serum PSA less than 10 ng/mL.

UP.446
Transrectal Ultrasound Guided Prostate Biopsy (TRUS-Bx) following 3-Tesla Magnetic Resonance Imaging (MRI) in Men with Elevated Prostate Specific Antigen: Preliminary Results
Kaya E, Akgun V, Alp B, Yalcin S, Ebiloglu T, Kocaoglu M, Yildirim I
Gulhane Military Medical Academy, Ankara, Turkey

Introduction and Objectives: We would like to expose the efficiency of 3-Tesla Magnetic Resonance Imaging (MRI) prior transrectal ultrasound guided prostate biopsy (TRUS-BX) in men with elevated prostate specific antigen (PSA).
Materials and Methods: Between January 2013 and August 2013 we performed 3- Tesla MRI and TRUS-BX in 21 men with elevated PSA on blood test in our policlinic. We performed 12 core prostate biopsy in all cases. All specimens were examined by the Pathology Service of our institute.
Results: The mean total blood PSA level was 10.37 ng/ml (3.9-34.21) and the mean blood free PSA level was 2.05 ng/ml (0.15-9.14). The comparison of TRUS-BX and MRI results for the patients are given on the Table 1. The sensitivity and specificity of MRI were calculated as 90% and 72.7%, respectively. And positive predictive value and negative predictive value were calculated as 90% and 88.8%, respectively. The validity of the test was calculated 80.9%. We also assess the value enhancement patterns and diffusion weighted imaging features of the neoplastic tissues. In contrast to pertinent literature we determined different contrast enhancement patterns for prostate cancer. We had pathology result of pathology as "ASAP" and another pathology result as "high grade PIN" in our 21-men-patient group.
Conclusion: One of the pathology result of TRUS-BX was adenocancer; gleason 6 (3+3) although his MRI was not positive for cancer. On the other hand 3 patients' pathology results were negative for neoplasia although they had positive MRI results. We are planning to re-biopsy for the 3 patients with negative in contrast to MRI results and for 2 patients that have "ASAP" and "high grade PIN" pathology results. Our results will be published following to completion of the study.

UP.446, Table 1.

	TRUS-BX +	TRUS-BX -	TOTAL
MRI+	9	3	12
MRI-	1	8	9
TOTAL	10	11	21

MRI +: shows significant signs that indicate prostate cancer
MRI -: shows no significant signs that indicate prostate cancer (normal signs)
TRUS-BX +: pathology result is prostate cancer, ASAP or high grade PIN
TRUS-BX -: pathology result is normal, BPH, prostatitis or inflammation

UP.447
One-Day Admission after TRUS-Guided Biopsy Can Decrease the Incidence of Biopsy-Related Complications
Jin B, Jung H, Park J**, Kim D**
Catholic University of Daegu, Daegu, South Korea

Introduction and Objectives: Although the outpatient-based TRUS-guided biopsy is usually performed safely, the occurrence of fatal complications can not be avoided. In this study, we evaluated the possibility of avoidance of fatal complications and decrease the incidence of biopsy-related complication rates in one day admission after biopsy in compared with outpatients schedule.
Materials and Methods: The patients were divided into two groups (Group 1: outpatients, Group 2: inpatients). Total 471 patients enrolled (Group 1: 333, Group 2: 138) and average age was 59.3 (range 48-92). All of the patients had medicated with 2nd generation cephalosporin for 3days and NSAIDs injection for one day before biopsy. Group 1 patients went back home in 2 hours after biopsy if there no vital sign changes and severe hematuria or rectal bleeding. Group 2 patients were admitted for 24 hours after biopsy. The incidence and duration of complications such as gross hematuria, rectal bleeding, hematochezia, hemospermia, fever, diarrhea, sepsis and vital sign changes were assessed.
Results: The most common complication was hematuria (21.4%) and hematochezia (4.46%), hemospermia (1.7%), fever (1.06%), severe rectal bleeding which needed rectal tamponade (0.64%), hemorrhagic shock (0.42%), diarrhea (0.21%), sepsis (0.21%) were followed. The incidence of hematuria was significantly ($p=0.031$) decreased in Group 2. The severe complications such as hemorrhagic shock, sepsis and severe rectal bleeding which needed admission observed only in Group 1. Patients who had hypertension history showed more complications associated with aspirin premedication.
Conclusions: The incidence of biopsy-related minor complications and fatal complications could be decreased in inpatients group. So, One-day admission after TRUS-guided biopsy can be a safe way to decrease biopsy-related complications.

UP.448
The Practicality of Unilateral Prostate Biopsy Procedures on the Dominant Prostate Tumor Side Determined by Magnetic Resonance Imaging in Elderly Patients with High Levels of Serum Prostate-Specific Antigen: Retrospective Study
Park K, **Kim S**, Kim Y, Huh J
Jeju National University, Jeju, South Korea

Introduction and Objectives: To examine the possibility of reducing the number of cores per prostate biopsy in elderly patients with high levels of prostate-specific antigen (PSA), without significantly lowering the detection rate of prostate cancer in patients.
Materials and Methods: From May 2009 to April 2013, 216 men with levels of PSA greater than 20ng/ml underwent prostate biopsies were retrospectively reviewed. A total of 177 individuals diagnosed with prostate cancer underwent magnetic resonance imaging (MRI) after biopsy. With the help of MRI, the laterality of the dominant tumor burden in patients with prostate cancer was determined for the sake of comparing the results of dominant-side unilateral transrectal-ultrasound guided biopsy (DSUB) with conventional sextant biopsy (SB) procedures.

Results: The mean age and PSA were 79.5 years, 81.3ng/ml, and the overall diagnostic rate of biopsies was 81.9% (177/216). Of these 177 men, 12 men (6.8%) with less than 29 ng/ml of PSA did not have any cancer cells according to unilateral core biopsies. However, in patients with levels of PSA greater than 30 ng/ml, cancer cells were discovered by DSUB (without SB). The rate of negative cores per prostate biopsy was significantly reduced in virtual DSUB (8.5%) in comparison to SB (22.3%) ($P < 0.001$).
Conclusion: Following the study, we believe possibility that unilateral biopsies on the dominant side of the prostate in elderly patients with high levels of PSA could reduce the number of useless cores per biopsy without significantly reducing the detection rate of prostate cancer in patients.

UP.449
Prospective Randomized Controlled Study to Assess the Effect of Perineal Region Cleansing with Povidone Iodine before Transrectal Needle Biopsy of the Prostate on Infectious Complications
Taher Y[1], Akdogan B[1], Ozen H[1], Unal S[2], Dogan S[1]
[1]Dept. of Urology, Faculty of Medicine, Hacettepe University, Ankara, Turkey; [2]Dept. of Infectious Diseases, Faculty of Medicine, Hacettepe University, Ankara, Turkey

Introduction and Objectives: To analyze the effect of perineal region cleansing with povidone iodine (PI) before transrectal needle biopsy of the prostate on infectious complications.
Materials and Methods: From 01/07/2013 to 05/01/2014, 120 consecutive patients with a PSA > 2.5 ng/ml or abnormal digital rectal examination were prospectively randomized to perineal cleansing (60) with PI or no cleansing (60) before their first transrectal needle biopsy of the prostate. Patients in both groups received 3 gr fosfomycin po the day before and after the procedure and 1 gr amikacin iv infusion 30 minutes before the procedure. The patients characteristics, comorbidities, PSA, fPSA, f/t PSA ratio, total prostate and transitional zone volume and thus PSA density (PSAD) and transitional zone PSA density (TZPSAD), previous history of antibiotic usage in the last three months, previous history of transrectal needle biopsy of the prostate, hematuria, hematospermia, rectal bleeding, the pathological results and the primary end point which was infectious complications were evaluated in both groups.
Results: There was no difference in baseline evaluation between groups, except mean volume of the prostate was larger in PI group (63.9 vs. 52.8 cc, p=0.016). Infectious complications were observed in 4 patients (3.3%); 1 (1.7%) in PI group and 3 (5%) in control group (p=0.309). Regarding the other parameters and pathological results, there was no significant difference between two groups.
Conclusions: Although there was a trend for reducing infectious complications in patients with perineal cleansing with PI before ultrasound guided transrectal needle biopsy; this difference has not reached significant level in this study. Further studies with larger number of patients are needed to clarify the effect of perineal cleansing with PI.

UP.450
What Are the Governance Issues of the Risk of Sepsis following Transrectal Biopsy of the Prostate?
Thompson P[1], **Nemade H**[2], Reynard J[1], Wang W[3], Sheehan S[1]
[1]King's College Hospital, London, UK; [2]Basildon and Thurrock University Hospital, Basildon, UK; [3]Beijing Tongren Hospital, Beijing, China

Introduction and Objectives: Data on the septic complications of transrectal prostate biopsy raises important questions. The risk of septicaemia was first recognised in the 1980s. Prophylactic antibiotic regimens continue to evolve due the increasing number of biopsies, and antibiotic resistance. This study follows the path of infection and tested the most widely accepted antibiotic regimen, and reviews the safety of the procedure.
Materials and Methods: The prospective study was performed in the UK and China with the same protocol. Patients had pre-biopsy urinalysis and post-biopsy blood cultures at 5 min, 1 h and 24 h. The prophylactic antibiotics were ciprofloxacin, continued for 3 days, and metronidazole. The patients were advised of the potential risks of the procedure and informed consent was obtained.
Results: Of 137 patients studied, 11.7% had positive blood cultures; 3.7% had fever and sepsis (2 patients required intensive care treatment), and 8% were bacteraemic.
Conclusion: Our reported sepsis rate of 3.7% is substantiated elsewhere. The concept of a numeric threshold for disclosing risk is legally outdated. For a diagnostic procedure surely this is a "significant risk which would affect the judgment of the reasonable patient." (Lord Woolf, 1999: Butterworths Medico-Legal Reports 48:118). As a responsible profession we have a responsibility to advise our patients of the true rate of septic complications of the biopsy and inform them that alternative procedures such as the transperineal approach exist, and have a lower risk of infection.

UP.451
The Evaluation of Prostate Cancer Prevention Trial (PCPT) Risk Calculator and Logistic Regression Based Models for Predicting Prostate Cancer in Chinese Population
Na R[1], Zhang N[1], Wu Y[1], Liu S[1], Jiang H[1], Xu J[2], Ding Q[1]
[1]Fudan Institute of Urology and Dept. of Urology, Huashan Hospital, Fudan University, Shanghai, China; [2]Center for Cancer Genomics, Wake Forest School of Medicine, Winston-Salem, USA

Introduction and Objectives: The performances of Prostate Cancer Prevention Trial (PCPT) risk calculator and other tools for prostate cancer (PCa) prediction in Chinese population were poorly understood.
Materials and Methods: The men who underwent prostate biopsy from 2006 to 2013 in our institute were recruited in this study. Clinical informations were collected before and after biopsy. We built two risk predicting models (Table 1) based on our previous study for a Chinese biopsy population (n=1059) from 2006 to 2010. The performances of PCPT risk calculator and the models for predicting PCa were then evaluated in this population, and in a new biopsy population (n=535) from 2011 to 2013 as well.
Results: Significant differences of age, prostate volume, prostate specific antigen (PSA) level, free-PSA (fPSA) level, results of digital exam (DRE), and results of transrectal ultrasound (having nodule or not) were observed between PCa group and non-PCa group (all $P<0.001$). Model1 and Model2 (Table 1) outperformed PCPT risk calculator for predicting prostate cancer in the entire first group of population, and in the stratified population (with PSA level from 2.0ng/mL to 20.0ng/mL). In addition, Model1 performed better than Model2 when predicting PCa. However, no significant differences were observed when predicting high grade PCa (Gleason score>7). When we evaluate the models in a second group of population, Model1 and Model2 performed equally to PCPT risk calculator (Table 1).
Conclusion: Family history and race information were two important factors in PCPT risk calculator. However, patients in China do not have enough information about family history for the reason of poor health care policies in the past decades, which might weaken the utility of PCPT risk calculator for predicting PCa. The logistic regression based models might be a potentially better risk calculator for predicting PCa in Chinese population, however, should be further evaluated.

UP.452
Increasing Prostate Biopsy Cores Results in an Increase in the Morbidity? A Prospective Study
Plata Bello A, Concepcion Masip T
Dept. of Urology, University Hospital of Canary Islands, La Laguna, Tenerife, Canary Islands

Introduction and Objectives: For the time being prostate biopsy is the only procedure to confirm the diagnosis of prostate cancer. Since the sextant protocol proposed by Hodge newer schemes with more intensive sampling have

been used.We investigated two different biopsy schemes with different core numbers to establish the effect on morbidity.

Materials and Methods: We prospectively conducted a descriptive, non-randomized study in a single institution during one year (2011) to evaluate the safety, morbidity and complication rates of two different numerical schemes of transrectal ultrasound guided prostate biopsies. Data from 490 patients who were grouped according to the number of cores taken into extended scheme (13-19 cores) and saturation scheme (≥20 cores).All patients received local anesthesia at the level of periprostatic nerves and perioperative antibiotic prophylaxis with a single dose of 100 mg Tobramycin and ciprofloxacine (500 mg/d starting the evening before biopsy for a total of 3 days). Antiplatelet therapy wasn't interrupted.Morbidity was assessed by a personal and telephone interview done 5 days and 4 weeks after the procedure. All patients signed the informed consent.

Results: A total of 254 patients were grouped in the extended scheme while 236 patients underwent saturation biopsy. Detailed results were shown in Table 1.

Conclusions: This study shows that extended or saturation schemes in prostate biopsy are safe procedures with rare major complications. Similar rates of complications were observed in both groups.Using a more aggressive strategy (intensifying sampling) in prostate biopsy doesn't added morbidity to the procedure.

UP.453

Cost/Benefit Analysis of Magnetic Resonance Imaging (MRI) Prior to Prostate Biopsy in Management of Patients with Raised Prostate Specific Antigen (PSA) in a District General Hospital

Taylor L, Omar A, Datta A, Almallah F, Ganta S
Walsall Manor Hospital, Walsall, UK

Introduction and Objectives: Artefact changes

UP.451, Table 1. Evaluation of the Area under the Receiver Operation Curves (AUCs) of Different PCa Risk Predicting Models

First group of population†								
All (n=1059, PCa=480, non-PCa=579)								
	PCa (n=300) vs. non-PCa (n=382)				High grade PCa (n=113) vs. others (n=585)			
AUC Lower95% Upper95%				P-value*	AUC	Lower95%	Upper95%	P-value*
PCPT**	0.860	0.831	0.889		0.723	0.627	0.819	
Model1**	0.926	0.905	0.946	**2.57×10^{-4}**	0.798	0.707	0.889	0.27
Model2**	0.901	0.877	0.925	**0.034**	0.725	0.619	0.832	0.98
PSA=2.0ng/mL-20.0ng/mL (n=)								
	PCa (n=91) vs. non-PCa (n=305)				High grade PCa (n=26) vs. others (n=381)			
	AUC	Lower95%	Upper95%	P-value*	AUC	Lower95%	Upper95%	P-value*
PCPT	0.682	0.619	0.745		0.802	0.761	0.844	
Model1	0.834	0.786	0.882	**1.72×10^{-4}**	0.840	0.804	0.875	0.18
Model2	0.778	0.720	0.836	**0.027**	0.815	0.773	0.857	0.67
Second group of population†								
All (n=535, PCa=254, non-PCa=281)								
	PCa (n=143) vs. non-PCa (n=182)				High grade PCa (n=43) vs. others (n=98)			
	AUC	Lower95%	Upper95%	P-value*	AUC	Lower95%	Upper95%	P-value*
PCPT	0.820	0.775	0.866		0.765	0.680	0.850	
Model1	0.868	0.830	0.906	0.12	0.734	0.644	0.824	0.62
Model2	0.824	0.779	0.869	0.91	0.796	0.714	0.878	0.61
PSA=2.0ng/mL-20.0ng/mL								
	PCa (n=62) vs. non-PCa (n=144)				High grade PCa (n=7) vs. others (n=53)			
	AUC	Lower95%	Upper95%	P-value*	AUC	Lower95%	Upper95%	P-value*
PCPT	0.727	0.652	0.803		0.550	0.360	0.740	
Model1	0.811	0.750	0.872	0.090	0.666	0.440	0.892	0.44
Model2	0.734	0.661	0.807	0.90	0.588	0.383	0.792	0.79

†The first group of population were the people who received prostate biopsy from 2006 to 2010 in our institute, and the PCa predicting model1 and model2 were built based on this group of population. The models were tested in the second group of population that received prostate biopsy from 2011 to 2013 in our institute.

*the P-vale referred to the significance between Model1 or Model2 and PCPT risk calculator

** PCPT=Prostate Cancer Prevention Trial risk calculator; Model1 were built in the rule of logistic regression model based on age, result of digital rectum exam, prostate volume, PSA, %fPSA and result of ultrasound; Model2 were built in the rule of logistic regression model based on age, result of digital rectum exam, PSA and %fPSA.

UP.452, Table 1.

	EXTENDED SCHEME (N=254)	SATURATION SCHEME (N=236)
NO COMPLICATIONS	59.84%(N=152)	61.01% (N=144)
TOTAL COMPLICATIONS	39.77% (N=102)	38.98% (N=92)
Bleeding Complications	**15.68% (N=40)**	**20.76 (N=49)**
Hematuria	7.87%	9.71%
Rectal bleeding	4.72%	7.62%
Hematochezia	0.78%	0.84%
Hematospermia	0.78%	1.27%
Urethral bleeding	1.57%	1.27%
Infective Complications:	**18.62% (N=48)**	**11.44% (N=27)**
Dysuria	4.72%	3.38%
Frequency	5.11%	3.81%
Fever	3.93%	1.69%
UTI symptomatic	3.54%	2.11%
Orchytis	0%	0%
Prostatitis	1.57%	0.42%
Obstructive Complications:		
Acute urinary retention	**3.9% (N=10)**	**2.54% (N=6)**
Major Complications	**1.58% (N=4)**	**4.23% (N=10)**
Sepsis	0.78%	1.69%
Gross Hematuria	0.39%	1.69%
AUR+ sepsis	0.39%	0.84%
Clavien-Dindo Modified		
I	**34.64%**	**32.20%**
II	**5.51%**	**6.77%**

in the prostate following prostate biopsy necessitate delaying staging MRI of the prostate by 6 to 10 weeks following biopsy, often causing undue anxiety in the patient and lengthening pathway from investigation to treatment. This can be avoided by performing MRI of the prostate prior to prostate biopsy. This study aimed to investigate the cost/benefit of performing pre-biopsy MRI prostate in patients managed at a district general hospital.

Materials and Methods: Retrospective analysis of 50 patients who underwent MRI of the prostate prior to trans-rectal ultrasound (TRUS) guided prostate biopsy for investigation of raised PSA. We used cognitive fusion of MRI with diffusion-weighted imaging was performed immediately prior to TRUS biopsy. Data were collected on demographics, length of time to complete all investigations, biopsy and MRI results and waiting time for MRI.

Results: Positive biopsy found in 30% of patients who underwent pre-biopsy MRI. Pre-biopsy MRI resulted in significant shortening of patient pathway (from investigation to treatment) for investigation of raised PSA.

Conclusion: Pre-biopsy MRI of the prostate can help to reduce the length of the patient pathway for investigation of raised PSA. But leads to over investigation of patients with subsequent negative biopsies and increased overall waiting times for MRI. Identifying those patients who are most likely to benefit from rapid completion of the patient pathway may aid in the diagnostic yield and reduce over investigation and overall waiting times.

UP.454

MR Based Monitoring of Men on Active Surveillance for Prostate Cancer: The Importance of a Visible Lesion

Petrides N[1,2], Allen C[1], Pushwani S[1], Emberton M[1,2], Moore C[1,2]

[1]University College Hospitals, London, UK; [2]University College, London, UK

Introduction and Objectives: Repeat PSA, digital rectal examination, and standard transrectal biopsy are recommended for follow-up on active surveillance. The use of MR imaging may allow men with stable disease to avoid a biopsy. The natural history of MR appearances during a period of active surveillance is not well understood. We report the findings of repeat MRI in men with low and intermediate risk prostate cancer.

Materials and Methods: Clinical and radiological databases were searched for men who had undergone more than one prostate MRI, and the electronic hospital record was then searched to find men who had not undergone any treatment in the intervening period. Baseline scans were assessed to identify men with a discrete lesion (PIRADS score 4/5 or higher) and follow-up imaging assessed to identify those who had shown progression on MR over time.

Results: We identified 256 men with over 650 cumulative follow-up years. Of those 256, 106 men (41.4%) had a visible lesion at baseline, of whom 47 men (44%) showed evidence of progression during follow-up. Of 150 men with no lesion, 21 (14%) showed progression over time (odds ratio for progression in men with a lesion 4.9).

Conclusion: Men with a lesion on MRI at the outset of active surveillance are more likely to show progression than men with no lesion, and require close monitoring. A classification system for change on MRI would be useful in future research.

UP.455

Does Saturate Enough? Transrectal Biopsy for Detection and Localization of Prostate Cancer Index Lesion: A Comparison Study between Saturation Biopsy and Specimen Analysis

Orczyk C[1,2], Doerefler A[1], Bazille C[3], Le Gal S[1], Genty M[4], Desmonts A[1], Tillou X[1], Bensadoun H[1]

[1]Dept. of Urology, University Hospital of Caen, Caen, France; [2]ISTCT, CERVOXY, Caen, France; [3]Dept. of Pathology, University Hospital of Caen, Caen, France; [4]CEFEMIS, Montpellier, France

Introduction and Objectives: Index lesion should be defined as the one within the gland that leads cancer prognosis. With perspective of active surveillance (AS) and focal therapy (FT), localize within the gland this index lesion is critical. While TRUS saturation biopsy (TRUS SB) is controversial for raw detection, increased sample of tissue may improve qualitative information about cancer foci. Our objective is to assess the ability of TRUS SB to detect and localize the index lesion confronted to radical prostatectomy specimen.

Materials and Methods: We retrospectively reviewed the charts of patients who underwent radical prostatectomy (RP) after TRUS SB at our institution in 2010 and 2011. TRUS SB with 22 cores is offered for baseline biopsy at our center. Each core was sent to pathology in separate jars. Biopsy analysis included core-by-core analysis and a report using a scheme with tissue length and cancer extension. We clustered the contiguous positive cores and allocated them as part of the same lesion. We compared SB results to step section analysis of RP specimen. Specimen index lesion was the one with extra prostatic extension, if not the largest. Correlation was done on a sextant basis. We performed logit regression to find a model to predict true positive for index detection lesion and localization.

Results: We included 50 patients, median age 62 years old, median PSA 6.64ng/ml, mean Gleason score 6.1. Median number of cores was 22, with median cancer involvement of 9mm

by patient. Sensitivity (Se) for detection and localization of index lesion as such was 87% and positive predictive value (PPV) of 61%. At univariate regression, true positive was associated with number of positives cores (p=0.009); number of positive core for index lesion (p=0.045) and total length of cancer (p=0.001). Only number of positive cores found to be predictive of IL at multivariate analysis (Odds Ratio= 1.47).
Conclusions: Intrinsic performance was high with sensitivity of 87% for detection and localization of the index lesion, with moderate PPV. Albeit promising, our statistical model failed to establish a profile for true positive detection and then establish enough confidence in IL detection and localization.

UP.456
Disease-Free Survival after Low-Dose Brachytherapy: Postimplant Dosimetry as Prognostic Factor
Apolikhin O**, Sivkov A**, Oschepkov V, Roshin D, Koryakin A
Research Scientific Institute of Urology, Moscow, Russia

Introduction and Objectives: An important criterion for the quality control of seed implantation is postimplant dosimetric analysis (PDA), usually performed on the basis of CT on day 30 after brachytherapy. We analyzed the 5-year disease-free survival, depending on the calculated postimplant dose in a single center with more than 10-year experience.
Materials and Methods: The research was focused on 117 patients who met the following criteria: low or intermediate risk PCa (D'Amico criteria), with follow-up of 5 years or more, who underwent PDA after implantation. Patient age range: 52 to 76 years. Radioactive sources used - 125I, with the summary dose of - 120-160 Gray. According to the results of PDA patients were divided into two comparable groups, the first group with prostate D90 > 140 Gray, the second <140 Gray.
Results: The groups are equal in terms of preoperative PSA and clinical stage distribution. A 5-year biochemical disease-free survival (bDFS) in the first group was achieved in 96.4% with cT1, and with cT2 - 82.9%. In the second group - 85.2% and 71.9% respectively. Overall disease-free survival in patients with D90> 140 Gy was significantly higher than in group of < 140 Gy: 93.2% and 77.6%, respectively. Evaluation of complications showed that the most frequent symptom was dysuria, which was registered significantly more in Group I.
Conclusions: The 125I brachytherapy is an effective radical treatment of low- and intermediate-risk PCa, with good results of disease-free survival and biochemical control and small number of complications. PDA plays a great role in the prognosis of treatment results, along with the stage of disease, tumor grade, and preoperative PSA. Biochemical control is better in patients with higher D90, although the frequency of dysuria in these patients is also higher.

UP.456, Table 1.

	Group I >140Gy	Group II <140Gy	p
Preoperative PSA	7.3ng/ml ± 2.6	7.9ng/ml ± 2.4	p > 0.05
T1	n = 6 (10.2%)	n = 7 (12.1%)	p > 0.05
T2	n = 53 (89.8%)	n = 51 (87.9%)	p > 0.05
5-year bBFS	93.2%	77.6%	p < 0.05
Dysuria	34 (58.6%)	25 (42.4%)	p < 0.05

UP.457
Comparative Analysis of Pathological and Biochemical Outcomes after Radical Prostatectomy in Patients Eligible for Different Active Surveillance Criteria
Veliev E[1,2], **Sokolov E**[1], Loran O[1], Petrov S[3], Bogdanov A[1,2]
[1]Russian Medical Academy of Postgraduate Education, Moscow, Russia; [2]S.P. Botkins Hospital, Moscow, Russia; [3]A.M. Nikiforov All-Russian Center of Emergency and Radiation Medicine, Saint Petersburg, Russia

Introduction and Objectives: Appropriate selection of patients for active surveillance (AS) is still controversial. The purpose of the study is to evaluate and compare pathological results and biochemical outcomes after radical prostatectomy (RP) in patients meeting strict Johns Hopkins (JH) and more extensive Royal Marsden Hospital (RMH) AS criteria.
Materials and Methods: We retrospectively reviewed our institutional database of 1367 patients treated with RP between 1997 and 2010. There was 74 patients eligible for JH criteria (clinical stage cT1c, PSA density ≤ 0.15, postbiopsy Gleason sum ≤ 6, ≤ 2 positive biopsy cores in at least 10-core prostate biopsy, ≤ 50% single core involvement) and 263 patients eligible for RMH criteria (clinical stage cT1c-T2a, prostate-specific antigen level ≤ 15 ng/ml, postbiopsy Gleason sum ≤ 3+4, ≤ 50% positive biopsy cores) were included in the study. Median age was 64 years (IQR: 58-69; 59-68) in both groups (p=0.71). Median PSA level was 5.9 ng/ml (IQR: 4.8-6.7) and 6.9 ng/ml (5.4-8.58) (p<0.001), median follow-up period after surgery 65 months (IQR: 53-82) and 67 months (IQR: 52-90) (p=0.63) in JH and RMH groups respectively. Pathological results after RP were analyzed for negative features (Gleason upgrading, upstaging, positive surgical margins) and compared. Kaplan-Meier method was used to evaluate 5-year biochemical recurrence-free survival (BCRFS).
Results: Extracapsular extension was found in 2.7% and 4.9% (p=0.33), seminal vesicle invasion in 1.4% and 2.6% (p=0.43), N+ disease in 1.4% and 0.4% (p=0.49), positive surgical margins in 6.8% and 7.2% (p=0.56) of patients in JH and RMH groups. Postoperative Gleason sum upgrading was found in 6.8% and 9.1% (p=0.49). In total, negative pathological features were found in 14.8% of patients in JH group and 17.1% of patients in RMH group (p=0.31). Also, 5-year BCRFS was 95.7% and 95.8% (p=0.41) respectively.
Conclusion: Pathological and biochemical results after RP in patients meeting JH and RMH criteria are suboptimal, with no significant differences between two groups. Precise preoperative examination and staging are essential before selection of candidates for active surveillance.

UP.458
Validation of the Contemporary Epstein Criteria for Insignificant Prostate Cancer in African Men
Abbar M, Janane A, Dakkak Y, Ghadouane M, Ameur A
Dept. of Urology, Mohammed V Military Hospital of Rabat, Rabat, Morocco

Introduction and Objectives: The Epstein criteria represent the most widely used scheme for prediction of clinically insignificant prostate cancer (PCa). However, they were never validated in European men. We assessed the rate of unfavorable prostate cancer (Gleason 7-10 or non-organ-confined disease) in a cohort of 34 men who fulfilled the Epstein clinically insignificant PCa criteria.
Materials and Methods: Between 2001 and 2012, 240 men underwent radical prostatectomy at a single academic European institution. Of those, 366 fulfilled the contemporary Epstein clinically insignificant PCa criteria. Analyses targeted the rate of pathologically unfavorable prostate cancer, defined as either Gleason sum 7-10 or non-organ-confined disease, or a combination of these characteristics in patients with clinically insignificant PCa.
Results: Gleason 7-10 prostate cancer at radical prostatectomy was found in 8 patients (23.5%) with clinically insignificant PCa. In addition, 2 (25%) of the 88 patients harbored non-organ-confined disease. Consequently, the contemporary Epstein criteria for clinically insignificant PCa were inaccurate in 23.5% of patients.
Conclusion: The Epstein clinical insignificant PCa criteria may underestimate the true nature

of prostate cancer in as many as 23.5% of African patients. Therefore, caution is advised when treatment decisions are based solely on these criteria.

UP.459

Is Radical Prostatectomy a Suitable Treatment Option for an Age of 75 Years or Older Prostate Cancer Patient?

Ko W[1], Ryu J[2], Jung T[2], Yoo T[3], Kim D[4], Oh T[5], Byun S[6], Kim S[7], Kwon D[8]
[1]National Health Insurance Service Ilsan Hospital, Gyeonggi-Do, South Korea; [2]Seoul Veterans Hospital, Seoul, South Korea; [3]Eulji University School of Medicine, Seoul, South Korea; [4]Catholic University of Daegu School of Medicine, Daegu, South Korea; [5]Samsung Changwon Hospital, Changwon, South Korea; [6]Seoul National University Bundang Hospital, Gyeonggi-Do, South Korea; [7]Ajou University School of Medicine, Gyeonggi-Do, South Korea; [8]Chonnam National University Medical School, Chonnam, South Korea

Introduction and Objectives: We studied to identify whether radical proatatectomy is a suitable therapeutic method for an age of 75 years or older prostate cancer patient.
Materials and Methods: We studied retrospectively the patients who received the RP for prostate cancer at six institutions from 2005 to 2012. Patients were divided into 2 subpopulations; 65-69 years (younger group) and 75 years or older (older group) at time of surgery. We included patients who were followed up for 12 months at least. The patient clinical characteristics, the pre- and postoperative data, the pathological data, and postoperative complication were compared between the two groups. The overall, specific and biochemical recurrence-free survival were analyzed with chi-square test, logistic regression analysis, and Kaplan-Meier method.
Results: A total of 168 patients were 65-69 years of age and 89 patients were ≥75 years of age. Postoperative Gleason score (≤6: 26.8% versus 15.7%, ≥8: 8.9% versus 25.8%, in younger and older groups, respectively, p=0.001) and postoperative ECOG performance status (grade 0: 67.3% versus 50.6%, grade 2: 5.4% versus 15.7% in younger and older groups respectively, p=0.006) were statistically significant difference. There was no statistically significant difference in peri-, postoperative complications (rectal injury, impotence, bladder neck contracture, inguinal hernia) except urinary incontinence. At 6 months after RP 69.0% (younger group) versus 41.6% (older group) of patients were continent and at 12 months 85.7% versus 76.4% were continent, respectively. In multivariate logistic regression analysis, the factors such as old age, preoperative ECOG performance status ≥ grade 1, postoperative impotence affected urinary incontinence after RP. After a median follow-up of 36 months (younger) and 40 months (older group), the prostate cancer-specific mortality was 0% and 2.2% (p=0.151) and the biochemical recurrence was 11.3% and 12.4% (p=0.839), respectively.
Conclusions: Although the urinary incontinence rate was higher in the older group, the RP in patients 75 years old or older is a suitable treatment procedure with a limited complication rate, excellent oncologic outcome and survival rate similar to 65-69 years of age.

UP.460

Patients Electing for Active Surveillance (AS) following Tranperineal Template Guided Saturation Biopsy (TTSB) Demonstrate a Low Rate of Progression and Conversion to Radical Treatment

Sarkar D, Ekwueme K, Simpson H, Parr N
Wirral University Teaching Hospital, Upton, Merseyside, UK

Introduction and Objectives: AS is advocated for low risk PCa, although around 30% of patients are reported to 'progress' by 2yrs, possibly suggesting that a proportion of tumours are initially characterised incorrectly. In 2007 we established a TTSB service and now review the outcome of patients electing for AS following this procedure, hypothesizing that the 'progression rate' should be less.
Materials and Methods: Of 511 patients referred from a wide range of hospitals, 325 were followed-up locally. PCa was diagnosed in 184/325(56.6%). Of these, 59 elected for AS, with median age 63(47-75) yrs and median PSA 8(4-15) ng/ml. Gleason grades were 3+3(n=40) and 3+4(n=19), with clinical stages T1c (n=54) and T2a (n=5). Fifty-eight underwent pre TTSB MRI. Our follow-up protocol consisted of 3 monthly PSA and DRE, offering repeat MRI and repeat TTSB at 18-24 months.
Results: At median follow-up of 34(2-78) months, 28 patients have undergone repeat MRI, with none progressing radiologically. Thirteen out of 59 patients accepted repeat TTSB, mainly due to PSA progression, 3(5%) demonstrating histological progression and since undergoing radical treatments.
Conclusion: Patients characterised as suitable for AS following TTSB demonstrate a low rate of progression. For some patients the high risk of progression reported for AS after conventional biopsy acts as a deterrent to acceptance of AS as a management strategy. These individuals should be offered 'upfront TTSB'. A significant proportion of patients on AS decline repeat TTSB when PSA and imaging are stable.

UP.461

Correlation between Biopsy Gleason Score and Radical Prostatectomy Specimens

Abbar M, Janane A, Dakkak Y, Ghadouane M, Ameur A
Dept. of Urology, Mohammed V Military Hospital of Rabat, Rabat, Morocco

Introduction and Objectives: Gleason scores, as determined by 18-gauge core needle biopsies (NB), were compared with both Gleason scores and the pathological staging of corresponding radical prostatectomy (RP) specimens. The goal was to evaluate the clinical implication and the prognostic impact of these discrepancies.
Materials and Methods: Records of 234 consecutive patients undergoing a radical retro pubic prostatectomy between 2001 and 2012 were reviewed. In total, all our patients were enrolled, all of whom had been diagnosed with adenocarcinoma by transrectal needle biopsies using an 18-gauge automated spring-loaded biopsy gun.
Results: Grading errors were greatest with well-differentiated tumors. The accuracy was 18 (23%) for Gleason scores of 2-4 on needle biopsy. Of the 108 evaluable patients with Gleason scores of 5-7 on needle biopsy, 84 (78%) were graded correctly. All of the Gleason scores of 8-10 on needle biopsy were graded correctly. Fifty-four of 162 patients (33%), with a biopsy Gleason score of < 7 had their cancer upgraded to above 7. Tumors in 18 patients (60%) with both a Gleason score < 7 on the needle biopsy and a Gleason score of 7 for the prostatectomy specimen were confined to the prostate.
Conclusion: The potential for grading errors is greatest with well-differentiated tumors and in patients with a Gleason score of < 7 on the needle biopsy. Predictions using Gleason scores are sufficiently accurate to warrant its use with all needle biopsies, recognizing that the potential for grading errors is greatest with well-differentiated tumors.

UP.462

Psychological Aspects of Active Surveillance for Japanese Men with Low Risk Localized Prostate Cancer

Takeda H, Nakano Y, Narita H
Dept. of Urology, Tosei General Hospital, Aichi, Japan

Introduction and Objectives: To investigate, the prevalence of anxiety and depression in patients with localized prostate cancer managed by active surveillance (AS), compared with those receiving immediate treatment, as active surveillance is a relatively new approach to managing this disease, designed to avoid 'unnecessary' treatment, but it is unclear whether the approach contributes to psychological distress, given that men are living with untreated cancer.
Materials and Methods: We've recommended AS for 95 patients with low risk prostate cancer, in the 8 years from 2006 to 2014 as a result 65 patients enrolled in AS. This Department's eligibility criteria for AS were: 1) T1-T2aN0M0, 2) GS<7 3) PSA<10 ng/ml, 4) 10 or more biopsies and 2 or fewer positive cores, and 5) cancer

occupying 30% or less of positive cores. Sixty five men with low risk PCa meeting the study entry criteria, Comparative analysis was done to analyze anxiety scores assessed by use of the Hospital Anxiety and Depression Scale (HADS) & an 11-item modified Memorial Anxiety Scale for Prostate Cancer (MAX-PC) questionnaire.
Results: At 8 years, 65 patients who underwent AS at this hospital had an overall survival rate of 95% and a prostate cancer-specific survival rate of 100% (mean age: 71.63±6.48 years, mean follow-up: 33.63±18.14 months). Patients remained under AS at a rate of 72.05% at 3 years and 67.54% at 5 years. Twenty four patients who received delayed definitive treatment after AS had an OS rate and DSS rate of 100% at 5 years. Analyses indicated that higher anxiety scores were significantly associated with younger age (<70 years old) (P<0.01) and delayed definitive treatment (P<0.01), but not with management by active surveillance (P=0.38).
Conclusion: Comparison of patients receiving Continuous AS and deferred definitive treatment revealed significant differences in their HADS and MAX-PC. Active surveillance for Japanese men with low risk localized prostate cancer was associated with greater psychological distress in younger age (<70 years old) and delayed definitive treatment after AS.

UP.464
Comparison of Outcomes in the Initial 100 Patients' Cohorts between Laparoscopic Radical Prostatectomy and Robot-Assisted Radical Prostatectomy: Experiences by Single Surgical Team in One of High Volume Centers in Japan
Yukari K[1], Iwata T[1], Kawauchi K[1], Koizumi F[1], Edamura K[1], Kusaka N[2], Saika T[1]
[1]Hiroshima City Hospital, Hiroshima, Japan; [2]Tsuyama Central Hospital, Tsuyama, Japan

Introduction and Objectives: In Japan, modalities of radical prostatectomy are changing drastically due to the recent innovation of Japanese social health insurance system to surgeries for prostate cancer (PCa). We compared installabilities between Laparoscopic radical prostatectomy (LRP) and for robot-assisted radical prostatectomy (RALP) by a retrospective study for each initial 100 patients treated by single team.
Materials and Methods: From June 2011, we initiated LRP and operated 100 cases to June 2012. And from September 2012, we initiated RALP and operated 100 cases to September 2013. All the surgeries were done by a single surgical team conducted by a director of the department of urology. Peri-surgical outcomes, pathological findings, continence status and biochemical recurrence-free survival, were compared.
Results: Preoperative parameters (age, PSA, Gleason score) were similar in both RALP and LRP groups. Operative time (169 vs. 215 minutes) and estimated blood loss (minimal vs. 77 ml) were reduced in RALP vs. LRP. Perioperative complications in RALP appeared to be minimal with no cases of intra-operative open conversion; on the other hands, severe complications, including 3 rectal injuries, were observed in 6 cases of LRP. Although not statistically significant, there was a lower positive margin rate in organ-confined (pT2) disease (7.2%, RALP vs. 16%, LRP). Continence at 3 months was 92% following RALP as opposed to 64% after LRP. Biochemical recurrences in short follow-up period (median 8 vs. 16 months) were observed 5% in RALP as opposed 16% in LRP.
Conclusions: The transition to RALP from the introduction of LRP in a very short period has yielded superior operative, oncologic, and functional results.

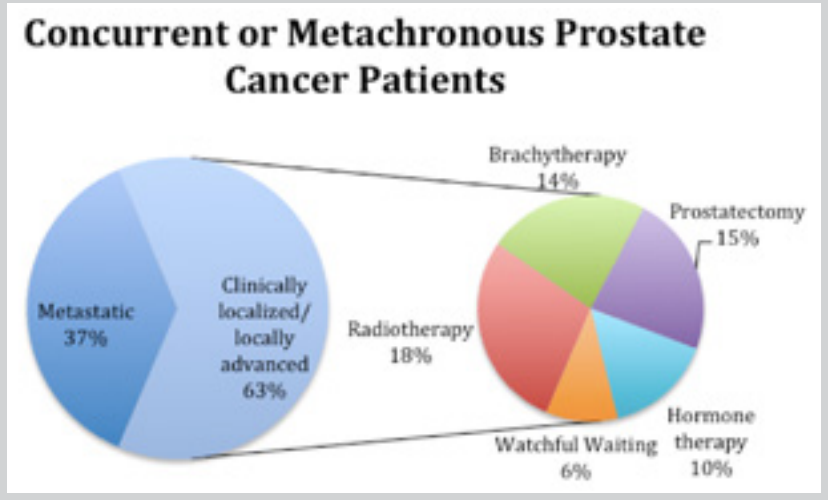
UP.465
Treatment Decision-Making in Patients with Clinically Localized Prostate Cancer Diagnosed after Concurrent or Subsequent Non-Prostate Malignancy: To Treat or Not to Treat? How to Treat?
Lu K, Wang H, Lin V, Yu T
E-Da Hospital and I-Shou University, Kaohsiung City, Taiwan

Introduction and Objectives: With awareness and understanding of prostate cancer (PCa) and increasing widespread usage of PSA screening worldwide, the incidence of prostate cancer was steadily increasing. Subsequently, concurrent or metachronous non-prostate malignancy diagnosed prior to PCa were not uncommon clinical scenarios. How to justify the treatment strategy and avoid over-treatments in these particular populations were extremely challenging issues to urologist. The aim of the study is to investigate the treatment of choice and clinical outcome in PCa patients with concurrent or metachronous non-prostate cancer, and analyze potential factors implicated in decision-making for clinical patient management.
Materials and Methods: This is a retrospective observational cohort study. From April 2004 to September 2013, all PCa patients diagnosed with concurrent or subsequent to non-prostate malignancy were enrolled. The clinical data were collected retrospectively by chart review and the length of follow-up was calculated up until the last clinical visit or death. The results were correlated with clinico-pathological parameters.
Results: The primary analysis included 826 PCa patients. Sixty-two (7.51%) PCa patients were diagnosed with concurrent or subsequent to non-prostate malignancy, including 39 clinically localized PCa patients. The common sites of non-prostate malignancy was urotract (16 from urinary bladder and 7 from upper urinary tract), colon-rectal area (8 from rectum and 8 from colon), and liver (11). Radiotherapy (11) or brachytherapy (9) was most adopted for the treatment of choice for patients with organ-confined prostate cancer. Tumor biology of non-prostate malignancy, disease-free duration of prior malignancy, and physician preference were implicated in treatment of choice.
Conclusion: Conservative treatment or minimally invasive modalities were mostly adopted options for PCa patients with concurrent or subsequent to non-prostate cancer in concerning on specific tumor biology and disease-free period. Further prospective study needs to be conducted to investigate how to stratify risks and optimize treatment strategy in these populations.

UP.466
Results of Radical Prostatectomy in Patients with Locally-Advanced Prostate Cancer
Matveev V, Volkova M**, Cherniaev V**
Russian Cancer Research Center, Moscow, Russia

Introduction and Objectives: To assess results of radical prostatectomy in patients with

UP.465, Figure 1.



locally-advanced prostate cancer.
Materials and Methods: Medical data of 158 consecutive patients with locally-advanced prostate cancer who underwent radical prostatectomy from 2002 to 2012 were analyzed. Median age was 60.0 years. Median PSA before surgery was 13 (1-81) ng/ml. Biopsy Gleason sum was ≥7 in 70 (44.3%) cases. Clinical T category cT1 was diagnosed in 14 (8.9%) cT2 – in 119 (75.3%), cT3 – in 25 (15.8%) patients; no regional metastases were diagnosed in any of the cases. All patients underwent retropubic radical prostatectomy. Extended pelvic lymphadenectomy (ELAE) was performed in 28 (17.7%) cases. Median follow-up was 50 (12-155) months.
Results: Pathological T category pT3a was recognized in 96 (60.8%), pT3b – in 48 (30.4%), pT4 – in 14 (8.9%); pN+ - in 34 (21.5%) cases. Gleason score ≥7 occurred in 83 (52.5%) specimens. Perineural invasion was identified in 133 (84.2%), angiolymphatic invasion – in 103 (65.2) cases. Postoperative treatment was administered in 39 (24.5%) patients (radiotherapy (≥68Gy) – 30 (18.9%) (immediate – 19 (12.0%); delayed – 11 (6.9%)); delayed hormonotherapy – 9 (5.6%)). Five-year overall, cancer-specific, recurrence-free and PSA-failure-free survival was 92.3%, 95.1%, 72.0% and 55.2%, respectively. Independent unfavorable prognostic factors for survival without PSA-failure were initial PSA ≥10 ng/ml (p=0.004), lack of ELAE (p=0.02), pN+ (p=0.04) and absence adjuvant treatment (p=0.017).
Conclusion: Radical prostatectomy with ELAE followed by adjuvant therapy is associated with satisfactory outcome.

UP.467

Long-Term Impact on Erectile Function after Brachytherapy for Prostate Cancer in Men Younger Than 55 Years

Campos Pinheiro L**, Magalhães Pina J**, Varregoso J, Vicente R, Ugidos J, Teixeira N, Cunha G, Oliveira e Silva T, Matos Ferreira A
British Hospital Lisbon XXI, Lisbon, Portugal

Introduction and Objectives: The purpose of this study is to assess potency preservation among patients with less than 55 years old, with clinically localized and locally advanced PCa submitted to prostate brachytherapy alone, or in association with external beam radiotherapy (EBRT) and/or androgen deprivation therapy (ADT); to assess the effect of clinical, treatment and dosimetric parameters on penile erectile function.
Materials and Methods: Eighty six patients with T1-T3 PCa were treated with BT (I125, prescription dose 160 Gy) alone (87.2%) or combined with 6 months of ADT (5.8%). 3.5% of patients were treated with BT (I125, prescription dose 110 Gy) associated with EBRT (45 Gy). BT, EBRT and 9 months of ADT was used in 3.5% of patients. Patients completed a self administered Brief Sexual Function Inventory (BSFI) questionnaire before implant and at each follow-up visit. Erectile item ranges from 0-12. Potency was considered when score≥4 (minimum score which allows for satisfactory erections) with or without the use of iPDE5. Only initially potent patients were included. Patients with biochemical failure were excluded. A minimum follow-up of 1 year was required. Biological effective dose (BED) scale was used, in order to standardize the radiation dose administered by implant only or combined with EBRT. Potency rate was calculated using the Kaplan-Mayer method and log-rank test. Cox regression was used for multivariable analysis. Statistical significance was considered when p<0.05.
Results: Overall 48-month potency preservation was 88.4%. This rate was 90.7% for BT alone, 80.0% for BT with ADT, 66.7% for BT with EBRT and 66.7% for the trimodal treatment. There was no statistical difference associated with treatment type (p=0.530). Patients <50 years (n=26) treated with implant alone had a potency preservation rate of 95.5%. BED, hormone therapy, Gleason score, prostate volume, tumoral staging, pre-treatment PSA value showed no correlation with post-treatment potency preservation both on univariate and multivariate analysis.
Conclusion: There are few studies that evaluate prostate cancer patients with less than 55 years in the long-term. Our study evaluates 86 young patients and shows excellent erectile function preservation following brachytherapy, with an overall 90.7% potency preservation, 48 months after treatment. In patients with less than 50 years, 95.5% remain potent.

UP.468

Oncologic Outcomes in Low and Intermediate-Risk Prostate Cancer Treated with Brachitheraphy: 8 Years of Follow-Up

Balbontin F
Clinica Santa Maria, Santiago, Chile

Introduction and Objectives: The objective of this study is to report the rates of disease-free survival (DFS), cause-specific survival (CSS), and overall survival (OS) after low-dose-rate (LDR) prostate brachytherapy (PB).
Materials and Methods: Data were collected from 172 consecutive patients with prostate cancer who received LDR-PB as monotherapy with iodine 125 since 2005. Patients had low-risk (72%) or intermediate-risk (28%) disease according to National Comprehensive Cancer Network Criteria. The prescribed minimal peripheral dose was 144 Gy. Patients were followed-up with PSA every 3 months during the first year every 6 months during the second year and then annually. The Phoenix threshold was used to define biochemical relapse.
Results: The median patient age at implantation was 61 years. The median follow-up was 37 months. OS and DFS rates at 8 years were 91.2% and 94% respectively.
Conclusions: LDR brachytherapy as monotherapy is an excellent method to control localized prostatic carcinoma with only 6% of recurrence.

UP.469

Comparison of Perioperative Results and Short-Term Biochemical Recurrence Survival in RARP within 2 Weeks of Biopsy

Lee J[1], Jeh S[1], Kwon J[1], Jung H[1], Kang H[1], Cho K[1], Ham W[1], Lee J[2], Cho I[3], Choi Y[1]
[1]Dept. of Urology, Urological Science Institute, Yonsei University College of Medicine, Seoul, South Korea; [2]Dept. of Urology, Cheil General Hospital & Women's Healthcare Center, Kwandong University College of Medicine, Seoul, South Korea; [3]Dept. of Urology, Inje University College of Medicine, Gimhae, South Korea

Introduction and Objectives: To evaluate whether robot-assisted radical prostatectomy (RARP) performed within 2 weeks of prostate biopsy is associated with postoperative outcomes and biochemical recurrence compared with a control group, using propensity scores.
Materials and Methods: Of the 879 patients who underwent RARP by single surgeon (YDC) between August 2005 and April 2012, 96 patients who underwent RARP within 2 weeks of prostate biopsy were analyzed. Propensity scores for an established control group were calculated for each patient using multivariable logistic regression based upon the following covariates: age, body mass index, preoperative prostate-specific antigen level, prostate volume, biopsy Gleason score, clinical tumor stage, and D'Amico risk stratification. Propensity score-matching was performed to select the most similar propensity scores among the group after 2 weeks of biopsy, in a 1:1 ratio with respect to the reference group of patients who underwent RARP within 2 weeks of biopsy.
Results: In 192 patients, the mean age was 64.60±7.44 years and mean follow-up was 28.31±15.89 months. There were no statistical differences in variables used in propensity score matching. Operation time (124.48±25.00 vs. 118.25±25.05; p=0.084) and estimated blood loss (292.70±221.33, 250.83±165.20 ml; p=0.139) were not significantly different between the two groups. In a log-rank test using the Kaplan-Meier curve, there were no statistical differences in biochemical disease recurrence between the two groups (p=0.067, HR: 0.6324; 95% CI 0.3859-1.0364).
Conclusion: RARP within 2 weeks of prostate biopsy may be performed safely in patients for postoperative outcomes and biochemical recurrence as compared with RARP after 2 weeks of biopsy.

UP.470

Analysis of Expanded Criteria to Select Candidates for Active Surveillance of Low-Risk Prostate Cancer

Jo J, Lee H, Byun S, Lee S, Hong S
Seoul National University, Bundang Hospital, Seongnam-si, South Korea

Introduction and Objectives: To analyze the value of each criterion for clinically insignificant prostate cancer (PCa) in the selection of men for active surveillance (AS) of low-risk PCa.

Materials and Methods: We identified 532 men treated with radical prostatectomy from 2006 to 2013 who met 4 or all 5 criteria for clinically insignificant PCa (clinical stage ≤ T1, PSA density ≤ 0.15, biopsy Gleason score ≤ 6, number of positive biopsy cores ≤ 2, and no core with > 50% involvement) and analyzed their pathologic and biochemical outcomes. Patients who met all 5 criteria for clinically insignificant PCa were designated as Group A (n = 172), and those who met 4 of 5 criteria as Group B (n = 360). Association of each criterion with adverse pathologic features was also assessed via logistic regression analyses.

Results: Comparison of Group A and B and also logistic regression analyses showed that PSA density > 0.15 ng/ml and high (≥ 7) biopsy Gleason score were associated with adverse pathologic features. Higher (> T1c) clinical stage was not associated any adverse pathologic features. Although ≤ 3 positive cores were not associated with any adverse pathology, ≥ 4 positive cores were associated with higher risk of extracapsular extension (p = 0.031).

Conclusion: Among potential candidates for AS, PSA density > 0.15 ng/ml and biopsy Gleason score > 6 pose significantly higher risks of harboring more aggressive disease. Eligibility criteria for AS may be expanded to include men with clinical stage T2 tumor and 3 positive cores.

UP.471

Ablatherm-HIFU Hemiablation: An Optional Treatment for Unilateral Low-Risk Prostate Cancer

Sanchez-Salas R[1], Prapotnich D[1], Barret E[1], Secin F[2], Galiano M[1], Rozet F[1], Cathala N[1],

UP.470, Table 1. Logistic regression analysis of AS Epstein criteria and adverse pathologic outcome in patient who met all but one criterion with aim of assessing the value of each eligibility criterion

	Extracapsular tumor extension		Seminal vesicle invasion		Pathological Gleason score ≥ 7 (4+3)		Significant Tumor†	
	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
Clinical stage:								
T1	ref.		ref.		ref.		ref.	
T2a	1.998	0.435	0.874	1	1.11	0.898	1.604	0.444
T2b or Greater	0		1.828	1	0	0.999	0	0.999
PSA density (ng/ml):								
Less than 0.15	ref.		ref.		ref.		ref.	
0.15-0.18	5.664	0.01	1.215	1	0.475	0.492	2.619	0.067
0.19-0.23	6.4	0.003	1.132	1	2.124	0.215	4.466	0.001
Greater than 0.23	5.439	0.005	inf.	0.995	1.44	0.531	3.19	0.007
Biopsy place:								
SNUBH	ref.		ref.		ref.		ref.	
Other clinic	1.74	0.124	0	0.996	1.634	0.22	1.691	0.07
Biopsy gleason score:								
Less than 6	ref.		ref.		ref.		ref.	
7 (3+4)	1.488	0.729	1.111*	0.995	6.549	0.002	4.451	0.01
7 (4+3)	5.335	0.155	1.05	1	49.126	<0.001	33.847	<0.001
8 or Greater	0		0.757	1	4.392*	0.999	3.046*	0.999
Positive core number:								
1~2	ref.		ref.		ref.		ref.	
3	1.601	0.679	0.919	1	2.897	0.141	1.996	0.319
4	7.26	0.031	0.829	1	0	0.999	2.782	0.217
5 or Greater	7.741	0.027	1.065	1	0	0.999	2.985	0.192
Maximum core positive %:								
Less than 50	ref.		ref.		ref.		ref.	
51-60	12.227	0.049	1.828	1	6.985	0.114	4.751	0.198
61-75	0		0.757	1	0	1	0	1
Greater than 75	28.348	0.028	inf.	1	16.644	0.06	11.153	0.1

†Non-organ confined or pathologic Gleason score 7 (4+3) or Greater
*Insufficient outcomes

Cathelineau X[1]
[1]Institut Montsouris, Paris, France; [2]CEMIC and San Lazaro Foundation, Buenos Aires, Argentina

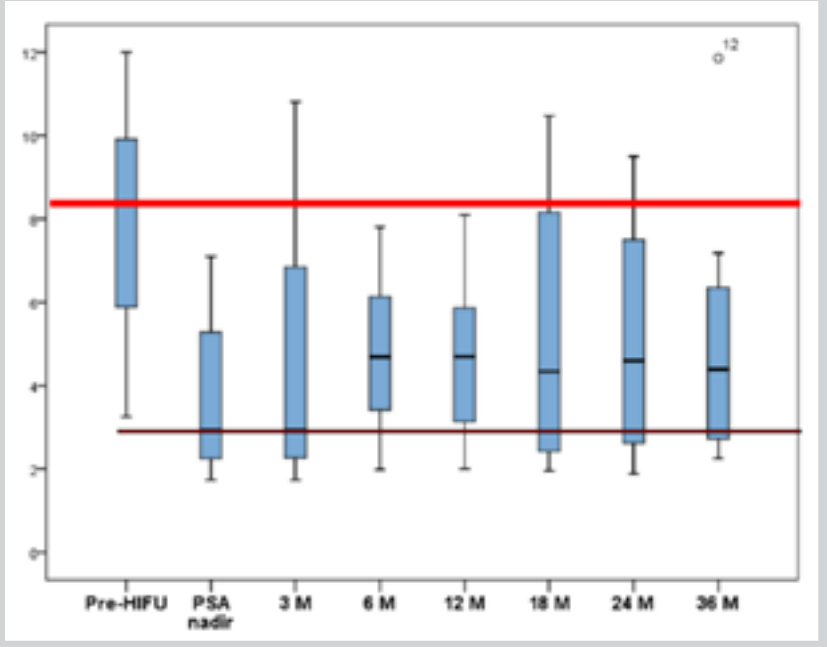
Introduction and Objectives: To assess early follow-up of focal Ablatherm HIFU for organ-confined prostate cancer (PCa) in selected patients.

Materials and Methods: Between February 2012 and August 2013, 55 patients with localized prostate cancer were assigned to focal ablatherm HIFU protocol. Forty four patients had complete data for the analysis and composed the population of the study. Inclusion criteria were: unilateral disease, clinical stage of T1c to T2a, maximum positive biopsies < 33%, Gleason score ≤ 7 (3+4), no extraprostatic extension disease. No previous prostate cancer-related treatment was accepted. Ninety percent of patients were selected for focal therapy with transperineal saturation biopsy. Hemi-ablation was carried out with the Ablatherm HIFU system (Edap TMS, Lyon France). Oncological and functional outcomes were analyzed in the follow-up. Control biopsies were done within the first year of follow. Treatment failure was defined as a positive biopsy or need for salvage therapy.

Results: Median number of biopsies were 15 (6-54) with at least 1 positive biopsy in 55 treated patients (a maximum of 5 positives unilateral cores was observed in one case). Median age at time of treatment was 67 years (range 50-87), median PSA was 6 ng/ml (range 1.6-15), median prostate volume was 35 g (15-80), median BMI was 24 (19-32), Gleason score was 2+3, 3+2, 3+3 and 3+4 in 1, 3, 46 and 5 patients, respectively. The median PSA nadir was 2.9ng/ml (0.1-13.25) with a median time to nadir of 22 weeks (11-52). Median PSA velocity was 0.7ng/mL/year. Mean follow-up was 14.8 months (2.1-34). Out of 44 evaluable patients, biochemical recurrence was verified in 15 patients (34%) based on Phoenix criteria. The negative biopsy rate was 69% (29 patients out of the 42 evaluated). Two patients with positive biopsies in the non-treated lobe with negative biopsies in the treated lobe. Secondary treatment in 4 patients (8%): 2 HIFU retreatments, 1 HIFU retreatment followed by radical prostatectomy and 1 patient receiving intermittent hormonotherapy. Three of these patients harbored positive in the treated area (1 patient gleason 7 (3+4) and 2 patients gleason 6). The mean PSA value dropped significantly at 12 months in 36 patients (Figure 1). Evaluation at three months postoperative period showed no significant changes for both ICS and international symptom prostate score (p=0.876 and p=0.130). At the same time period a significant impact was showed for IIEF score (p=0.001). Complications included 9% of grade II Clavien classification events. There were two Clavien III events.

Conclusions: Ablatherm HIFU Hemiablation is a compelling low-morbidity option in selected patients in localized low-risk PCa with a low secondary treatment rate. In our experience postoperative biopsies and Phoenix criteria were not systematically associated. Longer follow-up is expected for establishing further considerations regarding oncological outcomes of this approach.

UP.471, Figure 1. PSA values in follow-up of Ablatherm-HIFU (box plot).



UP.472

Targeted Histoscanning Guided Prostate Biopsy: Initial Clinical Experience

Sivaraman A[1,2], Sanchez-Salas R[2], Barret E[2], Macek P[3], Secin F[4], Prapotnich D[2], Rozet F[2], Galiano M[2], Cathelineau X[2]
[1]St. John's Medical College, Bangalore, India; [2]Institut Montsouris, Paris, France; [3]General University Hospital and First Faculty of Medicine, Charles University, Prague, Czech Republic; [4]San Lazaro Foundation and CEMIC, Buenos Aires, Argentina

Introduction and Objectives: The sensitivity and specificity of prostate histoscanning (PHS) in detecting PCa lesion ≥ 0.1 cm^3 are 60% and 66% respectively. The aim of this study was to evaluate the feasibility of PHS guided target acquisition and transrectal ultrasound (TRUS) biopsy using the additional specialized software Prostate HistoScanning™ True Targetting (PHS-TT).

Materials and Methods: PHS-TT (Histoscanning™, Advanced Medical Diagnostics, Waterloo, Belgium) was performed on 43 patients who were planned for TRUS biopsy between February 2013 and September 2013. Procedure was done under sedation or general anesthesia with patient in lateral position. TRUS images were acquired using a side fire probe with a ring adapter magnetically attached to a rotation mover. Data were processed in the Histoscanning T-T™ workstation with software version 3.0. PHS was performed by the software and all abnormal areas ≥ 0.2 cm^3 were highlighted. Volume of abnormal area was noted and targets were planned using the embedded software. Targets were plotted on the abnormal areas in the anterior region of the prostate and biopsied. Patients also underwent routine bi-sextant biopsy. Final histopathology of all the cores was noted.

Results: Forty-three patients underwent both 'targeted PHS-TT guided' and 'standard 12 core systematic' biopsies. All the patients had abnormal areas in the PHS with a mean volume of 4.3 g. Overall cancer detection rate was 46.5% (20/43). Individual cancer detection rates for systemic cores and target cores were 44% (19/43) and 26% (11/43), respectively. Detection rate of target cores raised to 43.7% (7/16) in biopsy naïve patients. A total of 15.2% (31/204) target cores and 17.4% (90/516) systematic cores were positive for cancer and one patient had cancer detected only in the target cores. In biopsy naïve patients, cancer detection rate (43.7% vs. 14.8%. p = 0.06) and the cancer positivity of the cores (30.1% vs. 6.8%. p < 0.01) of target cores were higher than those patients with prior biopsies. In patients with T1c cancer, the mean % of cancer / core length was higher in target cores than the systematic cores (51.7% vs. 37.2%. p = 0.07).

Conclusion: The results of target biopsies were

comparable to systematic biopsies and were better in certain variables.

UP.474

Intra Ocular Pressure Evaluation during Robot Assisted Laparoscopic Prostatectomy

Nakao I[1], Tokuda Y[2], Kusumoto M[1], Tobu S[2], Udo K[2], Noguchi M[2], Enaida H[1], Hatano T[2,3], Uozumi J[2]

[1]Dept. of Ophthalmology, Saga University, Saga, Japan; [2]Dept. of Urology, Saga University, Saga, Japan; [3]Tokyo Medical University, Tokyo, Japan

Introduction and Objectives: Generally, prostate cancer patients who have glaucoma should avoid Robot Assisted Laparoscopic Prostatectomy (RALP) because possibility of visual field loss due to high intra ocular pressure condition. The aim of this study is to evaluate the intra ocular pressure (IOP) during RALP in order to clarify the predictable ophthalmological risk factor for steep head-down position during surgery.

Materials and Methods: Five of RALP patients, 10 eyes have done ophthalmological check including IOP, corneal thickness, anterior chamber depth and angle opening distance preoperatively. Age was averaged 67 years old (range: 63-74). BMI was averaged 25.8 (range: 23.2 -27.2). RALP was performed by a single surgeon. Console time was averaged 180 minutes (range: 158 - 220). During RALP procedure, IOP was checked by Perkins tomometer at prior head down position, 30 min, 60 min, 120 min, 180 min during head-down position and putting back supine position. Head down steep was 30 degree in all cases. No ophthalmic adverse event was recorded after surgery.

Results: In every case, IOP at head-down position elevated averaged 20 mmHg higher than that of supine position time-relatively until 120 minutes. IOP decreased immediately after putting back to supine position. Preoperative individual higher IOP correlated with intraoperative higher intra ocular pressure statistically (R^2: 0.9092). There were no correlation between intra ocular pressure elevation and personal preoperative condition such as corneal thickness, anterior chamber depth and angle opening distance.

Conclusion: IOP during the operation would be predictive by preoperative intra ocular pressure. However, further study is needed for correlation between operation time length and postoperative eye condition because our data was small and immature. Even so we have some disadvantage such as the operation view or the difficulty of approaching technique, we would better select the mild head-down position or retroperitoneal approach for the patients with higher IOP until clarifying the time dependent risk.

UP.475

Medium- to Long-Term Follow-Up of Patients Treated with Retropubic Radical Prostatectomy for Clinically Localized Prostate Cancer: First Report from Pakistan

Abbas F, Nazim S, Nadeem M, Faruqui N

Aga Khan University Hospital, Karachi, Pakistan

Introduction and Objectives: To evaluate the medium- to long-term cancer control, morbidity and mortality in men undergoing radical retro pubic prostatectomy (RRP) and PLND (pelvic lymph node dissection) for clinically localized adenocarcinoma prostate (CaP).

Materials and Methods: From December 1997 to June 2012, two hundred patients underwent RRP and PLND for localized CaP. All patients with clinically confined biopsy proven adenocarcinoma of prostate were included. Total of 207 patients identified from the hospital data base, of which, 25 patients were excluded. Patient's characteristics, operative data, morbidity, mortality, progression-free survival (PFS) and cancer specific survival (CSS) were analyzed. Statistical analysis was done using SPSS v. 19. Chi- Square and log rank test were applied for statistical significance. Kaplan Meir curve was plotted for survival estimate.

Results: The mean age was 63.6 years (range: 43 to 77 years). Mean pre-operative (PSA) was 21±19 ng/ml (1.0 to 131), 50% had gleason score of more than 6 and nearly 50% had clinical stage above cT2a. RRP and bilateral PLND was performed in 192 patients (87%) of which 35 (20%) had nerve-sparing surgery. On final histopathology 78% of tumors were confined to the specimen, 13% had seminal vesicle invasion and 12% had nodal metastasis. Twenty four (12.5%) patients had positive surgical margins of which 13 patients had rising PSA requiring adjuvant treatment while remained disease free on long-term follow-up. Overall 85% of the patients were fully continent while 15% had mild to moderate stress urinary incontinence. At median follow-up of 41±31 months (26-170 months), the 5 and 10 years overall survival and PFS were 92%, 58% and 85%, 68% respectively. On multivariate analysis, PSA, Gleason, Clinical Stage, D'Amico Risk Group, Positive surgical margin, Seminal Vesicle involvement, final pathological stage were all found to be independent predictor of PFS. The 5 and 10 years CSS was 98% and 80% indicating durability of procedure.

Conclusions: Our long-term results indicate that RRP has an excellent potential for cancer control with low morbidity in men with localized CaP and our data is consistent with larger data series from other centers around the world.

UP.476

Dynamics of Lower Urinary Tract Symptoms following Radical Prostatectomy as Assessed by International Prostate Symptom Score

Kim S, Kim S, Choo S

Ajou University School of Medicine, Suwon, South Korea

Introduction and Objectives: We assessed change in lower urinary tract symptoms in patients undergoing RP using the simple and universal method of International Prostate Symptom Score (IPSS).

Materials and Methods: From January 2008 to February 2013, 253 patients underwent RP. The night before the operation, all patients completed the IPSS questionnaire. Urethral catheter was removed at post-operative day 8 to 12. At post-operative visit at 1, 3, 6, 9 and 12 months, patients completed the IPSS. Wilcoxon-signed rank test was used to compare the different IPSS values and its components over time from baseline.

Results: The mean patient age was 67.4±7.8. One-hundred fifty three patients had completed both preoperative IPSS and IPSS at one year after RP. The mean IPSS at baseline and at post-operative month 1, 3, 6, 9 and 12 were 13.0, 15.4, 12.4, 11.9, 11.0 and 10.6, respectively. IPSS significantly worsened at month 1 from baseline (p=0.009), and then significantly improved from baseline at month 9 (p=0.014) and 12 (p=0.002), which was in line with significant temporary worsening of irritative symptom score at month 1 (5.6 versus 7.5, p<0.001), and significant improvement in obstructive symptom score at month 9 (7.4 versus 5.4, p=0.002) and 12 (7.4 versus 5.2, p>0.001). Patients were divided into subgroups according to mild (IPSS<8, n=44), moderate (IPSS of 8 to 15, n=52) and severe (IPSS>15, n=57) symptoms. For patients with mild symptoms, IPSS at month 12 significantly worsened from baseline (4.3 to 8.0, p=0.014), while it did not change significantly for patients with moderate symptoms (11.1 to 10.8, p=0.687). For patients with severe symptoms, IPSS at month 12 significantly improved from baseline (21.4 to 12.3, p>0.001).

Conclusion: IPSS in patients undergoing RP showed dynamic change over time with initial worsening and progressive improvement till 1 year. Patients with mild, moderate and severe symptom score showed different dynamics of IPSS following RP. These suggest that baseline and serial IPSS measurements are useful tools in the pre-treatment patient counseling and postoperative monitoring of urinary symptoms in patients undergoing RP.

UP.477

Maintenance of Serum Testosterone Concentration below Castrate Level after Discontinuation of Androgen Deprivation Treatment (ADT): The Duration of ADT the Only Affecting Factor

Bang W, Oh C, Yoo C, Ko K, Yang D, Lee Y, Lee W, Han J, Cho J
College of Medicine, Hallym University, Chuncheon, South Korea

Introduction and Objectives: To evaluate factors affecting maintenance of castration status in intermittent androgen deprivation therapy (IADT) for prostate cancer after discontinuation of ADT.
Materials and Methods: We retrospectively evaluated 56 men (mean age 78.5 years) with prostate cancer who underwent ADT >6 months as primary (60.7%), adjuvant (35.7%) or salvage (3.6%) treatment. ADT regimens included goserelin (62.5%), leuprorelin (14.3%), triptorelin (14.3%), and goserelin with bicalutamide (8.9%). Median duration of initial ADT was 22.5 months (range 6–91), and median follow-up was 8.95 months (range 3–44.6). Initial mean serum prostate-specific antigen and testosterone levels were 70.2±144.4 ng/mL and 4.01±0.89 ng/dL, respectively, and immediately after discontinuation of ADT they were 0.07±0.12 ng/mL and 0.07±0.05 ng/dL. Relationships between clinicopathological factors and maintenance of castration status after discontinuation of ADT were evaluated by univariate and multivariate analyses.
Results: Median testosterone-recovery free survival time was 9.1 months. Univariate analysis showed that duration of initial ADT was the only factor associated with maintenance of castration status (p=0.014, relative risk 0.971, 95% confidence interval 0.949–0.994). Receiver operating characteristic curve analysis showed that the optimal duration of initial ADT was 27 months (sensitivity 0.738, specificity 0.714; AUC 0.794, p=0.001, 95% CI 0.671–0.0917). Castration status was maintained longer in subjects who underwent long-term (≥27 months) initial ADT (n=21) compared with those who underwent short-term ADT (n=35; p=0.034).
Conclusions: To maintain testosterone below castrate level after discontinuation of ADT as long as possible, the duration of initial ADT should exceed 27 months.

UP.478

Long Term Oncological Outcome of High Risk Prostate Cancer Treated with Laparoscopic Prostatectomy

Takeda H, Matsuzawa I, Suzuki Y, Hamasaki T, Kimura G, Kondo Y
Nippon Medical School, Tokyo, Japan

Introduction and Objectives: The optimal treatment modality for high risk prostate cancer has not been established. Radiotherapy, hormonal therapy, or a combination of treatments are the main strategies, although the feasibility of radical prostatectomy as a first line therapy needs to be considered. We evaluated the long-term oncological outcome of radical laparoscopic prostatectomy.
Materials and Methods: High risk prostate cancer patients who underwent laparoscopic radical prostatectomy at Nippon Medical School from 2000 to 2012 with or without adjuvant or neoadjuvant therapy of any kind were identified. High risk factors are prostate-specific antigen >20 ng/ml, clinical >T3 and pathological Gleason Score >8. Biological failure was defined as PSA ≥0.2 ng/ml.
Results: A total of 179 men were identified. A positive lymph nodal status was not observed in any of the patients, and there was no significant difference in surgical margin positivity (51men, 28%) for biochemical failure. With a follow-up to 120 months (mean 33.7 months), biochemical recurrence-free survival rate was 82.4% with a mean time to recurrence of 14.6 months. Overall survival rate was 96.6% at 5 and 10 years, and cancer specific survival rate was 100% for both 5 and 10 years.
Conclusions: Reasonable long term oncological outcomes can be achieved by radical laparoscopic prostatectomy for high risk prostate cancer.

UP.479

Clinical Outcomes of the Bladder Neck (BN) Preservation Technique through Anatomical Lateral BN Dissection during Robot-Assisted Laparoscopic Radical Prostatectomy

Kim S, Kim T, Cho W, Sung G
Dong-A University Hospital, Busan, South Korea

Introduction and Objectives: Robotic-assisted laparoscopic prostatectomy (RALP) is widely used for the management of prostate cancer. One of the techniques, BN preservation may improve post-prostatectomy urinary continence, but there is still concern regarding increased risk of positive surgical margins and compromising cancer control. We compared the clinical outcomes of BN preservation vs. non-BN preservation groups during robot-assisted laparoscopic radical prostatectomy.
Materials and Methods: From November 2007 through May 2012, 159 patients who underwent RALP by single surgeon were compared in 2 groups on the basis of BN preservation (cBNP, n=112) vs. non-bladder neck preservation (nBNP, n=47). Bladder neck preservation was done by precise anatomical lateral bladder neck dissection technique. Continence was defined by one pad (50cc) or less within 24 hours. Biochemical recurrence was defined as prostate specific antigen 0.1 ng/ml or greater.
Results: Median follow-up for cBNP vs. nBNP groups were 20.8 vs. 32.7 months. There were no statistical difference with patient demographics, operation time, mean blood loss and the pathologic stage in both groups. Mean catheterization time was short in cBNP group (7.1 day vs. 8.9 day; P=0.043). On adjusted analyses of cBNP vs. nBNP groups, cBNP group was associated with better continence at 1, 3months (62.5% vs. 35.5%, p<0.001, 90.6% vs. 71%, p=0.092). In cancer control, there was no

UP.477, Table 1. Univariate analysis of relationships between clinicopathological factors and testosterone recovery after discontinuation of androgen deprivation therapy

	p	HR	95% CI
Age	0.320	0.979	0.938–1.021
BMI	0.294	0.955	0.876–1.041
Prostate volume in TRUS	0.711	1.004	0.984–1.023
T stage	0.207		
N stage	0.356	1.506	0.632–3.591
M stage	0.842	0.729	0.529–2.482
Gleason score	0.694		
Initial PSA	0.542	1.001	0.999–1.002
Initial testosterone	0.241	1.793	0.676–4.757
Baseline PSA	0.432	0.347	0.025–4.867
Baseline testosterone	0.886	0.606	0.001–591.964
Treatment types	0.145		
ADT types	0.808	1.137	0.404–3.205
ADT regimen	0.102		
Duration of ADT	0.014	0.971	0.949–0.994

ADT, androgen deprivation therapy; BMI, body mass index; PSA, prostate-specific antigen; TRUS, transrectal ultrasound

significant difference in surgical margin status between cBNP vs. nBNP group (16.3% vs. 14.5%, p=0.65). Also, biochemical recurrence-free survival was similar in 2 groups.
Conclusions: Bladder neck preservation technique is associated with significantly higher post-prostatectomy continence rates in early period without compromising surgical resection margins when compared to non-BN preservation technique.

UP.480
Radical Perineal Prostatectomy in Treatment of Prostate Cancer
Kalpinskiy A**, Alekseev B**, Nyushko K, Vorobyev N, Krasheninnikov A, Kaprin A
Moscow Hertzen Oncology Institute, Moscow, Russia

Introduction and objectives: Radical prostatectomy (RP) is one of the most reliable methods of treatment of patients (pts) with localized prostate cancer (PC). As it was shown perineal approach is a less invasive method of surgical treatment. The aim of the study was to assess long-term results of perineal RP (PRP) in pts with clinically localized PC.
Materials and Methods: A total of 73 pts after PRP since 2004 till 2013 were included in analysis. Mean age was 64.8±5.1 years (50-74); mean PSA level – 8.8 ng/ml (2.2-20.8). Mean percentage of positive biopsy cores was 25.7±15.4% (8.3-60%). Clinical stage T1c was detected in 15 (20.6%) patients; T2a – in 21 (28.8%) patients; T2b – in 19 (26%); T2c – in 18 (24.6%) pts. Biopsy Gleason score ≤6 was verified in 56 (76.7%) pts, 7 (3+4) – in 4 (5.5%) and 7 (4+3) – in 5 (6.8%); 8 – in 1 (1.4%); not assessed in 7 (9.6%) pts. Low risk PC was verified in 59 (80.8%) pts, intermediate risk – in 12 (16.4%) and high risk – in 2 (2.8%) pts. Lymph node dissection was performed in 8 (10.9%) patients with high or intermediate PC risk via same incision or laparoscopically.
Results: Median follow-up time was 38.5 months. Mean operation time was 130 min; median blood loss was 600ml. pT2b was verified in 4 (5.5%) patients, pT2c – 46 (63%), pT3a – 17 (23.3%) patients, pT3b - 5 (6.8%) and pT4 - 1 (1.4%) patients. Lymph node metastases were found in 1 (1.4%) pts. Postoperative Gleason score ≤6 was observed in 57 (78.1%) pts, 7 (3+4) – in 10 (13.7%) and 7 (4+3) – in 5 (6.8%) pts; not assessed in 1 (1.4%) pts. Positive surgical margin was found in 2 (2.7%) pts. Biochemical recurrence was verified in 14 (19.2%) pts. 5 year biochemical recurrent-free survival (bRFS) and overall survival (OS) were 71.3±7.9% and 96.1±3.8%, respectively. Cox regression analysis revealed statistically significant correlation between PSA level (p=0.04), Gleason score (p=0.03), percentage of positive biopsy cores (p=0.04) and bRFS.
Conclusions: PRP is oncologically safe and feasible procedure in patients with low risk PC. Preoperative clinical staging was not accurate in 33% of pts in our study, in whom morphological examination revealed locally-advanced tumors.

UP.481
Robotic Radical Prostatectomy Pathology Outcomes in Patients Who Discontinued Active Surveillance
D'Elia G, Emiliozzi P, Iannello A, Cardi A
San Giovanni Hospital, Rome, Italy

Introduction and Objectives: Little is known about the outcome of robotic radical prostatectomy (RRP) specimens of patients initially followed using active surveillance (AS). We evaluated pathology findings of 19 patients undergoing RRP after an initial period of AS.
Materials and Methods: From January 2008 to August 2012, n = 49 patients with low-risk prostate cancer entered our AS protocol. Eligibility criteria for AS were: clinical stage T1c, Gleason score 6 (no pattern 4/5), two or fewer positive cores and < 50% single-core involvement, PSA < 10 ng/ml. AS protocol consisted of PSA measurements every 6 months and an annual 10 core biopsy. Progression leading to active treatment recommendation was defined as: PSA > 10 ng/ml or any Gleason pattern grade 4/5 or > 50% cancer in any core or cancer in more than two cores.
Results: A total of 19 patients discontinued AS (38% of the cohort) and underwent RRP (mean age 69 years, range 65-73). Median time to RRP was 13 months (6-22 months). Eleven patients (58%) switched to RRP because of anxiety and 8 patients (42%) underwent deferred RRP due to protocol-based recommendations. The pathologic stage was T2a in 10% of the cases (2 pts), T2b in 5% (1 pt), T2c in 53% (10 pts), T3a in 27% (5 pts) and T3b in 5% (1 pt). The Gleason score of the prostate specimen was upgraded in 58% of cases. A Gleason 6 pattern was evident in 42% of cases, Gleason 3+4 in 21%, Gleason 4+3 in 27% and Gleason 8 in 10%. Unfavorable pathologic RRP results (pT3–4 and/or Gleason score ≥ 4 + 3) were found in 37% of cases (7 pts). All the patients who discontinued AS because of anxiety had pT2 disease. None of the patients with organ confined disease had positive margins whereas 1 patient with extracapsular disease had a monofocal positive margin. Overall positive surgical margin rate was 5.2%. Complete continence (pad free) at 1, 3, 6, and 12 months was 57%, 88%, 94% and 98%, respectively. At 1, 3, 6 and 12 months return of potency (IIEF-5 > 21) with or without the use of oral medications was achieved in 6%, 22%, 51% and 68%, respectively.
Conclusion: In our series, there was a high rate of AS discontinuation and most of these patients switched to defer RRP because of anxiety. This might be related to profound popularity of RRP among patients in the belief of opting for a safe and efficacious intervention. This is confirmed by our high rates of early return to continence and preservation of erectile function despite the old age of the cohort. Pathology results in men who were initially followed with AS show potentially unfavorable outcomes in 37% of the cases. This finding emphasizes the need for better prediction tools to achieve safe AS protocols.

UP.482
Surgical Margins Less Than 1mm Have No Effect on Biochemical Recurrence after Robotic Radical Prostatectomy
D'Elia G, Emiliozzi P, Iannello A, Cardi A
San Giovanni Hospital, Rome, Italy

Introduction and Objectives: Positive surgical margins (SM) are universally acknowledged as an independent predictor of biochemical recurrence after open radical prostatectomy. However, it is not clear whether tumor distance less than 1 mm from the surgical margin might affect biochemical failure. We assessed the impact on biochemical recurrence in men with robotic radical prostatectomy specimens having negative SM, positive SM and SM less than 1 mm.
Materials and Methods: A consecutive series of 400 men undergoing robotic radical prostatectomy with a minimum follow-up of 24 months was divided into 3 groups based on margin status: negative, positive and less than 1 mm. Biochemical recurrence was defined as PSA greater than 0.2 ng/ml on 2 consecutive tests. Cox regression models were constructed to evaluate predictors of biochemical recurrence.
Results: A total of 40 patients (10%) had margins less than 1 mm, 60 patients (15%) had positive margins (8% of T2 and 26% of pT3) and 312 patients (75%) had negative margins. Preoperative PSA, pathological stage, Gleason score, and margin status were independent predictors of biochemical recurrence. Patients with negative SM and those with a SM less than 1 mm had similar rates of biochemical recurrence (log rank test p=0.18).
Conclusions: Surgical margins less than 1 mm seem to have no effect on biochemical recurrence after robotic radical prostatectomy. Longer follow-up is necessary for confirmation of this finding.

UP.483
Urinary Incontinence after Salvage High-Dose-Rate Brachytherapy in Prostate Cancer Patients
Wojcieszek P, Fijałkowski M, Andrejczuk A, Głowacki G, Szlag M, Kellas-Ślęczka S, Białas B
MSC Memorial Cancer Centre and Institute of

Oncology, Gliwice, Poland

Introduction and Objectives: There are many modalities in the primary management of prostate cancer patients. Recurrence management is difficult, particularly after primary irradiation. Salvage high-dose-rate brachytherapy (HDR-BT) seems to be very useful tool in prostate cancer relapse treatment. It provides local high dose irradiation. Unlike permanent seeds dose can be fractionated and optimized to protect organs like urethra or rectal wall. The aim of our study was to evaluate probability of urological interventions and urinary incontinence after salvage HDR-BT.
Materials and Methods: Prospective pilot study on salvage HDR-BT was started in our centre in 2008. Main inclusion criteria were: localised prostate cancer relapse after EBRT (alone or combined with BT), no prior radical prostatectomy and histopalogical confirmation of recurrence. Included patient was planned for three fractions of HDR BT, 10 Gy each, every two weeks in 28 days. We included in the analysis all salvage patients treated until 31/12/2012. Urinary retention, urological interventions and urinary incontinece rates were assessed. 5-year adverse event-free survivals were calculated.
Results: Eighty-three men were enrolled in this study. Median age was 70 years (57-81). Median follow-up was 34 months (5-66). Eighteen men (21%) underwent urological intervention with median time of 27 months (2-66) after salvage HDR-BT. Eleven (13%) men suffered from urinary retention. Five of them had urethrotomy, 6 had transurethral prostate resection (TURP) and 1 had combination of both. 10 patients had urological intervention due to refractory obstructive urinary symptoms (5 TURP; 5 urethrotomy). Twelve patients developed urinary incontinece after urological intervention. Seven patients had urinary incontinence without any intervention. Three men needed suprapubic catheter. 5-year urological intervention-free survival was 72%. 5-year urinary incontinence-free survival (UIFS) was 69%. Any intervention was linked with urinary incontinence (5-year UIFS 22% vs. 85%, p-0.0000; HR-3.65).
Conclusions: Salvage HDR-BT has acceptable adverse-event rates. There is high probability of urinary incontinence after urological intervention.

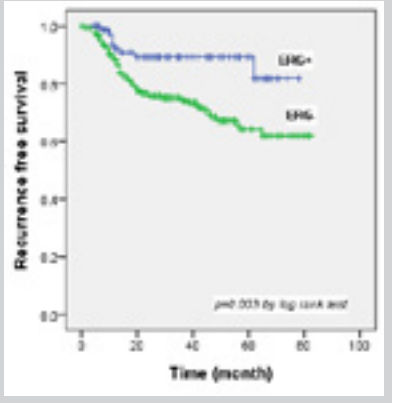
UP.485

Overexpression of ERG Is Associated with Favorable Outcome of Low Biochemical Recurrence in Prostate Cancer

Kim S[1], Park W[2], **Joung J[1]**, Lee K[1], Kim S[3], Lee G[4], Hong E[4]
[1]Dept. of Urology, Center for Prostate Cancer, Research Institute and Hospital of National Cancer Center, Goyang, South Korea; [2]Dept. of Pathology, Center for Prostate Cancer, Research Institute and Hospital of National Cancer Center, Goyang, South Korea; [3]Dept. of Pathology, Yonsei University Severance Hospital, Seoul, South Korea; [4]Dept. of Pathology and Center for Prostate Cancer, Research Institute and Hospital of National Cancer Center, Goyang, South Korea

Introduction and Objectives: TMPRSS2-ERG gene fusion resulting from the chromosomal rearrangement of the androgen-regulated TMPRSS2 gene and the ETS transcription factor ERG, and PTEN deletion with its absence of expression are two of the most common genomic events found as new prognostic biomarker in human prostate cancer. The aim of this study is to investigate the expression of ERG and PTEN in prostate cancer using immunohistochemical stain and evaluates its correlation with clinicopathologic characteristics.
Materials and Methods: Tissue microarrays were made from 437 prostate adenocarcinoma tissues and immunohistochemical stains were performed to evaluate the expression pattern of ERG and PTEN proteins and to analyze its association with clinicopathological parameters including the prognosis of biochemical recurrence. All results were considered statistically significant when *P* values were <0.05.
Results: The clinicopathologic characteristics were analyzed statistically. ERG and p53 overexpression were observed in 90 (20.6%) and 45 (10.3%) cases of 437 prostate cancers, respectively. PTEN loss was found in each 8 (1.8%) cases. The group showing overexpression of ERG showed low serum PSA level and low Gleason's score sum (P <0.05, respectively) with low biochemical recurrence rate. PTEN protein expression was not found significantly related to clinicopathological parameters. In multivariate analysis, only preoperative PSA (HR 2.261, 95%CI 1.133-4.514) and pathologic T stage (HR 3.047, 95%CI 2.004-4.633) were significant risk factors for biochemical recurrence free survival (p<0.05). After compared between ERG expression and ERG non-expression groups, biochemical recurrence free survival showed significant differences (p<0.05). In categorizing the patients into 4 groups according to ERG expression and PTEN loss, all the 4 groups had significant differences in biochemical recurrence free survival curve (p<0.05).
Conclusions: ERG expression has predictive values for biochemical recurrence free survival of prostate cancer after radical prostatectomy even though we have no long-term follow-up date.

UP.485, Figure 1. Biochemical Recurrence Free Survival Curve According to ERG Expression



UP.486

Measurement Serum Level of PSA and Free PSA in Fresh and Freezed Blood Samples

Taghavi R, Darabi-Mahboub M, Ataeian S, Hasanzade J
Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: Prostate specific antigen (PSA) is a useful tumor marker in diagnosis, staging, monitoring and determining the recurrence prostate cancer. This study was design to compare the serum level of PSA and F PSA in fresh and frozen (at -20C for 72 hrs) blood samples.
Materials and Methods: A total of 111 patients referring to the urology clinic of Imam Reza Hospital, having voiding symptoms, and in need of testing their PSA and F PSA serum level were selected as the study population. For these patients the PSA and F PSA was measured stimultaneously in fresh and frozen (at -20C for 72 hrs) blood samples in two independent labs. Then data analyzed using SPSS software.
Results: In two labs, there was not any significant difference between the levels of PSA in fresh and frozen blood sample (P>0.05). Significant correlation was found between the level of Free PSA in fresh and frozen blood sample (P=0.001). Besides, significant difference was observed between FPSA/PSA ratio in fresh and frozen samples (P=0.01).
Conclusion: Using of frozen blood samples is useful instead of fresh blood samples in evaluation PSA but for free PSA and free PSA to PSA x 100 must be measure by fresh blood samples.

UP.487

Relationship between Body Mass Index and Prostate Specific Antigen in Patient with Lower Urinary Tract Symptoms

Taghavi R, Aameli M, Jahed-Ataeian S, Hasanzade J
Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: In recent years the use of Prostate Specific Antigen test (PSA) has reduced the mortality rate of prostate cancer. Certain factors by affecting the levels of PSA, decrease or increase prostate cancer detection. Some studies suggest the effect of body weight and Body Mass Index (BMI) on PSA,

while some others are contrary to the opinion mentioned. Hence, in this study we examined the relationship between BMI and PSA.
Materials and Methods: In the present study 140 patients with LUTS (Lower Urinary Tract Symptoms) that had referred to the Urology clinic of Imam Reza Hospital (affiliated to Mashhad University of Medical Sciences), were studied. Patients with prostate cancer, prostatitis, recurrent UTI, taking finasteride and history of prostate surgery were excluded. The data of body weight, BMI, prostate volume, PSA and Free PSA were collected. Patients were divided in two groups; Group A with a BMI less than 27 and Group B with BMI equal and greater than 27. The data were analyzed with T-test, Correlation and SPSS (version 15).
Results: Mean of age in patients was 63.6 ±9.98.Two groups in regard to age, prostate volume, and Free PSA did not differ statistically. Mean PSA level in Group A was 3.9±4.3 and in Group B is 2.7±1.3. There is a significant difference in mean PSA level between two groups (p=0.04). We tested the correlation between PSA levels and BMI which were inversely correlated with increased BMI (p= 0.04, R= -0.175).
Conclusions: This study showed that PSA is reduced with increasing BMI. However BMI does not affect Free PSA, thus the ratio between total PSA and free PSA rises, delaying prostate cancer diagnosis. The result of the present study showed that in different BMI levels physicians need different PSA cut points to decide on performing prostate biopsy.

UP.488

Association between Serum Leptin Level and High-Risk Prostate Cancer

Kikugawa T, Noda T, Miura N, Tanji N, Yokoyama M
Ehime University, Toon, Japan

Introduction and Objectives: Adipocytokines such as leptin and adiponectin are polypeptide hormones released directly from adipocytes. Adipocytokines have been previously linked with carcinogenic mechanisms and may be associated with an increased risk of advanced prostate cancer. Thus, we here aimed to investigate the association between serum adipocytokine levels and the aggressiveness of prostate cancer.
Materials and Methods: A total of 205 prostate cancer patients received external beam radiotherapy and provided blood samples between 2002 and 2009 in our institute. The median patient age was 74 years (range, 58-81). The Gleason score (GS) was ≤6, 7, and ≥8 in 59, 68, and 73 patients, respectively. The patients were classified into low- (N=28), intermediate- (N=84), and high-risk (N=113) groups. Serum adiponectin and leptin were analyzed by enzyme-linked immunosorbent assay, and the relationship between the levels of serum adipocytokines and body mass index (BMI), prostate-specific antigen (PSA), GS, and these clinical risk groups were analyzed.
Results: A significant positive correlation was observed between serum leptin levels and BMI (p<0.001), and a negative correlation was observed with serum adiponectin levels (p=0.003). While the adiponectin levels were not significantly associated with high GS or high PSA, the leptin levels were conversely found to be significantly higher in subjects in the high GS, high PSA, and high-risk groups.
Conclusions: We here demonstrated that high leptin levels due to obesity may be associated with the aggressiveness of prostate cancer in Japanese patients.

UP.489

Central Obesity (CT-Measured Visceral Adipose Tissue) Is High Risk for a High Gleason Score

Endo F[1], Hayashi C[1], Hishiki K[1], Kyono Y[1], Matsushita K[1], Shimbo M[1], Hattori K[1], Muraishi O[1], Ohwaki K[2]
[1]St.Luke's International Hospital, Tokyo, Japan; [2]University of Teikyo, Tokyo, Japan

Introduction and Objectives: Although recent reports have indicated that obese prostate cancer patients may have poorer prognoses than those of normal patients, the relationship between central obesity and higher pathological malignant potential has not yet been determined. We evaluated the association between Gleason scores (GSs) obtained from radical surgeries and accurate visceral fat tissue (VAT) measured with CT.
Materials and Methods: The prostate cancer patients treated with open or robotic radical prostatectomy between December 2008 and December 2012 at St. Luke's International Hospital were included in this study. The patients who received any treatment before surgery were excluded. GS, CT-measured VAT, waist circumference (WC), pre-operative PSA level, and body mass index (BMI) were obtained by a retrospective chart review. High GSs, i.e., GSs ≥3+4, which were determined as the response variable, were analyzed statistically based on age, PSA, VAT, and WC.
Results: There were 294 patients in the study. Their average age was 67±7. The mean pre-operative data were: PSA 6.63 (IQR: 4.47-9.52) ng/ml; BMI 23.7±2.6 kg/ m^2, VAT 130.7±50.0 cm^3; and WC 85.2±7.8 cm. Also, the numbers of patients with GSs of 6, 7, 8, and 9 were 72, 169, 39, and 14, respectively. A univariate analysis showed a statistical difference between high GS and VAT in the obese group (BMI ≥25) (low GS: 155.4±45.7 vs. high GS: 176.4±43.9, p = 0.037). However, no relation existed in the non-obese group (114.8±43.0 vs. 120.5±48.4, p = 0.384). A multi-variate analysis indicated that only the obese patients' VAT values were related to high GSs (OR1.012, 95% CI 1.000-1.024). A similar trend was observed for WC, but there were no significant differences in the univariate and multi-variate analyses.
Conclusions: A relationship was observed between high GS and a high volume of VAT only in the obese group. Surplus VAT may be a cause of elevated aggressiveness in prostate cancer. WC is a less accurate marker than VAT.

UP.490

Androgen Receptor Phosphorylation at Serine 578 Is a Predictor for Intervention in an Active Surveillance Cohort

Payne S[1], Willder J[1], Fraser S[2], Horgan P[1], Leung H[3], Underwood M[2], Edwards J[1]
[1]University of Glasgow, Glasgow, UK; [2]Southern General Hospital, Glasgow, UK; [3]Beatson Institute of Cancer Research, Glasgow, UK

Introduction and Objectives: Active surveillance is employed in men with low risk localised prostate cancer to avoid or delay treatment that may otherwise be unnecessary. The challenge in this population is to identify those patients who are more likely to progress and require treatment. Prostate cancer cell growth and disease progression is critically dependent upon androgen receptor (AR) function. One mechanism of AR activation is via its post-translational modification by phosphorylation. We investigated if the phosphorylation status of AR at serine site 578 (S578) in tumour cells represents a possible predictive biomarker for disease progression within a prospective active surveillance patient cohort.
Materials and Methods: Scansite 2.0 predicted AR serine site 578 (pAR S578) to be phosphorylated by PKC. Immunohistochemistry for pARS578 was performed on hormone-naïve prostate cancer specimens obtained from 45 patients at the time of diagnosis undergoing active surveillance. Antibody specificity was confirmed by single band western blot and peptide competition assay. A weighted histoscore method was used to quantify protein expression (Kirkegaard et al, Histopathlogy, 2006). The level of cytoplasmic and nuclear pAR S578 expression in tumour cells was then correlated with clinico-pathologic factors and clinical outcome measures including time to biochemical relapse and time to intervention.
Results: Nuclear pAR S578 expression was not associated with clinio-pathological parameters, but high cytoplasmic pAR S578 was significantly associated with decreased time to intervention from diagnosis (p=0.024), increased expression of PSA at diagnosis (p=0.014) and increasing age at diagnosis (p=0.014).
Conclusion: High expression of pARS578 in tumour cells is associated with a shorter time to intervention and may serve as a novel independent predictive bio-marker in prostate cancer for patients managed by active surveillance.

Cytoplasmic pAR S578 is a better predictor of poor outcome than nuclear pAR S578. Validation in an independent cohort and mechanistic work to confirm the role of PKC as kinase responsible for phosphorylation is required.

UP.491

Diagnostic Performance of Free-to-Total PSA Ratio to Predict Prostate Cancer in Men with and without Renal Dysfunction

Tadtayev S, Vasdev N, McNicholas T, Lane T, Adshead J, Boustead G
Hertfordshire and South Bedfordshire Urological Cancer Centre, Stevenage, UK

Introduction and Objectives: Serum total PSA (tPSA) is a weak predictor of finding prostate cancer (PCa) on biopsy in the "grey" diagnostic zone < 10 ng/mL. Free-to-total PSA ratio (%f/tPSA) has been used to improve specificity of tPSA. However, men with renal dysfunction (CKD stage ≥ 2) but not PCa, have spuriously elevated free PSA levels (fPSA), as the result of impaired elimination of this low molecular protein by glomerular filtration. CKD affects 47.12% (stage 2) and 10.10% (stage 3 and 4) of men older than 40, yet diagnostic performance of %f/tPSA in this cohort is unknown.
Materials and Methods: We evaluated records of 370 men with serum tPSA < 10 ng/mL who had primary TRUS biopsy over 24 months in 2009-2011, including any subsequent histology. MDRD equation was used for calculation of estimated glomerular filtration rate (eGFR) and standard diagnostic performance tests were employed with a threshold %f/tPSA value of 19% and any positive histology as the reference.
Results: The median patient age was 65 (43-86) years, median tPSA 6.3 (0.4-9.9) ng/mL, median %f/tPSA 13 (3-68%), median eGFR 82.3 (33.8-157.4) mL/min/1.73 m^2, median period between biopsy and case review 41 (30-53) months. Prostate cancer was detected in 46.49% of patients on initial biopsy and in further 4.86% on repeat biopsy/TURP after negative initial biopsy.
Conclusion: Diagnostic performance of %f/tPSA is associated with change in eGFR, implying that patients with CKD are at risk of misdiagnosis, if decision to perform evaluation/biopsy is solely based on %f/tPSA levels. The exact diagnostic thresholds for %f/tPSA in patients with CKD are unknown. Therefore, eGFR should be established in all patients undergoing %f/tPSA test and its results interpreted with caution in those with renal impairment.

UP.491, Table 1.

	eGFR > 90	eGFR 60–89 (CKD 2)	eGFR 30–59 (CKD 3)
Patients	125	215	30
Sensitivity	**87.50%** CI 75.92-94.80	**80.00%** CI 71.72-86.74	**64.29%** CI 35.18-87.11
Specificity	**15.94%** CI 8.25-26.74	**24.21%** CI 16.01-34.08	**62.50%** CI 35.47-84.71
PPV	**45.79%** CI 36.12-55.70	**57.14%** CI 49.29-64.74	**60.00%** CI 32.33-83.57
NPV	**61.11%** CI 35.77-82.44	**48.94%** CI 34.08-63.93	**66.67%** CI 38.41-88.05

UP.492

The Prostate Cancer Survivorship Programme: A New Pathway for Cancer Survivors

Goonewardene S[1], Nanton V[2], Young A[2], Persad R[3], Makar A[4]
[1]Hometon University Hospital, London, UK; [2]University of Warwick, Coventry, UK; [3]Bristol Southmead Hospital, Bristol, UK; [4]Worcestershire Acute Hospitals, Worcester, UK

Introduction and Objectives: Survivorship encompasses patients who have completed curative cancer management. Previously, survivorship follow-up was based in secondary care. Already overburdened clinics were full of survivors, which could have been followed-up in the community, putting additional pressure on already overburdened staff. In addition patients may receive brief clinic appointments, limited holistic care, and experience financial burdens. We have piloted a new community based model in prostate cancer survivors with over five hundred patients. On entering the programme, the patient would be discharged from clinic, and entered into a specially developed software database. This reviews new PSA results, triggering alerts if results are abnormal, resulting in a specialist nurse (CNS) bringing patients back to clinic for review. The programme is also supplemented by survivorship conferences once a year where patients have access to healthcare professionals and a range of information on prostate cancer related topics. We aim to evaluate this model with Pickering Institute patient questionnaires, find out what they want at a community based centre and GP perspective on this programme.
Materials and Methods: We have developed a team composed of PCTs, commissioners, psychology, project managers and IT workers. Patients were entered into this programme over the past 3 years. Inclusion criteria specified patients must be: 2 years post radical prostatectomy with a negligible PSA reading, 3 years post radical radiotherapy (with or without hormones) with a stable PSA reading or 3 years post brachytherapy with a stable PSA reading. Patient questionnaires focused on distress, perceived control and quality of life (rated on a scale of 1-10). Focus groups were conducted to collate views of the overall scheme. We currently have 730 on this programme.
Results: We demonstrate patients do have psychological, emotional and social issues which are unaddressed. They also greatly want a patient centre, and specify needs including requirement for sexual health advisors, dieticians and psychologists.
Conclusions: We discuss ways in which these results can be used for development of the programme, including a user led system: better explanation of the system, PSA feedback, a buddying system, and how a programme like this can be put into use for survivors across all specialities.

UP.496

Nomogram to Predict Insignificant Prostate Cancer at Radical Prostatectomy

Lee J[1], Jeh S[1], Kwon J[1], Jung H[1], Kang H[1], Cho K[1], Ham W[1], Lee J[2], Cho I[3], Choi Y[1]
[1]Dept. of Urology, Urological Science Institute, Yonsei University College of Medicine, Seoul, South Korea; [2]Dept. of Urology, Cheil General Hospital and Women's Healthcare Center, Kwandong University College of Medicine, Seoul, South Korea; [3]Dept. of Urology, Inje University College of Medicine, Gimhae, South Korea

Introduction and Objectives: Recently, several studies have reported the development of statistical models for the prediction of insignificant prostate cancer. However, nearly all data are derived from Western populations, which may differ from Asian populations due to genetic variation and differences in prostate cancer screening systems. Moreover, there are no user-friendly tools applicable for Asian men that allow clinicians to predict the probability of insignificant prostate cancer. Therefore, we developed a model predicting the probability of insignificant prostate cancer in Korean men by incorporating a detailed, quantitative assessment of biopsy results into a nomogram.
Materials and Methods: The study population consisted of 225 patients, who were treated at the Severance Hospital by radical prostatectomy without neoadjuvant therapy from September 2011 to December 2012. External validation was carried out using 80 men who were underwent radical prostatectomies between January 2013 and May 2013. Insignificant prostate cancer was defined as pathologic organ-confined disease and a tumor volume of 0.5 cc or less without

Gleason grade 4 or 5. Multivariate logistic regression model coefficients were used to construct a nomogram to predict insignificant prostate cancer from five variables, including age, body mass index, preoperative serum PSA, prostate volume, prostate density, clinical stage, biopsy Gleason score, positive cores ratio and maximum % of tumor in any core. The performance characteristics were internally validated from 200 bootstrap resamples to reduce overfit bias.
Results: Overall, 50 (22.2%) patients had a so-called "insignificant" tumor in nomogram development cohort. PSA, PSA density, prostate volume, biopsy Gleason score, positive core ratio, maximum % of biopsy tumor and cT stage represented significant predictors of the presence of insignificant prostate cancer on the univariate logistic regression model. Multivariate analysis showed that PSA density, positive core ratio and biopsy Gleason score were independent significant factors for insignificant prostate cancer. The area under the curve of this nomogram was 90.33% and, mean absolute error in internal and external validation were 1.9% and 2.9%, respectively.
Conclusion: Our current nomogram provides sufficiently accurate information in clinical practice that may be useful to patients and clinicians when various treatment options for screen-detected prostate cancer are considered.

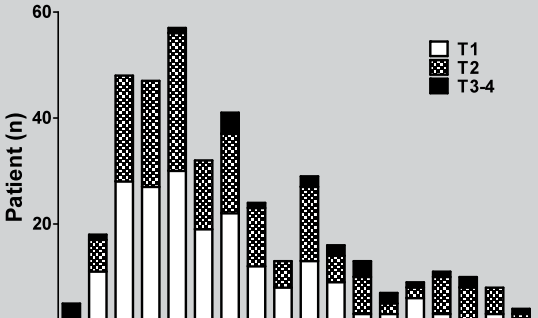
UP.497
Pathological Features of the Index Tumor in Radical Prostatectomy Specimens: Implications for Focal Therapy
Kanao K, Kajikawa K, Kobayashi I, Morinaga S, Muramatsu H, Nishikawa G, Yoshizawa T, Kato Y, Watanabe M, Zennami K, Nakamura K, Sumitomo M
Aichi Medical University, Nagakute, Japan

Introduction and Objectives: Focal therapy has recently gained interest as a new method to control clinically localized prostate cancer (PCa). It has been suggested that focal therapy to the largest (index) lesion is sufficient in multifocal PCa, because non-index lesions are unlikely to contribute to disease progression. However, pathological features of the index and non-index lesions in prostate cancer are not fully evaluated. In this study, we compare the pathological features of index tumor in radical prostatectomy specimens with that of non-index tumors.
Materials and Methods: A total of 51 PCa surgical specimens were retrospectively analyzed. All foci in each prostate were outlined on pathology slides, digitally scanned and exported to 3D slicer software (www.slicer.org) to develop a 3D PCa model. All tumors were individually identified by the software. Gleason score and pathological stage were also individually determined. All tumor volumes were calculated using the program in the 3D slicer. When multifocal disease was observed, the index tumor was considered the largest tumor as measured by volume, without considering its Gleason score. The pathological features of index tumor were compared with that of non-index tumors.
Results: A total of 236 tumors were detected in 51 specimens. The median number of tumors per specimen was 4.6 (range 1-13). The median tumor volume was 0.035 mL (range 1.2 x 10-4 to 7.2), and the median volume of the largest (index) tumor was 1.2 mL. Forty-four specimens demonstrated multifocal disease; 37 index tumors and 6 non-index tumors had a volume of ≥0.5 mL. Forty-six (90.2%) of 51 index tumors were graded highest Gleason score in the specimen. Twelve tumors were staged as pT3, but there were no specimen that did not include index tumor staged as pT3 but non-index tumor staged as pT3. In all, 3 non-index tumors with volume of ≥0.5mL were graded Gleason 4+3 or more.
Conclusion: The results of this study suggest that more than 90% of index tumors have the highest Gleason score and pathological stage, but the possibility cannot be denied that non-index tumors with large volume and high Gleason score may harbor in the prostate.

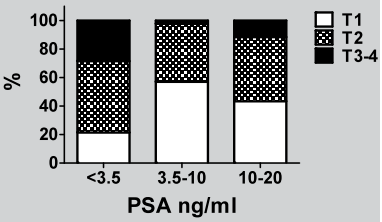
UP.498
The Relationship between Prostate-Specific Antigen and TNM Classification or Gleason Score in Prostate Cancer Patients with Low Prostate-Specific Antigen Levels
Izumi K, Maolake A, Kitagawa Y, Kadono Y, Konaka H, Mizokami A, Namiki M
Dept. of Integrative Cancer Therapy and Urology, Kanazawa University Graduate School of Medical Science, Kanazawa, Japan

Introduction and Objectives: Prostate-specific antigen (PSA) is a useful biomarker for risk classification in prostate cancer patients. However, it is unclear whether in such patients, a low PSA level (<10 ng/ml) at diagnosis correlates to prognosis.
Materials and Methods: Of the 642 Japanese patients who underwent prostate biopsy and were diagnosed with prostate cancer at Kanazawa University Hospital from 2000 to 2010, 406 patients with a PSA level of <20 ng/ml were retrospectively reviewed.
Results: PSA levels in 275 (68%) patients were <10 ng/ml. In patients with PSA levels between 3.5 and 20 ng/ml, the percentage of T1 stage decreased with an increase in PSA levels (Figure 1). However, the percentage of high T stage in patients with a PSA level of <3.5 ng/ml was significantly higher than that in patients having a PSA level of between 3.5 and 10 ng/ml (P < 0.0001, Figure 2). The percentage of metastases (N1 and M1) in patients with a PSA level of <3.5 ng/ml was also significantly higher than that in patients with a PSA level of 3.5–10 ng/ml (P = 0.0025).
Conclusion: Prostate cancer patients with a PSA level of <3.5 ng/ml at diagnosis had a more advanced stage of cancer compared to those with a PSA level of 3.5–10 ng/ml. The risk classification using PSA levels at diagnosis may need to take this specific PSA range into consideration to better predict survival.

UP.498, Figure 1.



UP.498, Figure 2.



UP.499
Tumour Cross-Sectional Area is an Independent Predictor of Gleason Upgrading in Low Risk Prostate Cancer When Measured in Radical Prostatectomy Specimens
Gallagher K[1,2], Good D[1,2], Stewart G[1,2], McNeill A[1]

[1]Dept. of Urology, Western General Hospital, Edinburgh, UK; [2]University of Edinburgh, Edinburgh, UK

Introduction and Objectives: MRI has recently been proven to accurately measure prostate tumour volume (TV). This study aimed to determine if prostate tumour dimensions measured in laparoscopic radical prostatectomy (LRP) specimens were independently predictive of pathological Gleason upgrading in patients with low risk prostate cancer in order to determine the significance of prostate tumour measurements that may be made pre-operatively by MRI in the future.

Materials and Methods: Low risk (Gleason 3+3, PSA<10) patients undergoing LRP (2006-2013) were included. Dominant TV, tumour axial cross-sectional area (AXSA), and corresponding prostate gland measurements were made on digital photographs of 5mm sectioned whole mount LRP specimens using image analysis software. Multivariate analysis was used to determine if prostate tumour measurements were independently predictive of upgrading. Tumour AXSA was then examined using ROC curve analysis and 0.01cm^2 sequential assessments below the 25th centile of AXSA in upgraded tumours to find the cut off with best negative predictive value (NPV).

Results: A total of 164 patients were included (all TRUS Gleason 3+3). Sixty one were upgraded (all Gleason 3+4). PSA, number of positive cores and total percentage positive core length were included as co-variables with each tumour measurement in multivariate analysis (Table 1). At an AXSA cut off of 0.8cm^2 the NPV for upgrading was 0.93 (95%CI 0.82, 0.98). The area under the ROC curve was 0.73 (0.66, 0.81).

Conclusion: Tumour AXSA can be used to exclude Gleason upgrading in low risk prostate cancer with 93% certainty. Studies are now underway to validate these findings using MRI. If the findings can be translated to imaging, they would potentially alter our ability to guide patients with low risk prostate cancer regarding active surveillance versus radical treatment.

UP.499, Table 1.

	Upgrade (95% CI)	No Upgrade (95% CI)	Univariate p value	Multivariate p value
Total	61 (37.2%)	103 (62.8%)	-	-
Age	60.4 (58.3, 62.3)	60.0 (58.8, 61.3)	0.23	-
PSA	6.12 (5.45, 6.75)	5.49 (5.05, 5.92)	0.072	-
Cores positive	3.6 (2.9, 4.3)	2.9 (2.5, 3.3)	0.079	-
% core positive	9.8 (6.9, 13.2)	7.7 (5.8, 9.6)	0.211	-
DTV (cm^3)	3.42 (2.70, 4.09)	1.61 (1.22, 1.97)	<0.0001	0.001
TAXSA (cm^2)	2.34 (1.99, 2.73)	1.36 (1.10, 1.61)	<0.0001	0.007

UP.500

Assessing the Need for Diffusion Weighted and Contrast Enhanced Sequences in Multiparametric MRI for Active Surveillance Patients

Petrides N[1,2], Ridout A[1,2], Coe J[1,3], Emberton M[1,2], Allen C[1], Punwani S[1], Moore C[1,2]
[1]University College Hospitals, London, UK; [2]University College London, UK; [3]

Introduction and Objectives: Follow-up for active surveillance has traditionally been based on repeat PSA, digital rectal examination, and standard transrectal biopsy. The use of MR imaging may provide a non-invasive way to monitor men with stable disease. However, the definition of stability in MRI criteria is not defined. The RECIST criteria, widely used in oncology for assessing response to treatment, assesses lesions which are at least 10mm diameter. However, many men on active surveillance will have lesions smaller than this. Using multiparametric MRI, change can be assessed using volume alone or changes in the appearance of the disease on the different MRI sequences. We report these findings in patients with MRI defined disease progression.

Materials and Methods: Clinical and radiological databases were searched for men who had undergone more than one prostate MRI, and the electronic hospital record was then searched to find men who had not undergone any treatment in the intervening period. Baseline scans and follow-up imaging were assessed to identify those who had shown progression on MR over time and the changes in each MRI sequence documented.

Results: In total 42/196 patients showed MRI evidence of progression during follow-up (mean follow-up duration 2.7 years). Of those, 13 demonstrated an increase in the total volume of disease alone, 23 demonstrated changes in MRI characteristics upgrading the overall suspicion for aggressive disease on MRI and 6 showed changes in both. Comparing the different sequences (T2 images, diffusion weighted images and contrast enhanced images) 4 (17.3%) showed changes in all modalities, in 10 (43.5%) the main change was in contrast enhanced images, in 5 (21.8%) on the T2 sequences and in 4 (17.3%) on the diffusion weighted images.

Conclusion: Each of the different MRI sequences used in multiparametric MRI can be useful in identifying disease progression and should be considered in men on active surveillance.

UP.501

Lymph Nodes Landing Sites in Patients with Prostate Cancer Submitted to Laparoscopic Radical Prostatectomy with Extended Pelvic Lymph Node Dissection

Dobruch J**, Piotrowicz S**, Powroźnik J, Muśko N, Nyk Ł, Borówka A
Dept. of Urology, Centre of Postgraduate Medical Education, European Health Center, Otwock, Poland

Introduction and Objectives: Radical prostatectomy (RP) is the mainstay therapy of patients with localized PCa. Although many efforts were undertaken to identify sentinel lymph node during RP, wide pelvic lymphadenectomy remains the most accurate way of regional lymph nodes (LNs) staging. Therefore, in intermediate and high risk prostate cancer, RP is recommended to be complemented with extended, pelvic lymph nodes dissection (EPLND). Aim: To assess the risk of nodal involvement in patients subjected to laparoscopic radical prostatectomy and to characterize lymph nodes landing sites.

Materials and Methods: Since February 2011 to February 2014, 209 laparoscopic RP (LRP) were performed, among them 109 (52.15%) with EPLND. Presacral and common iliac lymph nodes, external and internal iliac together with obturator lymph nodes were removed.

Results: Mean number of removed LNs was 25.6 (from 3 to 44). Metastases within lymph nodes were found in 15 (13.7%) patients. In comparison to those without lymph nodes involvement, patients who were found to have LNs metastases had greater number of positive biopsy cores (3.08 vs. 5.0 p<0.01), maximum percentage of cancer in biopsy core (40.4 vs. 76.0 p<0.01), greater biopsy and specimen Gleason scores (6.5 vs. 7.4 and 6.5 vs. 7.7) and more frequently advanced clinical and pathological stage. There was no patient who had nodal infiltration without involvement of obturator nodes. The second most frequent landing site of prostate cancer was presacral area (27%). The majority of those (73%) with positive lymph nodes had locally advanced disease.

Conclusions: Extended pelvic lymph nodes dissection should be performed in selected patients during LPR. The most frequent location of LNs metastases remains obturator fossa, however in half of the cases other lymphatic areas are also involved including presacral region.

UP.502

Analysis of the Surgical Treatment of Our Series of Distal and Mid-Penile Hypospadias

Nogueras-Ocaña M[1], **Jimenez-Pacheco A**[2], Tináut-Ranera J[1], Merino-Salas S[1], Zuluaga-Gomez A[1]

[1]San Cecilio University Hospital, Granada, Spain; [2]Santa Ana Hospital, Granada, Spain

Introduction and Objectives: The objective of this study is to analyse our casuistry of distal and mid-penile hypospadias, with and without chordée, and to review surgical outcomes in distal hypospadias following Meatoplasty, MAGPI or Mathieu +/- resection techniques of prepuce or preputioplasty, the On-Lay island flap and Duckett techniques for the mid-penile condition.

Materials and Methods: All patients operated on for distal and mid-penile hypospadias between January 2000 and June 2013 were analysed. The variables analysed were: age, follow-up time, localisation of the meatus of the urethra, surgical technique used, existence of complications, hospital stay time, flowmetry result and final functional and aesthetic outcome.

Results: A total of 223 patients underwent surgery, aged between 18 months and 32 years, and with a follow-up period of between 6 months and 13 years. The localisation of the meatus was glandular 60 cases, balanopreputial sulcus 108, subcoronal 15 and mid-penile in 31 cases. A meatoplasty was performed in 50 cases, including 20 MAGPI, Mathieu in 122 cases, On Lay island flap 20 and Duckett in 11 cases, combining Byars flaps in 29 cases and Double-sided flap in 8 cases. Forty five cases presented incurvation, 35 of which were resolved by Nesbitt's technique by means of complete deglobing or section of the urethral plaque. Immediate post-operative evolution was favourable in 85.65%. The complications included 4 complete flap retractions, 9 fistulae and a further 10 cases which included preputial oedema, haematoma on the dorsal side of the penis, active bleeding of the gland and infection of the surgical wound, among others. A total of 14 re-operations were performed with a good definitive outcome. Outpatient hospital stay time was 1 day in the Meatoplasties and MAGPI, 4 days in the Mathieu technique, and 8 days in the On-lay and Duckett. The result of the flowmetry performed six months after the operation was favourable in 83.85%. The chordée was corrected in all cases. In the long term, functional and aesthetic outcome was satisfactory in 99.1%.

Conclusions: We may establish that the key to the success of our casuistry, in both distal and mid-penile hypospadias, lies in a good indication and meticulous performance of the surgical technique selected.

UP.503

Surgical Tips and Tricks during Urethroplasty for Bulbar Urethral Strictures Focusing on the Accurate Localization of a Stricture: Results from a Tertiary Centre

Kuo T[1,2], Venugopal S[1], Inman R[1], Chapple C[1]

[1]Royal Hallamshire Hospital, Sheffield, UK; [2]Singapore General Hospital, Singapore

Introduction and Objectives: There are several techniques to characterize and localize an anterior urethral stricture, e.g. preoperative retrograde urethrogram, ultrasonography and endoscopy. However these various techniques are associated with some limitations. The final determinant is intra-operative assessment as this yields the most information and defines what surgical procedure is undertaken. We present our intra-operative approach to localizing and operating on a urethral stricture.

Materials and Methods: A retrospective review of urethral strictures operated was carried out. All patients had a bulbar or bulboprostatic urethroplasty. All patients were referred to a tertiary center and operated on by 2 urethral reconstructive surgeons. Intra-operation identification of the stricture was performed by cystoscopy. The location of the stricture is demonstrated on the urethra externally by external trans-illumination of the urethra and comparison with the endoscopic picture. This is combined with accurate placement of a suture through the urethra, at the distal extremity of the stricture, verified precisely by endoscopy. Postoperative follow-up data for each patient was recorded and analyzed.

Results: Thirty-five male patients were operated for bulbar stricture during a two-year time period. Mean follow-up was 13.8 months (range 2-43 months). Mean age was 46.5 years (range 17-70 years). Three patients had undergone previous urethroplasty and 26 patients had previous urethrotomy or dilatation. All patients had preoperative retrograde urethrogram and most (85.7%) had endoscopic assessment. The majority of patients (48.6%) had stricture length >2-7cm and 45.7% of patients required buccal mucosa graft. There were no intraoperative complications. Postoperatively, 2 patients had UTI. All patients were assessed post-operatively by flexible cystoscopy. Only one patient required optical urethrotomy subsequently for recurrence.

Conclusion: Our intraoperative approach and philosophy to anterior urethral stricture assessment provides a clear step wise approach, regardless of which type of urethroplasty is eventually chosen (i.e. anastomotic disconnected or heineke-miculicz) or augmentation (dorsal, ventral, or augmented roof strip). It is useful in all cases by allowing a precise localization of incision of the urethra, whether the stricture is simple or complex.

UP.504

Treatment of Rectourethral Fistula after Radical Prostatectomy with Gracilis Muscle Interposition

Caballero J, Borrat P, Gili J, Navarro A, Muñoz A, Martí L, Ristol J

Hospital Universitari Mútua de Terrassa, Barcelona, Spain

Introduction and Objectives: To describe our experience of treating patients with rectourethral fistula secondary to radical prostatectomy by a transperineal approach with interposition of unilateral gracilis muscle flap.

Materials and Methods: A prospective evaluation of all patients with postoperative rectourethral fistula after radical prostatectomy (open and laparoscopic) treated in our Hospital. We perform the technique of transperineal approach, reparation of urethra and rectum, and interposition of gracilis muscle flap. All procedures were made by the same multidisciplinary team: a senior colorectal surgeon, and a senior urologist.

Results: Between November 2009 and October 2013, seven patients with postoperative rectourethral fistula were treated. Three of them had received previous treatments without success with different procedures and four patients were primarily repaired by this technique. Six patients had a fecal diverting stoma. One of them was referred to our institution after failed multiple previous attempts of repair, the last of which was a rectal resection and a low colorectal anastomosis. After a median follow-up of 36.4 months (range 6-53), the seven fistulas had successfully healed, and they remain asymptomatic without urinary diversion except the patients with previous urinary incontinence in whom this problem persists. Digestive transit is already restored in all patients. No intraoperative or infectious complications were detected.

Conclusion: Perineal simple reparation and gracilis muscle transposition is a safe and effective technique and it must be considered as the first option for treating postoperative rectourethral fistulas after prostate cancer surgery.

UP.505

Rectourinary Fistula Repair Using Gracilis Muscle Flaps: Surgical Outcomes

Eswara J[1], Raup V[2], Brandes S[2]

[1]Brigham and Women's Hospital, Harvard Medical School, Boston, USA; [2]Washington University, St. Louis, USA

Introduction and Objectives: Bladder outlet dysfunction (BOD) is a common complication of pelvic radiation. Patients who receive pre-operative radiation are predisposed to developing BOD due to bladder neck contracture (BNC) or stress urinary incontinence (SUI). Here, we review our experience with gracilis flap fistula repairs for rectourinary fistulae (RUF) in patients who underwent pelvic radiation.

Materials and Methods: We reviewed 20

patients who underwent a gracilis flap repair of a RUF between the years 2003 and 2013. Patients were assessed for post-operative fistula closure and BOD due to SUI or BNC. Possible risk factors associated with repair failures were examined, such as age, hypertension, diabetes, coronary artery disease, smoking, obesity, ASA score intraoperative urinary/fecal diversion, and prior radiation.
Results: The mean age in our series was 62 years (50-73) at time of surgery with median follow-up of 23.6 months (3.6-64.9). Among patients who underwent pelvic radiation prior to fistula repair, 11/13 (85%) developed BOD compared to 2/7 (29%) who were not radiated (p=0.02). Flap failure was noted in 4/13 radiated patients vs. 3/7 non-radiated patients (p=0.65). Of the 7 flap failures, revisions included repeat gracilis flap (2), coloanal pull-through (2), omental flap (1), sliding flap (1), and rectal advancement flap (1). The median time to revision was 6.7 months (3.5-24.9).
Conclusions: Flap failure and bladder outlet dysfunction are more common in patients who underwent pre-operative radiation prior to gracilis flap rectourinary fistula repair. Even in successful fistula repairs, patients may still experience substantial urinary incontinence. Therefore, patients should be carefully counseled about all possible risks of gracilis flap genitourinary fistula repair as well as the option of performing permanent urinary diversion as the primary therapy.

UP.506
Urinary-Cutaneous Fistulae in Patients with Neurogenic Bladder
Raup V[1], Brandes S[1], Eswara J[2]
[1]Washington University, St. Louis, USA; [2]Brigham and Women's Hospital, Harvard Medical School, Boston, USA

Introduction and Objectives: Neurogenic detrusor overactivity can cause significant incontinence, often managed non-surgically with intermittent self-catheterization, condom catheterization, or chronic foley placement. Patients with neurogenic bladder develop urinary-cutaneous fistulae from trauma, chronic decubitus ulcers, infection, or long-term catheterization. Here, we review our experience with neurogenic bladder patients who develop urethrocutaneous or vesicocutaneous fistulae.
Materials and Methods: We reviewed 21 patients with neurogenic bladder who developed urinary-cutaneous fistulae between 1998 and 2013. The clinical endpoints of the study were development of urinary-cutaneous fistula, fistula repair failure, and need for permanent urinary diversion. Possible risk factors associated with repair failures were examined.
Results: There were 21 patients in this series with a mean age of 39.5 years (23-76) at time of surgery and median follow-up of 67 months (1-179). Median ASA score was 3. Etiology of neurogenic bladder included spinal injury (18), transverse myelitis (1), cerebral palsy (1), and congenital abnormalities (1). Causes of urinary-cutaneous fistulae included leakage through decubitus ulcers (7), condom catheter malfunctions (5), infections (3), trauma to pelvis (1), and unknown causes (5). Average size of the urinary cutaneous fistulae was 3 cm. Fourteen patients had their fistulae repaired surgically, with 12 patients eventually requiring either a diversion with a suprapubic (SP) tube (7/12, 58%), repeat repair (2/12, 17%), or repeat repair with eventual diversion with SP tube (3/12, 25%). Fistulae repairs performed included primary repair, advancement flaps, urethroplasties, tunica interposition flaps, and onlay flaps. Seven patients underwent urinary diversion upon presentation, with either ileal conduit (5/7, 71%) or an SP tube (2/7, 29%). In total, 17/21 patients eventually required permanent urinary diversion (81%), 15/17 of which were with a SP tube (88%) and 2/17 with an ileal conduit (12%).
Conclusions: Urinary-cutaneous fistula repairs in patients with neurogenic bladder should be undertaken with caution. Patients who undergo a surgical repair of their fistula are likely to experience a long and complicated series of repeat repairs with eventual need for a permanent urinary diversion.

UP.507
Lower Urinary Tract Injuries Associated with Pelvic Fractures: A Single Center Experience
Pejcic T[1], Dzamic Z[1], Acimovic M[1], Rafailovic D[1], Hadzi-Djokic J[2]
[1]Clinical Center of Serbia, Clinic of Urology, Belgrade, Serbia; [2]Serbian Academy of Sciences and Arts, Belgrade, Serbia

Introduction and Objectives: Urinary bladder and/or urethral injuries occur in 15% of patients with pelvic fractures. The most common causes of pelvic fracture are motor vehicle and motorcycle accidents, motor vehicles striking pedestrians, and falls.
Materials and Methods: The study included the patients treated in the Emergency Center between 2000 and 2009. Of 7445 patients, 894 patients (12%) had the urinary tract injury, while 376 patients (5%) had pelvic fracture. Fifty five patients with pelvic fractures (14.6%) had bladder or urethral injuries: 31 patients had bladder injury, 22 patients had urethral injury, and two patients had associated injuries of the posterior urethra and the bladder neck.
Results: All injuries of the urinary bladder were treated by surgical exploration, cystostomy, suture of the bladder lesions and urethral catheterization. Eighteen patients (82%) with urethral injury underwent primary cystostomy with urethral reconstruction and catheterization, while four patients (18%) underwent only cystofix-cystostomy.
Conclusion: Blunt lower urinary tract injuries are relatively often associated with pelvic fractures. The majority of these patients require primary surgical treatment.

UP.509
Comparative Study between Surgical and Laparoscopic Treatment of Uretero Pelvic Junction Obstruction
Mahmoud M, Faisal M, Faraghal S, Nazim M, El Emam A, Elsotohi I
Dept. of Urology, Al Azhr University Hospitals, Cairo, Egypt

Introduction and Objectives: The aim of this work is to compare open dismembered versus laparoscopic pyeloplasty in treatment of uretero pelvic junction (UPJ) obstruction regarding operative time, blood loss, intra and post operative complications, analgesic requirement and hospital stay.
Materials and Methods: A prospective and retrospective study was done on 27 patients who underwent pyeloplsty (17 open and 10 laparoscopic) from May 2009 to February 2011 at Al-Azhar University Hospitals. All laparoscopic pyeloplasties were performed transperitoneally. Standard open Anderson Hynes pyeloplasty was done for open group. Patients were followed with IVU at three months and DTPA scan at six months. Perioperative parameters including operative time, analgesic use, hospital stay, and complication and success rates were compared.
Results: Mean total operative time with stent placement in LP group was 164min (120-220min) compared to 90min (70-110min) in OP group. The post operative diclofenac requirement was significantly less in LP group than in open group. The postoperative hospital stay in LP was mean 4.8 days (4-12 days) which was not significantly less than the open group mean of 5.05 days (4-7days).
Conclusion: Open pyeloplasty remains the gold standard treatment for UPJ obstruction. Laparoscopic pyeloplasty can be a substitute for skilled surgeons.

UP.510
Emergency Cystectomy for Severe Bleeding Complications of Radiation Therapy
Volkmer B[1], Hautmann R[2], Kahlmeyer A[1], Bartsch C[3], Bartsch Jr. G[3]
[1]Klinikum Kassel, Kassel, Germany; [2]University of Ulm, Ulm, Germany; [3]University of Frankfurt, Frankfurt, Germany

Introduction and Objectives: Irradiation of the true pelvis affects the bladder and causes radiation cystitis, which may result in recurrent and severe bleeding complications. If all less invasive therapies fail, urologists may choose an emergency cystectomy as a final option. Our aim was to evaluate the outcome of these procedures.
Materials and Methods: Among the complete cystectomy series at 2 institutions (Ulm:

10/1985 – 03/2009: n=1614; Kassel: 01/1977-03/2014: n=1386) all cases with emergency cystectomy for radiation cystitis were identified. A complete follow-up until 03/14 or until death was obtained.
Results: A total of 7 cases (0.2%) were identified (2 female, 5 male patients, age 54 – 87 years). They had radiation therapy for bladder cancer (n=1), prostate cancer (n=3), colorectal cancer (n=1) and gynecologic tumors (n=2) 2.5 – 28 years before. Only in the patient with bladder cancer, there was residual tumor in the cystectomy specimen. All patients had a bladder capacity < 100 ml preoperatively. One patient had a recurrent bleeding from a prevesical arterio-ureteral fistula having developed with long-term stenting. In the other cases bleeding was caused by radiation cystitis. Four cases had a bladder rupture during evacuation of clots. In these cases, we performed open surgery immediately. In the other patients, we at least once tried to perform an embolization of the internal iliac arteries without success. Five out of 7 patients had grade 4-5 complications according to the Clavien classification. All patients needed a prolonged ICU treatment due to respiratory failure (median: 31 days). Two patients died from septicemia within 6 weeks postoperatively. Three patients died within 2 years after cystectomy (myocardial infarction, gastric cancer, progressive bladder cancer). Three patients are alive at 2, 4, and 14 months postoperatively. The overall survival rate at 12, and 24 months was: 56.3% and 0%.
Conclusions: Emergency cystectomy means a high morbidity and procedure-related mortality to a population with a per se low performance status and short life expectancy. It is to be considered a high-risk procedure that should remain the final option, if all other less invasive therapies fail.

UP.511
Reversal Phalloplasty in Regretful Male to Female Transsexuals after Sex Reassignment Surgery
Bizic M[1], Kojovic V[2], Stojanovic B[1], Majstorovic M[1], Vujovic S[2], Duisin D[2], Milosevic A[2], **Djordjevic M**[2]
[1]University Children's Hospital, Belgrade, Serbia; [2]School of Medicine, University of Belgrade, Belgrade, Serbia

Introduction and Objectives: Sex reassignment surgery (SRS) has proven to be an effective intervention for the patient with gender dysphoria. In general, it's reported that transsexuals who have undergone gender reassignment surgery are happy to have done so. However, there are some who regret their decision and need reversal surgery. This review is based on our experience with five patients who came to regret their decision after male to female surgery.
Materials and Methods: Between November 2010 and September 2013, five male patients aged 31, 35, 37, 49 and 53 years with a previous male to female sex reassignment surgery, underwent reversal phalloplasty. Preoperatively, they were additionally examined by three independent psychiatrists. Surgery included three steps: removal of female genitalia, total phalloplasty with microvascular transfer of the musculocutaneous latissimus dorsi flap and urethral lengthening with penile prostheses implantation.
Results: Follow-up period was from 6 to 39 months (mean 17 months). Good postoperative results were achieved in all patients. In two patients, all surgical steps have been completed; one is currently waiting for penile implants, while two patients decided against penile prosthesis. Complications were related to urethral lengthening, two fistulas and one stricture, respectively. All complications were repaired by minor revision. According to patients' self-reports, all patients were pleased with the esthetic appearance of their genitalia and with their significantly improved psychological status.
Conclusions: Most transsexuals are contented with their decision following gender reassignment surgery, with only a few regretting it. Reversal surgery is indicated only after a new cycle of preoperative psychological and endocrinological treatment. Further insight into the characteristics of persons with postoperative regret would facilitate future selection of applicants eligible for SRS. Another recommendation is to actively search for individuals who have come to regret their decision and to try to systematically describe their life and treatment histories.

UP.512
Tadalafil as a Regular Therapy Regimen after Surgical Treatment of Peyronie's Disease
Kojovic V, Milosevic A, Durutovic O, Bojanic N, Tulic C**, Djordjevic M**
School of Medicine, University of Belgrade, Belgrade, Serbia

Introduction and Objectives: Incision or excision of the plaque followed by grafting of the defect presents broadly accepted procedure for surgical treatment of Peyronie's disease in patients with preserved erectile function. Herein, we present our experience with regular usage of tadalafil in order to prevent postoperative graft retraction in these patients.
Materials and Methods: Between January 2004 and October 2013, 97 patients (aged 42 to 63 years) with Peyronie's disease underwent surgical treatment. All patients preoperatively reported preserved erectile function. After lifting of neurovascular bundle, tunica albuginea was incised and opened at the plaque region to correct the deformities. Plaque was incised or completely or partially excised and defect was grafted using human pericardium in 32 patients, porcine dermal graft in 37 patients and equine pericardium in 28 patients. Postoperatively all patients were advised to use tadalafil, 5 mg every day, for one month, in order to prevent graft shrinkage and recurvation of the penis. After that period vacuum or stretching device was recommended to all patients in following six months.
Results: The median follow-up was 57 months (ranged 6 to 122). During this period 89 patients (92%) had straightened penis. Eight patients reported recurvation of the penis and additional surgical procedure was necessary to correct the deformity. Ten patients reported transitory numbness of the glans, and eight patients complained to diminish sexual desire. Ninety patients (93%) reported preserved erectile function with ability for sexual intercourse. The most commonly reported side effects of tadalafil therapy were headache (9%), nasal congestion (7%), muscle-ache (7%) and dyspepsia (5%).
Conclusion: Tadalafil increased penile blood flow and induced periodical postoperative erections in patient who underwent grafting procedure as a treatment of Peyronie's disease. This way retraction of the graft and recurvation was less possible to occur. Regular postoperative use of tadalafil could be important step for the successful outcome in these patients.

UP.513
Converting an Orthotopic Urinary Diversion to an Ileal Conduit: Technical Considerations and Challenges
Swain S, Ali A, Katkoori D, Parekh D, Manoharan M
Miller School of Medicine, Miami, USA

Introduction and Objectives: Many of the Patients with muscle invasive bladder cancer are treated with cystectomy and orthotopic urinary diversion. However, an orthotopic urinary diversion may be converted into an ileal conduit in clinical scenarios such as urethral recurrence of bladder cancer or fistula disease involving the neobladder. The surgical challenges encountered during such a procedure include difficulty in identifying the initial uretero-neobladder anastomosis, the need to de-tabularise the neobladder, inadequate length of the ureters and the ileal chimney to bring it out as a stoma. We describe our surgical technique in converting an orthotopic urinary diversion to an ileal conduit.
Materials and Methods: A retrospective review of all patients who had undergone radical cystectomy and orthotopic urinary diversion between 2003 and 2010 was performed. Patients with initial orthotopic urinary diversion who required subsequent ileal conduit conversion were included in the study. Their history, physical examination and pathology were reviewed. The indications for conversion, the operative time as well as the post-operative complications were recorded. Here we discuss our modified Hautmann orthotopic bladder technique and compare it to other established

orthotopic urinary diversions in relation to challenges faced during conversion to ileal conduit. In our modification: we take 10-15cm of proximal ileum as the afferent limb, which we direct towards the right side as the non-tabularized ileal chimney and anastomose both the ureters into it. During conversion to ileal conduit it was simply be disconnected from the neobladder pouch and brought out through the abdominal wall without requiring any additional bowel resection, ileal ureteric anastomosis or ureteric mobilization. In case of conversion of pure hautmann neobladder to ileal conduit, the ureteral anastomosis has to be disconnected and anastomosed, also in case of studder bladder there will be twisting of the ileal afferent limb when it would require to be brought out through the abdominal wall. Also we regularly place omentum over our neobladder thereby reduce incidence of fistula formation as well as reducing possible adhesion between the neobladder and anterior abdominal wall, making the reoperation during ileal conduit conversion a relatively simple affair.

Results: A total of 5 patients had conversion of an orthotopic urinary diversion to an ileal conduit. Of the 5 patients, 3 were male and 2 were female. All had muscle invasive urothelial carcinoma. Reasons for conversion include urethral recurrence (2 patients), fistula disease (2 patients) and incontinence (1 patient). Also there was adequate length of the ileal afferent limb to reach the abdominal wall as it elongates over a period of time. The average operative time was 110 minutes. There was no major post-operative complication.

Conclusion: Conversion from our modified orthotopic urinary diversion to an ileal conduit is simple and can be done with minimal surgical morbidity to the patient. The ureteric-ileal anastomosis is not explored or mobilised from their position in the right iliac fossa.

UP.514

A Novel Urethral Catheter Design to Guide Safer Placement and Both Prevent and Minimize Risk of Urethral Balloon-Inflation Injury

Garcia M[1], Wu A[1], Blashko S[1], Aaronson D[2]
[1]University of California San Francisco, San Francisco, USA; [2]Kaiser Medical Foundation Northern California, Oakland, USA

Introduction and Objectives: Iatrogenic urethral injury due to urethral balloon-inflation occurs regularly but with unknown incidence. Manufacturers have, to date, not incorporated any safety-oriented modifications into their catheter design. We sought to: 1) Explore the overall number of non-infectious catheter related complications in a nationally representative dataset; 2) Create novel catheter design modifications designed to guide safer catheter placement and mitigate urethral trauma caused by urethral balloon-inflation; 3). Manufacture working prototypes of our catheter; 4.) Test our catheter-prototypes on human cadavers and adult pigs.

Materials and Methods: A cross-sectional analysis of the 2006 to 2008 National Inpatient Sample was performed (a 20% stratified sampling of non-federal U.S hospitals), using ICD-9-CM diagnostic codes to identify the national annual numbers of catheter related complications in hospitalized patients. Standard (BARD™) 16-Fr. catheters were modified by thinning out a circumferential area of the balloon-port shaft, and painting this area bright-red, so that when the retention balloon is inflated within the urethra, this thinned area ("Safety Balloon") expands, and serves to: 1. Minimize filling *and* pressure upon the urethra, and 2. Visually alert the operator. We measured pressure within the balloon-port during filling within the bladder and urethra using fresh human-cadavers and live-adult pigs (N=8) under anesthesia, followed by histologic analysis. We determined the lowest filling-volume **necessary to activate the "safety balloon" only** when the retention balloon was filled within the urethra.

Results: Over this time period, 21,566 -111,353 patients experienced a non-infectious catheter related complication. Mean patient age was 68.4 (SD=18.8); 46.2% required a procedure such as cystoscopy or suprapubic-catheter placement. Balloon-port pressure after inflation within the bladder was similar among standard catheters and our catheter prototype. Immediately upon inflation within the prostatic and bulbar urethra of both cadavers and pigs, the "safety balloon" visibly. Mean balloon-port pressure was *60% lower* in our catheter prototype. Porcine model histologic analysis showed minimal to no urethral injury using our catheter as compared to a standard BARD catheter.

Conclusions: Non-infectious catheter-related complications occur regularly and are likely under-reported. The simple, intuitive, inexpensive design modifications we describe appear to reduce the damaging pressure exerted upon the urethra during urethral balloon-inflation.

UP.515

Histopathological Characteristics of Buccal Mucosa Grafts after Urethroplasty

Engel O, Soave A, Steurer S, Dahlem R, Rink M, Fisch M
University Medical Center Hamburg-Eppendorf, Hamburg, Germany

Introduction and Objectives: Histopathological changes of buccal mucosa grafts after urethroplasty and years of urine-exposure are unclear. Thus, the aim of this study was to histopathologically investigate the natural history of transplanted buccal mucosa grafts.

Materials and Methods: Between November 2012 and October 2013, we prospectively enrolled 22 patients with a diagnosis of recurrent urethral stricture following buccal mucosa urethroplasty. Intraoperatively we retrieved a sample of the former buccal mucosa graft from the urethra, a sample of healthy urethra, a sample of freshly harvested buccal mucosa from the inner cheek and a sample of fibrotic tissue from the area of the current stricture. Uropathologists performed meticulous histopathological examination of all tissue samples using Hematoxylin and Periodic-acid Schiff reaction following a standard protocol.

Results: The mean interval from the initial to the current buccal mucosa urethroplasty was 22.2 months (range: 4.1 – 76.0). The mean stricture length at the time of the repeat urethroplasty was 52.7 mm (range: 30 – 70). The initial urethral buccal mucosa graft completely preserved its histological characteristics of oral mucosa in all patients. These characteristics were locally confined, typically thick sheets of non-keratinized squamous epithelium with a stratum spinosum compared to the rather thin layer of typical urethral squamous metaplasia. The initial buccal mucosa graft was neither partially nor entirely overgrown with urethral tissue.

Conclusion: Buccal mucosa grafts retain their histopathological characteristics and are not overgrown with urethral tissue after urethral engraftment and exposure to urine. These findings improve our understanding why buccal mucosa grafts show superior outcomes in urethral reconstruction compared to artificial materials.

UP.516

The Effect of the Bladder Take Down on Vesicourethral Anastomosis and Urinary Incontinence in Patients with Localized Prostate Cancer

Park K, **Kim S**, Kim Y, Huh J
Jeju National University, Jeju, South Korea

Introduction and Objectives: Postoperative urinary incontinence after robot assisted radical prostatectomy (RALP) is one of the most bothersome complications that affects to patient's daily life. Time to recovery from postoperative urinary incontinence is important in patients' satisfaction. We evaluate the effect of degree of bladder takedown on urethrovesical anastomosis and continence.

Methods and Materials: We prospectively analyzed 60 patients who underwent robot assisted laparoscopic prostatectomy for prostate cancer at our institute from March 2013 to August 2014. Patients were randomly assigned into two groups, Group I, 30 patients underwent deperitonization of lateral of bladder above the level of vas until exposing the both vas, the Group II was done below it and cutting the vas. We compared the anastomosis time and postop continence. Defining continence as patients being pad free, continence at 1, 3, and 6 month were checked.

Results: There were no significant differences

in age, body mass index, membranous urethral length, prostate volume, results of neurovascular bundle saving and between urethrovesical anastomosis leaking between both groups. Anastomosis time were mean 25.5 min (16 – 35min) in Group I and 23.4 min (17.5-33min) in Group II (P = 0.654). Cumulative number of patients, who recovered from incontinence at postoperative 1, 3, and 6 months in Group I, were 9 (30%), 14 (46.6%) and 22 (73.3%), respectively. In Group II, cumulative number of patients were 10 (33.3%), 16 (53.3%) and 21 (70%), respectively. There was no difference in time to recovery of urinary incontinence between two groups.

Conclusion: Wider deperiotonization of bladder lateral attachment would not meaningful affect the result of urethra-vesical anastomosis and continence in RLRP.

UP.517

Fate of Acute Scrotum in the Emergency Room

Cho J[1], Lee H[1], Ham W[2], Kim S[3], Jeong T[3], Moon H[1], Lee T[1], **Park S**[1]

[1]Hanyang University College of Medicine, Seoul, South Korea; [2]Yonsei University College of Medicine, Seoul, South Korea; [3]Myongji Hospital, Goyang, South Korea

Introduction and Objectives: Acute scrotum is a common acute condition in male requiring prompt accurate management. The objective of this article was to evaluate symptoms, physical examination, and radiologic evaluation in emergency room(ER) with acute scrotum.

Materials and Methods: Retrospective review of emergency department records for male with acute scrotum from 2008 to 2012 was performed. Clinical symptoms, urine analysis, blood test, radiologic and surgical findings, and surgical results were analyzed.

Results: Retrospective review was performed on 84 patients with acute scrotum admitted to ER from 2008 to 2012. The mean age of patients was 20.5 years. The common signs were pain (64.29%), pain and swelling (33.33%), and pain, swelling and redness (2.38%). Twenty seven has leukocytosis (32.1%), each 8 had fever (9.5%) and pyuria (9.5%). Sixty patients were treated by conservative therapy, and 24 by surgery. Fourteen of 24 with surgery had torsion of testis on scrotal sonogram, 4 had normal. Orchiopexy (87.5%) and orchiectomy (12.5%) were performed as surgical treatment. Testicular torsion (n=15), torsion-detorsion (n=3), epididymitis (n=3), and appendix testis torsion (n=1) were taken orchiopexy and one had hydrocelectomy with orchiopexy due to hydrocele. Orchiectomy was performed who had testis infarction (n=2), and testicular rupture (n=1). Unanimous findings between scrotal sonography and surgical findings were 11 cases but 13 had different impression which had normal findings on scrotal sonography but surgical finding was testicular torsion (Table 1).

UP.517, Table 1. Comparison of Scrotum Ultrasonography Findings and Scrotum Exploration

Scrotum ultrasonography	Scrotum	n (%)
Epididymitis	Hydrocele	1 (4.17)
Testis torsion	Testis torsion	10 (41.67)
	Torsion-Detorsion	3 (12.5)
	Testis appendix	1 (4.17)
Scrotum hematoma	Testis rupture	1 (4.48)
Varicocele	Epididymitis	1 (5.97)
Unremarkable finding	Testis torsion	3 (12.5)
	Epididymitis	1 (4.17)
Testis appendix torsion	Testis torsion	1 (4.17)
Testis infarction	Testis infarction	1 (4.17)
Torsion-Detorsion	Testis torsion	1 (4.17)
Total		24

Conclusion: The difference between clinical diagnosis and scrotal sonography were over fifty percent in ER. Although the accuracy of imaging is quite good, ultrasound imaging in the case of acute scrotum have a degree of error and inaccuracy. So patients with acute scrotum need to be performed careful physical examination. Suspicion of testicular torsion would be considered in case of acute scrotum leading to prompt surgical exploration.

UP.518

Durability of Stomal Revisions of Catheterizable Channels

Pagliara T[1], Kalyanaraman B[1], Hoversten P[2], Fleck J[3], **Elliott S**[1]

[1]Dept. of Urology, University of Minnesota, Minneapolis, USA; [2]University of Minnesota Medical School, Minneapolis, USA; [3]University of Minnesota, Minneapolis, USA

Introduction and Objectives: Up to 55% of catheterizable channels will develop stenosis. This is often managed with dilation but recurrent stenosis is common. Revision surgery for stenosis is not well described. We sought to describe the strategies and success of surgical revision or replacement for catheterizable channel stenosis.

Materials and Methods: We retrospectively reviewed the charts of all patients who underwent catheterizable channel revision or replacement from 2007 to 2013 for stomal stenosis or difficult catheterization at the University of Minnesota. The primary outcome was continued ability to catheterize the channel post-operatively without surgical dilation or revision. Secondary outcomes included channel continence and post-operative complications.

Results: A total of 21 patients were identified, ranging in age from 17 to 79 with mean follow-up of 19 months (0.5-80). Seventy six percent (n=15) were able to catheterize post-operatively without further intervention; these were further categorized by Y-V plasty above/below the fascia as or by replacement of all/part of the channel. Sixty percent (n=4) treated by Y-V plasty and 81% treated by replacement of part/all of the stoma did not require additional intervention (p=0.28). Of the 6 with recurrence, 1 was managed with an indwelling catheter, 2 underwent endoscopic dilation and 3 underwent another channel revision or replacement. Nineteen percent (n=4) reported more than minimal (bothersome and new) incontinence. Post op complication rates were Clavien Grade I in 43%, Grade III in 5% and Grade V in 5%.

Conclusion: Rates of surgical intervention after stomal revision surgery are similar to those reported after initial channel creation. There was no statistical difference in success between those treated with Y-V plasty vs. more complicated stomal revision. Incontinence is not unexpected after revision but major complications were rare.

UP.519

What Are the Long-Term Effects of Cystoplasty?

Frost A, Fadel M, Cole A, Bugeja S, Andrich D, Mundy A

University College London Hospital, London, UK

Introduction and Objectives: This study evaluates patients having had augmentation cystoplasty many years ago, with particular reference to complications and preservation of renal function in the long-term.

Materials and Methods: A total of 162 of 276 patients undergoing augmentation cystoplasty by a single surgeon, and with a minimum of 20 years (mean 24 years) follow-up, were analysed retrospectively. Ninety three were male and 69

female. Mean age at the time of initial surgery was 25 years (range 4.3–73 years); 127 (78%) also had an artificial urinary sphincter (AUS). Outcomes were assessed at 1, 5, 10, 15, 20 and 30 years.
Results: The most common complication in the long-term was recurrent urinary tract infection (UTI), occurring in 19% of patients. Bladder stones developed in 10% of patients. Complications requiring surgery occurred more commonly after 10 years. Redo-cystoplasty was required in 7% of patients after a mean of 11 years, and urinary diversion/Mitrofanoff was necessary in 9% at a mean of 12 years. Malignant transformation was detected in 2 patients (mean 28.5 years post-op). Overall the renal function decreased at the expected physiological rate (0.75ml/min/year) with a mean decrease in eGFR of 23.5ml/min over 30 years. However, eGFR decline was more marked in those having had surgery aged 20-39 years compared to those aged 19 or under (mean 30.6 vs. 22.9ml/min). Those with acquired neuropathic bladder disorders also had a more rapid deterioration compared to patients with spina bifida (mean 28.6 vs. 7.2ml/min). There was no significant difference between the lifespan of the AUS in patients performing intermittent self-catheterisation compared to those voiding spontaneously (4.6 vs. 5.1 years). The urethral erosion rate was also similar between the two (47 vs. 53%).
Conclusion: In the long-term the commonest problems with cystoplasties are recurrent UTI's and bladder stones. Renal function declines more rapidly in patients with acquired neuropathic disorders than would be expected, though these patients also tend to be older at the time of surgery. These patients in particular should be counselled about these potential long-term problems, and the need for routine surveillance of their renal function.

UP.520
Surgical Management of Massive Localized Lymphedema of the Scrotum
Van Lierop D**, Gelman J**
University of California, Irvine, USA

Introduction and Objectives: Lymphedema of the male external genitalia is a rare disease. With the growing prevalence of morbid obesity, an entity known as massive localized lymphedema (MLL) was recognized in 1998. Previous reports have described techniques for the excision of scrotal lymphedema of various etiologies, but there have been no case series to date that focus on excision of MLL of the scrotum. Our series highlights particularly challenging cases, as their size exceeds that of any in the literature.
Materials and Methods: A total of 5 patients underwent complex reconstruction of MLL of the scrotum between 2008 and present. An incision was made in the midline of the scrotum, and this was continued posteriorly until the penis was located. The dissection was then carried laterally to isolate the spermatic cords and testicles. Posterior and lateral skin flaps were used for primary closure.
Results: Mean (range) patient age was 48 years (34-58). All patients were morbidly obese with mean pre-operative BMI of 57.8 kg/m^2 (43.7-68.2). Mean specimen weight was 22.2 kg (0.4-60). Mean follow-up time was 31 months (5-64). Three patients had recurrent lymphedema, and two underwent a second procedure to remove additional tissue. All patients had improvement in quality of life.
Conclusions: MLL is a rare condition that most commonly affects the extremities, but can also affect the scrotum. MLL is associated with morbid obesity, and one theory of its causation is that a massive abdominal pannus obstructs the lymphatic flow. Patients are often advised on weight loss to alleviate the obstruction. Although this may help prevent further progression, it will not help with the lesion itself, and surgical resection is the treatment of choice. There have been several case reports of surgical resection of MLL in the literature, but our series is unique due to the massive size. Several of our patients had recurrent lymphedema, and two required skin grafting on repeat resection; this was consistent with previous reports. Our series demonstrates that surgical resection of MLL of scrotum is not only feasible, but can be met with excellent outcomes, even in cases of extraordinary proportions.

UP.521
Perioperative and Long-Term Postoperative Success Rates of Anderson-Hynes Robot-Assisted Pyeloplasty (RAP): A Single Center Experience
Traumann M[1], Kluth L[1], Schmid M[1], Meyer C[1], Schwaiger B[1], Rosenbaum C[1], Schriefer P[1], Fisch M[1], Ahyai S[1], Seiler D[2], Dahlem R[1], Haese A[3], Chun F[1]
[1]University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Kantonspital Aarau, Aarau, Switzerland; [3]Martini-Clinic Hamburg, Hamburg, Germany

Introduction and Objectives: To investigate perioperative and long-term postoperative success rates of Anderson-Hynes robot-assisted pyeloplasty (RAP) at a single center.
Materials and Methods: We retrospectively reviewed our RAP experience of 61 patients performed by two surgeons between 2004 and 2013 regarding operating time, length of hospital stay, perioperative complication, and success. Overall success was measured on necessary redo pyeloplasty. We also identified patients with temporary stent placement due to symptomatic hydronephrosis or with further obstruction in diuretic renography.
Results: Median age, operating time, and follow-up was 33 years, 195 minutes and 64 months. No conversion to open procedure was necessary. The success rate was 98% (n=60) with one patient undergoing open redo pyeloplasty due to a recurrent stenosis. Temporary stent placement was reported in 3 patients due to pyelonephritis and dilatation.
Conclusion: Satisfying long-term success rates including low complication rates of RAP can be reported in this study. RAP presents a safe and standardised procedure for symptomatic ureteropelvic junction obstruction.

UP.522
Inpatient Complications after Urethroplasty for Urethral Stricture from a Nationally Representative Sample, 2000-2010
Breyer B, Blaschko S, Zaid U, Grimes B, McCulloch C, McAninch J
UCSF, San Francisco, USA

Introduction and Objectives: Urethroplasty is considered a safe surgical procedure. The literature regarding perioperative urethroplasty complications is limited with most coming from single institution studies focused on long-term surgical outcomes. Our objective was to determine the perioperative morbidity and mortality of urethroplasty using a large national database.
Materials and Methods: The National Inpatient Sample from years 2000-2010 was queried for patients with urethroplasty-associated CPT codes. CPT and ICD-9 codes were reviewed to ensure the validity of the assembled cohort. We analyzed patient demographic, comorbidity and hospital characteristics. We used a previously validated comorbidity index to determine the relationship between comorbid disease and the presence of a complication. We used survey commands in SAS to accommodate the complex sample survey and survey weights. All values below are national estimates.
Results: During the study period, 13700 men underwent urethroplasty. Among this cohort, hypertension (25.2%) was the most common comorbid disease, followed by diabetes (9.4%), chronic pulmonary disease (6.9%), obesity (6.7%), depression (3.1%), and renal failure (2.2%). Complications during the urethroplasty hospitalization only occurred in 6.6% of men with adverse outcomes related to the surgical site or wound being the most common (5.2%), followed by cardiovascular (0.7%), respiratory (0.6%), gastrointestinal (0.4%), neurologic (0.3%), and musculoskeletal complications (0.1%). Nine people died during their urethroplasty hospitalization (0.07%). At discharge, 93% of men went home, 4.6% went with addition home care and 2.1% required transfer to another facility for on-going care. Older patients, African-Americans and those with increased comorbid disease were more likely to have a complication during

UP.522, Table 1.

Characteristic	Category	No. of patients	% of patients	% of patients with a complication	P*
Age	18-45	6757	49.3	3.9	<.0001
	45-65	5083	37.1	8.3	
	65+	1860	13.6	11.6	
Race	White	7411	70.3	5.8	0.0134
	Black	1546	14.6	9.5	
	Other	1590	15.1	8.4	
Comorbidity index	0	8096	59.1	4.8	<.0001
	1	3378	24.7	8.6	
	2	1640	12.0	8.1	
	3 or more	586	4.3	15.1	
Hospital size	Small	591	4.4	9.4	0.2857
	Medium	1816	13.4	6.8	
	Large	11161	82.3	6.5	
Hospital urethroplasty volume/year	1:1	3120	22.8	7.8	0.1716
	2-9	4546	33.2	5.5	
	10+	6034	44.0	6.7	
*Chi-square					

the hospitalization. Hospital size and hospital urethroplasty volume were not associated with having a complication or not.
Conclusions: Urethroplasty patients have low peri-operative morbidity and mortality. Patients who are older, African-American or have more comorbid disease are at greater risk for complications. This data can be used by clinicians to counsel their patients regarding peri-operative risk of urethroplasty.

UP.523
A TURNS Study: Intralesional Injection of Mitomycin C at the Time of Transurethral Incision of Bladder Neck Contracture May Offer Limited Benefit
Redshaw J[1], Craig J[1], Aberger M[2], Alsikafi N[3], McClung C[4], Smith T[5], **Erickson B**[6], Broghammer J[2], Voelzke B[7], Brant W[1], Myers J[1]
[1]University of Utah, Salt Lake City, USA; [2]University of Kansas, Kansas City, USA; [3]Loyola University Chicago, Maywood, USA; [4]The Ohio State University, Columbus, USA; [5]Baylor, Houston, USA; [6]University of Iowa, Iowa City, USA; [7]University of Washington, Seattle, USA

Introduction and Objectives: Transurethral incision of the bladder neck (TUIBN) is usually successful for treatment of bladder neck contracture (BNCX) with success rates of greater than 80% reported. In some patients, however, BNCX recurs rapidly and is difficult to resolve. Injection of Mitomycin C (MMC) at the time of TUIBN has been suggested to increase efficacy. Our aim was to evaluate the efficacy of MMC injection for BNCX.
Materials and Methods: Data on all consecutive patients undergoing TUIBN with MMC from 2010-2014 were retrospectively reviewed from participating centers in the Trauma and Urologic Reconstructive Network of Surgeons (TURNS). All patients with at least 3 months of cystoscopic follow-up or recurrence of BNCX prior to 3 months were eligible for inclusion.
Results: A total of 66 patients underwent TUIBN with MMC and 55 meeting eligibility criteria were included. Mean age was 64 years (SD 7.6). Forty two (76%) had failed at least one previous TUIBN without MMC and 26 (47%) had failed ≥2. Techniques for TUIBN included, cold knife incision (n=30), Collins knife incision with electrocautery (n=16), and transurethral resection of the scarred tissue (n=9). A total of 58% (32/55) of patients had resolution of their BNCX after one incision with MMC at a median follow-up of 9.2 months (IQR 11.7). Recurrence occurred in 23 patients at a median of 3.7 months (IQR 4.2) – 15 underwent a repeat TUIBN with MMC and 60% (9/15) were free from another recurrence at a median 8.6 months (IQR 8.8) for an overall success rate of 74.5% (41/55). There was no association with dose of MMC injected (p=0.63), number of prior TUIBN (p=0.27), previous radiotherapy (p=0.76) and treatment failure. Three (5%) patients experienced serious adverse events including: osteitis pubis requiring cystectomy, extensive necrosis of bladder floor, and prolonged bladder pain.
Conclusion: The efficacy of intralesional injection of MMC at the time of TUIBN is similar to success rates reported for deep lateral incision alone and use of MMC was associated with a 5% rate of serious adverse events. Prospective controlled studies are needed to determine the efficacy of MMC injection at the time of TUIBN prior to its widespread adoption.

UP.524
Iatrogenic Injury to the Ureter in Gynecology-Obstetrics
Khouni H[1], Dridi M[2], Ghorbel J[2], Maaroufi J[2], Khiari R[2], Ghozzi S[2], Ben Rais N[2]
[1]Internal Forces Security Hospital, La Marsa, Tunisia; [2]Military Hospital, Tunis, Tunisia

Introduction and Objectives: Iatrogenic injury to the ureter often complicates gynecological obstetric interventions that can engage the renal functional prognosis and can even be life-threatening to the patient.
Materials and Methods: This is a retrospective descriptive study on 58 patients treated for urethral injuries complicating obstetric or gynecological surgery.
Results: Surgery responsible for urethral injury was most often a hysterectomy. Four urethral lesions were diagnosed intraoperatively. Diagnosis was made after more than a month in 45% of cases. Involuntary urine leakage and low back pain were the most frequent symptoms. CT urography is the gold standard in diagnosis. Endoscopic treatment was attempted in 11 patients with good results in 4 cases. Surgical treatment was required in 47 patients. Ureterovesical reimplantation according to the Politano-Leadbetter or Lich Gregoir techniques are increasingly performed with a success rate of respectively 79% and 84%.
Conclusion: Lesions of the ureter caused by gynecological and obstetric surgery are rare. Early diagnosis, the better intraoperative, ensures a good functional outcome. Variety of remedial and endourological techniques often allow kidney preservation, knowing that the best treatment is prevention.

UP.525
Robot-Assisted Laparoscoic Vesicovaginal Fistula Repair in the Porcine Model
Kim H[1], Kim J[1], **Chang Y**[1], Kim H[1], Kim H[2], Rha K[3], Kim J[3]
[1]Dept. of Urology, Konyang University College of Medicine, Daejeon, South Korea; [2]Dept. of Urology, Dankook University College of Medicine, Cheonan, South Korea; [3]Dept. of Urology and Urological Science Institute, South Korea

Introduction and Objectives: Vesicovaginal fistula (VVF) is a debilitating condition for women in personal and social conditions.

Classical VVF repairs are the transvaginal and transabdominal approaches. Recently, minimal invasive extraperitoneal transvesicoscopic vesicovaginal fistula repair has been reported. But, extraperitoneal transvesicoscopic vesicovaginal fistula repair has been limited because of the narrow working space, longer operation time and technical skills. The use of robot-assisted laparoscopic (RAL) procedures may overcome this limitation and allow more short operation time. The purpose of the study is to define the techniques and the possibility of robot-assisted laparoscopic repair of VVF in an animal model.
Materials and Methods: Two Yorkshire swine (approximately 30 kg) underwent RAL VVF repair. Under general anesthesia, the animals were positioned supine for trocar placement. After the abdomen was insufflated with CO2 to 10 mm Hg of pressure, a 12-mm trocar was then introduced through the radially expanding sheath and into the abdomen to serve as the camera port. Urethral Foley catheter was inserted into the bladder and urine was drained and gas was infused. Under direct visualization, another 12-mm trocar was then introduced into the bladder. Two 8-mm trocars were placed into the lateral side of bladder under transvesicoscopic view. Artificial vesicovaginal fistula was made in the supratrigonal area. Gas leak was checked through the vagina. VVF repair with performed such as open VVF repair methods in layer by layer.
Results: Mean operation time was 108 minutes. One animal VVF repair was not established. Persistent gas leak through the bladder into the peritoneum prevent pneumovesicum. Because of porcine bladder was weakly attached retroperitoneal area. The equipment disturbance was not occurred in one case operation. And short operation time, easy tissue manipulation and suturing technique was possible.
Conclusions: The results of this study suggest that extraperitoneal RAL procedures for repair VVF may be a minimal invasive, less morbid and effective modality. Shorter operation time and the easy suturing technique was remarkable merit of extraperitoneal RAL procedures. Impossibilities of the peritoneal flap placement must be overcome in the future.

UP.526
Transplanting Pediatric Deceased-Donor Kidneys into Adult Recipients: An Iranian Experience
Mahdavi-Zafarghandi R[1], Shakiba B[1], Heidari K[2], Kalani-Moghaddam F[3]
[1]Dept. of Urology, Imam Reza Hospital, Mashhad University of Medical Sciences, Mashhad, Iran; [2]Epidemiology School of Public Health, Tehran University of Medical Sciences, Tehran, Iran; [3]Dept. of Pediatrics, Imam Reza Hospital, Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: This study sought to evaluate graft outcome of kidneys from deceased-donor pediatric donors in adult recipients, and compare it with outcomes of kidney transplants from adult donors.
Materials and Methods: This historical cohort study involved 2 groups. Group1 included 23 first kidney adult recipients who received their first renal transplant from pediatric deceased-donor donors. Group 2 consisted of 33 first renal transplant adult recipients with kidneys coming from adult deceased-donors. The Kaplan-Meier method was used to generate graft survival and patient survival curves. The log-rank test was done to compare differences between survival outcomes.
Results: Graft survival rates at 1 and 5 years were 96% and 85% in Group 1, and 91% and 85% in Group 2. No significant difference existed in graft survival rates between the groups. Patient survival rates at 1 and 5 years in Group 1 were 94% and 94% compared with 91% and 91% for Group 2. No significant difference existed in graft survival rates between the groups.
Conclusions: This study demonstrates that with our experience, improvement in surgical technique and immunosuppressive therapy, pediatric deceased-donor kidneys may be considered as an alternate option for adult recipients. Renal transplants from pediatric donors into adult recipients are associated with good graft and patient survival outcomes.

UP.527
The Long-Term Outcomes of the Change of Renal Functions in Living Kidney Donors: 33-Years' Experience in a Single Center
Kim B, Jung W, Ha J**, Park C**, Kim C
Keimyung University, Daegu, South Korea

Introduction and Objectives: Living kidney donation is the general source of kidney graft in Korea. This study investigated postoperative renal function among kidney donors after nephrectomy.
Materials and Methods: Between 1981 and 2013, 752 cases of living donor nephrectomy in our hospital were practiced. Post operative renal functions were recorded in 442 (58.9%) cases. Their estimating glomerular filtration rate (eGFR) of post operative 1 day, 1 month, 1 year, 10 years and 20 years were calculated by MDRD-GFR method.
Results: The mean age of donators was 39.9 ± 11.6 years old. Mean follow-up duration was 44.9 ± 68.1 months (0-393). The number of men was 222 (50.2%) and the number of related-donors was 309 (69.9%). A Laparoscopic operation was performed in 61 cases (13.8%). The mean eGFR of preoperative, postoperative 1 day, 1 month, 1 year, 10 years and 20 years were 92.57, 67.39, 61.73, 66.47, 67.34, and 71.30 mL/min/1.73m^2, respectively. The eGFR of postoperative 1st month was the lowest level. But eGFR improved subsequently (P<0.001). A total of 51.9% of donors had stage 3 chronic kidney disease (CKD) at postoperative 1 month. But the rate of stage 3 CKD was gradually decreased in 1 year, 10 year and 20 year (33.7, 30.6 and 30.4%, respectively) (P<0.001). Two donors (0.45%) developed stage 5 CKD at postoperative 8 years and 16 years. In multivariate analysis, young age at donation (p=0.003) and laparoscopic operation (p=0.001) were associated with the low risk of stage 3 CKD, at postoperative 1 month. But, in postoperative 1 year, 10 years and 20 years, only the age of donors was a factor associated with stage 3 CKD.
Conclusion: After live donor kidney transplantation, the eGFR of the first month was the lowest but it subsequently improved during the 20 years. Age at donation was a strong determinant of post operative renal function.

UP.528
Renal Transplantation in HTLV-1 Recipients: A Single Centre Study
Mahdavi Zafarghandi R, Naghibi M, Nazemian F, Tavakkoli M, Ghoreifi A
Dept. of Urology and Renal Transplant, Imam Reza Hospital, Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: Renal transplant recipients are susceptible to viral infections because of their immunocompromised background. HTLV-1 is a retrovirus that leads to adult T-cell leukemia/lymphoma or myelopathies. Great Khorasan in northeast Iran is reported as being an endemic region for HTLV-1, with a prevalence of 1.97. So according the high prevalence of this infection in our region and few reports of such cases, we reviewed the results of our experience in these patients.
Materials and Methods: This historical cohort study was conducted in Imam Reza Hospital between May 2002 and September 2012. Fourteen patients with HTLV-1 infection who underwent renal transplantation (Group A) were compared with 14 identical non-infected patients (Group B). Also immunosuppressive drugs were the same in both groups. Patient characteristics and medical history was recorded and the outcome of renal transplantation has been followed carefully.
Results: The two groups were identical in sex and age. Among mean follow-up of 4.3 years (range: 1 to 12) there was only one rejection in Group A and also one in Group B. In other patients the mean creatinine levels didn't show any significant difference 1, 3 and 5 years postoperatively. Also the rate of post operative infections was similar in the two groups. One patient in Group A developed urinary incontinence and gait disturbance 10 years after transplant which was approved to be due to

HTLV-1 infection.
Conclusion: Although HTLV-1 myelopathy may be likely developed after renal transplantations, HTLV-1 positive patients can undergo renal transplant with confidence of acceptable prognosis and minimal complications.

UP.529
Surgical Complications of Renal Transplantation and Management in 2100 Recipients
Mahdavi-Zafarghandi R, Tavakkoli M, Taghavi R, Mahdavi-Zafarghandi M
Dept. of Urology, Imam Reza Hospital, Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: Intra or postoperative surgical complications of renal transplantation (RTX) is a serious problem and can lead to graft dysfunction or loss and even patient loss. We have studied retrospectively the demographic of intra and post transplant surgical complications as vascular, urological complication for 23 years (1900 – 2013).
Materials and Methods: Records of all recipients were reviewed and retrospective data was analysed as: intra and post transplant haemorrhage, vascular event (thrombosis, torsion, kinking) and urological complications (ureterovesical junction leak, ureteral stricture) and symptomatic Lymphocele. Finally, the results of procedures for management of these complications were reported.
Results: Out of 2100 RTX, 1580 were performed from living and 520 from diseased donors. Intraoperative haemorrhage needing blood transfusion occurred in 36 cases. Twenty cases had bleeding after operation: 12 from soft tissue and 8 from anastomasis site, in one case because of deep infection and sever bleeding the graft was removed. Vascular event like arterial and venous thrombosis, torsion and kinking occurred in 29 cases (1.2%) and the grafts were saved by immediate exploration about 70%. Urologic complication occurred in 42 cases (2%), 13 with distal end ureteral necrosis which were managed by reimplantation. Ureteral stricture occurred in 29 cases (16 short and 13 extensive), short stricture managed by endourological procedures but we reconstructed ureter by ureteropyeloplasty, Ipsilateral pyelopyloplasty, contralateral pyelopyeloplasty, for extensive ureteral stricture. In all cases graft were saved. Symptomatic lymphocele occurred in 32 cases that in 20 cases were managed by open surgery and in last 10 cases by laparoscpic procedure.
Conclusion: Early diagnosis and early exploration for vascular accident can save some grafts. Endourological intervention is the first choice for short ureteral stricture but for extensive strictures open ureteral reconstruction is recommended. Laparoscopic is an alternative procedure to induce peritoneal window for management of symptomatic lymphocele.

UP.530
Can the "One Suture-One Knot" Technique in Vascular Anastomosis in Kidney Transplant with Long-Term Follow-Up by Color Doppler Cause Vascular Stenosis?
Feizzadeh K. B[1], Nekooei S[2], Zolfagharzadeh A[2]
[1]Dept. of Urology, Endoscopic and Minimally Invasive Surgery Research Center, Kidney Transplantation Complications Research Center, Ghaem Medical Hospital, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; [2]Dept. of Radiology, Ghaem Medical Hospital, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: Studying the long-term results of vascular anastomosis technique by "one suture-one knot" method in kidney transplantation by using the color Doppler ultrasound.
Materials and Methods: In this cross-sectional study, all patients who underwent kidney transplants by "one suture-one knot" technique were designated during October 2011 through October 2012 at Ghaem Medical Hospital, Mashhad, Iran. Patients who were operated by the mentioned technique were included and patients who had died because of non-surgical complications of renal transplantation were excluded. Written informed consents were obtained from patients before entering the study. Maximum blood flow velocity in main renal and iliac arteries, artery resistance and acceleration time in interlobar arteries of transplanted kidneys were measured by the use of color Doppler ultrasound in the first week, the 1st, 3rd and the 12th months after the transplantation. SPSS 15 software was used for data analysis by T-tests and chi-square statistical analysis.
Results: Out of the 52 patients, 24 were male and 28 were female. Their average age was 31.6 years. Twenty cases received their kidneys from a donor while 32 received it from a deceased donor. During the 12-month follow-up evaluation with color Doppler ultrasound, no arterial thrombosis or stenosis was observed in any case. Kidney vein thrombosis was only seen in one case.
Conclusion: The "one suture-one knot" technique is a safe measure in kidney transplant and the results showed no difference between recipients of kidneys from donors and deceased donors.

UP.531
A Comparative Study on the Effect of Coctel Scrum and Normal Salin on Urinary Output and Plasma Creatinine following on Cadaveric Kidney Transplantation
Yarmohamadi A, Asadpoor A, Bazmi J
Ghaem Medical Hospital, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: Renal transplantation is an ideal treatment for patients with end stage renal disease. It was demonstrated that survival and function of cadaveric renal transplantation is moderately lower than live-donor renal transplantation so any procedure, in order to improve transplanted kidney function like to increase dieresis could help patients with transplantation. We started a study to investigate the effects of new Coctel Serum on urine output and the changes of plasma creatinine level in patients with cadaveric kidney transplantation.
Materials and Methods: In an analytic retrospective cohort study, from 2008 to 2012, 50 patients with cadaveric renal transplantation were enrolled in this study. Patient candidates for transplantation divided randomly into two groups. In Group 1, Serum Coctel was injected during the first 2 hours after transplantation and Group 2 received just Normal Salin as the conventional intervention. Serum Coctel in our study were included of Sodium bicarbonate (7.5%, 50cc), lasix (lmg/kg), Manitol (20%, lcc/kg) in Normal Salin or Half Salin according to patients plasma sodium. Urine volume within 4 and 24 postoperative hours and plasma creatinine level changes in first 24 hours were checked and compared with Group 2. Data in this study was analyzed by SPSS v.20 and Statistics v.10.
Results: This study showed a significant difference between 2 groups in contrast to the Urine output in the first 4 hours (P-value=0.02) and 24 hours (P-value=0.002). To determine plasma creatinine level results showed that before operation in 2 groups were no significant different, and were similar (P-value=0.2), but after operation creatinine mean level were lower significantly in the first postoperative day transplantation in Group l (P-value=0.03).
Conclusion: Comparing the Normal Salin with Coctel in normal Salin the later can cause a more effective diuresis m cadaveric transplanted kidney, so we could consider. The Coctel is very effective transplanted graft particularly in cadaveric donors.

UP.532
Effects of High Dose Anti-Thymocyte Globulin (ATG-F) Therapy on Complete Blood Cell, Rate of CMV Infection and Graft Rejection in Kidney Transplant Recipients
Pourmand G, Dehghani S, Mehrsai A, Gooran S, Rahmati M, Pourhosein M, Heidari F, Beladi L, Alizadeh F, Alatab S, Gholizadeh S
Urology Research Center, Tehran University of Medical Sciences, Tehran, Iran

Introduction and Objectives: There are controversial reports about the role of anti-thymocyte globulin (ATG-F) induction therapy in early and late functionality and performance of kidney transplant. In this study, we aimed to

evaluate the two groups of kidney transplants (ATG-F recipient and ATG-F non-recipient) and assess the effects of ATG-F on the functionality and graft rejection in these two groups.
Materials and Methods: In this study, 265 patients who had kidney transplants and received ATG-F (9 mg/kg, single dose) during period 2010-2012 were enrolled as case group. Our control group was selected retrospectively, and consisted of patients who did not receive ATG-F and had complete follow-up for 3 months. Complete blood count and CMV screening had been performed monthly for 3 months. The data of the two groups were compared for occurrence of CMV infection, thrombocytopenia, leukopenia and frequency of early and delayed graft rejection.
Results: No significant differences in age and sex were found between the two groups (P>0.05). Mean hemoglobin level was 9.8±2 g/dL in the case group and 9.5±1.9 g/dL in the control group (P>0.05). Mean white blood cell count was 10±4.5 $\times 10^3/\mu L$ in ATG-F group and 9.9±4.7 $\times 10^3/\mu L$ in the control group (P>0.05). Mean platelet count was 220.1±67.7 $\times 10^3/\mu L$ and 214.1±97.4 $\times 10^3/\mu L$ in the case and control groups respectively (P>0.05). In ATG-F group, 12.5% had early graft failure and 16.7% had delayed graft failure. In contrast 14.2% and 7.6% of individuals of the control group suffered from early and delayed graft failure, respectively (P<0.001). Frequency of CMV infection in the ATG-F group was significantly lower than that of the control group (P<0.001). Although only ATG-F received patients had ganciclovir prophylaxis.
Conclusions: Considering the lower rate of early and late rejection in ATG-F received patients, it is recommended to use high dose ATG-F as induction therapy in our center. This form of induction therapy is a part of standard care in many transplantation centers in order to reduce the risk of early and late graft failure.

UP.533

Serum Trace Elements before and 3 Months after Renal Transplantation in Kidney Recipients: An Iranian Study

Nikoobakht M, Pourmand G, Allameh F, Dialameh H, Sharifi A
Urology Research Center, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran

Introduction and Objectives: Metabolic disorders in End Stage Renal Disease (ESRD) patients may result in changes with serum concentrations of trace elements. Efficient immune system function is related to appropriate intake of trace elements. Decreased serum levels of trace elements which are regularly seen in long-term hemodialysied patients suppress immune system by affecting innate, T cell mediated and adaptive antibody responses, which is leading to alter host immune response. The aim of this study was to examine changes in serum levels of these elements, and assess the correlation between post-transplantation kidney function and serum levels of these elements.
Materials and Methods: ESRD patients due to different etiologies with history of long-term hemodialysis were divided into two groups. The first group had undergone kidney transplantation (n=54) and the second group had not (n=69). Blood levels of Lithium, Magnesium, Iron, Zinc and Copper were measured 24h before transplantation and three months after transplantation in the first group. These trace elements were measured in the second group during three months period as well. The patients' serum levels of creatinine were assessed at the same intervals as an indicator of graft function and serum levels of these trace elements compared with the normal range in the healthy population.
Results: A total of 54 patients, 18 men (33%) and 36 women (67%) with a mean age of 47.67 ± 14.33 years had undergone kidney transplantation during April 2010 and April 2011. While serum Iron (p <0.001) and Copper (p <0.001) levels significantly increased after transplantation, there was a statistically reduction in Magnesium (p <0.001) levels after the surgery. No significant differences were noted in Zinc (p = 0.17) and Lithium (p = 0.080) levels in comparison to the control group who had shown no changes during the three months period. A significant relationship was noted between serum levels of Magnesium (p = 0.015) and Zinc (p = 0.025) and creatinine within three months after transplantation.
Conclusion: The present study showed that transplantation can alter serum levels of trace elements in ESRD patients which can affect the immune system and results of kidney transplantation. Long-term hemodialysied patients have decreased serum levels of trace elements which can be somehow improved by renal transplantation. Future studies are needed to confirm if the levels reach that of healthy individuals after renal transplantation.

UP.534

Right Laparoscopic Donor Nephrectomy and Inverted Kidney Transplantation: A Long-Term Follow-Up

Simforoosh N, Tabibi A, Soltani M, Zare S, Yahyazadeh S, Abadpour B, Samzadeh M
Shahid Labbafinejad Medical Center, Urology and Nephrology Research Center, Shahid Beheshti University of Medical Sciences (SBMU), Tehran, Iran

Introduction and Objectives: To present long term follow-up of inverted kidney transplantation, an alternative easy and safe technique to overcome the difficulties associated with a short right renal vein anastomosis after laparoscopic donor nephrectomy (LDN).
Materials and Methods: Seventy nine laparoscopic donor nephrectomies and intentionally inverted renal transplantations were performed between 2004 and 2009. Renal artery was ligated by Hem-o-lok and titanium clips and the vein was closed with two Hem-o-lok clips resulting to a very short renal vein. By inverting the harvested kidney in the ipsilateral pelvic side of recipient, short renal vein is placed posterior and adjacent to the external iliac vein; this made an easy and safe short renal vein anastomosis possible.
Results: All donor nephrectomies were completed laparoscopically and no conversion to open surgery was required. The mean warm and cold ischemic time were 7.3 (2.5 – 17) and 37.5 (17 – 105) minutes, respectively. Delay graft function (DGF) was seen only in 6 cases (7.6%) while after follow-up of 60 months, grafts function were excellent with mean serum creatinine level of 1.46 mg/dl and graft survival of 93.7%. No vascular thrombosis and acute rejection were observed. Four patients died in 5 year follow-up; three cases had functional transplanted kidneys and one cases experienced graft rejection one month prior to his death.
Conclusion: Inverted kidney transplantation is an easy, safe method to overcome the problems associated with short right renal vein anastomosis after LDN. This simple modification might obviate the need for short renal vein elongation.

UP.535

Comparison of Postoperative Estimated Glomerular Filtration Rate between Kidney Donor and Radical Nephrectomy Patients and Risk Factors of Post-Operative CKD: A Multi-Centered Retrospective Matched Case-Control Study

Lee S[1], Lee D[1], Min G[1], Cho S[2], Kang S[2], Kim S[3], Yoo D[4], Park J[4], Park S[5], Jeon S[1]
[1]Dept. of Urology, Kyung Hee University School of Medicine, Seoul, South Korea; [2]Dept. of Urology, Korea University College of Medicine, Seoul, South Korea; [3]Dept. of Urology, Myongji Hospital, Goyang, South Korea; [4]Dept. of Urology, Eulji University College of Medicine, Daejeon, South Korea; [5]Dept. of Urology, Hanyang University College of Medicine, Seoul, South Korea

Introduction and Objectives: Post-operative renal function between living kidney donors and renal cell carcinoma (RCC) patients were compared to evaluate trends in recovery and discover relevant factors of renal failure.
Materials and Methods: Patients who had radical (RN) or donor nephrectomy (DN) from 4 different institutions between 2003 and 2012 were reviewed. Propensity score matching was performed and 79 patients were selected for each group. Estimate glomerular filtration rate (eGFR) was calculated using Modification of Diet in Renal Disease (MDRD) formula

pre-operatively and post-operative at 1, 3, 6, 12, 24, and 36 months. Mean eGFR was compared and difference between pre-operative values and each precedent date was calculated. Multivariate logistic regression was used to determine independent factors of decrease in eGFR of less than 60 mL/min/1.73m^2.
Results: General linear model showed that there was no difference in monthly eGFR follow-ups. The DN group showed a trend of better eGFR recovery at 24 months and 36 months compared with the RN group but this was not statistically significant. Multivariate logistic regression showed that RCC (Odd ratio [OR]=4.605, 95% Confidence interval [CI]=1.626-13.040, p=0.004), a baseline eGFR lower than 110 (OR=4.477, 95% CI=1.360-14.742, p=0.014) and age older than 40 (OR=0.046, 95% CI=0.006-0.362, p=0.000) were predictive factors for renal function decrease.
Conclusion: According to our results, precise evaluation of renal function is mandatory before surgery. Patient older than 40 or whose baseline eGFR is 110 mL/min/1.73m^2 or less should be followed-up strictly after nephrectomy. Moreover, partial nephrectomy is recommended in the management of clinical T1 stage patient as RCC is an independent risk factor of CKD after nephrectomy.

UP.536
Diuretic Stimuli at Kidney Reperfusion: A Comparative Analysis of Furosemide and Mannitol on Delayed Graft Function and Long-Term Graft Function and Survival
Castelo D, Tavares-Silva E, Dinis P, Bastos C, Figueiredo A, Mota A
Dept. of Urology and Renal Transplantation, CHUC, Coimbra, Portugal

Introduction and Objectives: Intraoperative diuretics given at the time of graft reperfusion have been used to reduce the incidence of delayed graft function (DGF). Small retrospective studies have produced conflicting results in this context, but no previous study has directly compared furosemide, mannitol or a combination of both administered at graft reperfusion regarding DGF and long-term graft function and survival.
Materials and Methods: A retrospective review of 812 consecutive transplants performed at a single academic institution between 2009 and June 2013 was performed. This sample included 29 grafts from living donors and 503 from expanded criteria donors. Grafts were classified according to diuretic given at reperfusion: furosemide 100mg, n=220 (F); mannitol 20% 250mL, n=163 (M); and 40-60mg furosemide plus 125mL mannitol 20%, n=176 (FM). One-hundred and three patients were excluded because this information could not be retrieved. The diuretic used was a random choice at the time of surgery, not guided by any other variable. These groups were compared regarding incidence of DGF and primary non function, serum creatinine at 1, 3, 6, 12 and 24 months and graft survival.
Results: The incidence of DGF was similar between the groups: 20.0% (F), 12.9% (M) and 18.2% (FM), as was the proportion of non-functioning grafts: 3.5% (F), 3.6% (M) and 3.3% (FM). Donor and recipient characteristics and intraoperative variables were comparable between the groups. Serum creatinine at 1, 3, 6, 12 and 24 months were all comparable between the 3 groups. Graft survival was also comparable: 50.9 (F), 45.7 (M) and 48.5 (FM) months. In the subset of expanded criteria donors, the results were similar to the whole cohort. In the group of stroke as donor cause of death (352 grafts), there was a lower incidence of DGF when mannitol was used (18.3% vs. 27.8%, p=0.025).
Conclusion: The administration of mannitol at graft reperfusion seems to reduce the incidence of delayed graft function in a subset of donors at higher risk for DGF. Long-term graft function and survival are not influenced by this variable.

UP.537
Long-Term Changes in Renal Function after Living Donor Nephrectomy: Predictive Factors for Chronic Kidney Disease
Song S, Park H, Hong B, Han K
Asan Medical Center, Seoul, South Korea

Introduction and Objectives: Few studies have evaluated the long-term effects of kidney donation on donors. Here, we report the long-term changes in donor renal function and the donor risk factors associated with developing chronic kidney disease after donation.
Materials and Methods: Data were obtained retrospectively from the records of living kidney donors undergoing kidney donation for renal transplantation between 2004 and 2009. Estimated glomerular filtration rates (eGFRs) were calculated preoperatively and postoperatively using the modification of diet in renal disease (MDRD) formula. Furthermore, we evaluated the predictors of postoperative prevalence of stage 3 chronic kidney disease (CKD) (as defined by the Kidney Disease Outcomes and Quality Initiative [K/DOQI]).
Results: A total of 452 donors were identified, of which 248 (54.7%) were men. The median age was 40 (range, 17-65) years. The last postoperative MDRD eGFR was evaluated at a median follow-up duration of 18.7 (interquartile range, 6.4-36.8) months after donation, and the mean decrease in MDRD eGFR was 16.7 ± 11.2 mL/min per 1.73 m^2. Stage 3 CKD developed in 126 (27.9%) donors after donation. Independent factors predicting new-onset CKD were age of more than 40 years (OR: 4.91; 95% CI, 2.87–8.42; p < 0.001) and preoperative MDRD eGFR of less than 90 mL/min per 1.73 m^2 (OR: 6.45; 95% CI, 3.78–11.02; p < 0.001).
Conclusions: Stage 3 CKD is commonly observed after living kidney donation, particularly in older donors. Moreover, preoperative eGFR is an independent predictor of CKD after donation.

UP.538
Retroperitoneal Laparoscopic Living-Donor Nephrectomy and Recipient Outcome
Wang J[1], Tian Y[2], Huan S[1], Lee L[2], Chiu A[3]
[1]Dept. of Urology, Chi Mei Medical Center, Tainan, Taiwan; [2]Dept. of Transplant Surgery, Chi Mei Medical Center, Tainan, Taiwan; [3]School of Medicine, National Yang Ming University, Taipei, Taiwan

Introduction and Objectives: Living-donor nephrectomy is performed via a standard flank approach during open surgery in contrast to laparoscopy where kidneys are procured transperitoneally. Being more familiar with retroperitoneal laparoscopic for the surgery of the upper urinary tract, we investigated the feasibility of living donor nephrectomy by this approach.
Materials and Methods: We perform laparoscopic retroperitoneal nephrectomy in 8 living donors. The patients were placed in flank position. The retroperitoneal space was developed with blunt finger dissection, through a 2-cm mini-lumbotomy above anterior superior ileal crest in the posterior auxiliary line. After primary access to the renal artery and vein, these were dissected to their junctions with great vessels, before freeing the kidney of its perinephric attachments. The kidney was delivered manually, through Gibson's incision or Pfannenstiel incision.
Results: The average duration of surgery was 193±48 (120-240) min; warm ischemia time less than 5 min (4.9±2.0). Most of the donors present grade II postoperative morbidity accorded to modified Clavien grading system. All 8 kidneys harvested laparoscopically had immediate function with urine production after revascularization and mean post operation day 1 serum creatinine level was 4.9±2.6 mg/dL. Most patients' serum creatinine levels returned to normal within 1 week. Two patients had Clavien grade 1 and two patients with grade 3 complications.
Conclusion: Our data suggest that retroperitoneal laparoscopic donor nephrectomy may represent a reasonable option in centers in which more extensive experience has been accumulated with retroperitoneal than with transperitoneal laparoscopy for the surgery of the upper urinary tract.

UP.539

Renal Retransplantation: Is the Second Transplant Different from the First?

Tavares da Silva E, Marques V, Castelo D, Simões P, Ferreira C, Figueiredo A, Mota A
Coimbra's Hospital and University Centre, Coimbra, Portugal

Introduction and Objectives: Despite improvements in post-transplant care, chronic allograft nephropathy is still responsible for the loss of a large proportion of kidney grafts and the return to dialysis. We know that transplantation is the treatment of choice for end-stage renal disease but the retransplanted patient can present different clinical and immunological challenges.
This study aims to know if there are differences in graft survival between first transplant receivers and retransplanted patients of the same donor.
Materials and Methods: Retrospective study of patients transplanted at the Urology and Renal Transplantation Department of Coimbra's Central and University Hospital from January 1985 until May 2012. Receptors pairs from the same donor were selected, in which one was a first transplant and the other a retransplant.
Results: Our population included 152 patients, 76 (50%) were first transplantations, 73 (48.0%) second transplantations and 3 (2.0%) third ones. The two groups differed in age. The first time recipients were significantly older (p=0.004). The first transplant patients were significantly heavier than the retransplanted (p=0.01).Panel reactive antibodies (PRA) were significantly higher in retransplanted patients (p=0.002). There were no differences in Human leukocyte antigen (HLA) compatibility. Graft survival was not influenced by the use of induction therapy. Induction therapy was performed significantly more times in the retransplanted group (65 vs. 36, p=0,001), most frequently Thymoglobulin (58 patients). The number of acute rejections was similar in both groups. Graft survival in both groups did not differ statistically (12.9 years for first transplants vs. 14.4 years for retransplanted). The occurrence of acute rejection was the only factor associated with worse graft survival outcome (p=0.01, HR 2.58).
Conclusion: The retransplanted patients were younger in the studied population. PRA was significantly higher in retransplanted patients. Induction therapy was performed in this group more frequently. Despite this, the number of acute rejections and graft survival did not differ between the two groups. Retransplantation is a valid therapeutic option for patients who lose the function of their first graft.

UP.540

The Treatment of Urinary Leakage Complicating Kidney Transplantation

Bosio A[1], Dalmasso E[1], Lasaponara F[1], Alessandria E[1], Lillaz B[1], Pasquale G[1], Sedigh O[1], Gontero P[1], Biancone L[2], Righi D[3], Segoloni G[2], Fontana D[1], Frea B[1]
[1]Dept. of Urology, Città della Salute e della Scienza, Molinette Hospital, Turin, Italy; [2]Dept. of Nephrology, Città della Salute e della Scienza, Molinette Hospital, Turin, Italy; [3]Dept. of Radiology, Città della Salute e della Scienza, Molinette Hospital, Turin, Italy

Introduction and Objectives: Urinary leakage occurs in 2-8% of kidney transplantations. Anastomosis dehiscence and ureteral necrosis owing to vascular insufficiency are the main causes. The objective of our study was to evaluate the outcome of different treatments for urinary leakage complicating kidney transplantation.
Materials and Methods: We made a retrospective analysis on the 1412 renal transplants performed in our Transplant Center from 1999 to 2010. The ureterovesical anastomosis was performed using the Lich-Gregoire technique and protected by a 4.8 Fr double J stent. We analysed the results of different treatments considering the time of onset, site and degree of leakage. Fisher test was used for statistical analysis.
Results: Thirty one leakages were diagnosed: 55% occurred in the first 15 postoperative days ("early onset") and 45% afterwards ("late onset"). A nephrostomy was placed in 87% of cases, not in really mild cases. Contrast study showed 55% severe, 22.5% moderate, 22.5% mild leakages. A double J stent was placed or kept in 20 cases (65%): in 16 cases it was antegradly placed (≥ 7 Fr) and in 4 minimal leaks the double J stent placed during renal transplantation was kept, together with a bladder catheter. Fifteen patients (48%) underwent surgery: 2 ureteral reimplantations and 13 reconstructions using native upper urinary tract (8 uretero-ureteral anastomosis, 5 pyelo-ureteral). Long-term overall success rate of the non-surgical treatment was 60%. Stent placement or maintenance in mild leakage succeeded in all cases. Success rates were significantly higher (p = 0.01) in case of mild leakages (100%) compared to moderate and severe cases (38%) but were not influenced by time of onset and site of leakage. Surgery was long-term successful in 87% of cases. Success was 100% in case of reconstruction with native urinary tract. Overall surgical success rate was not significantly higher compared to percutaneous treatment (p = 0.13).
Conclusion: Non-surgical treatment demonstrated excellent results on mild leakages complicating kidney transplantation and should be considered at first. Its outcome does not depend on leakage site and time of onset. Surgery is indicated in case of massive leakage and after failure of conservative treatment. Reconstructions using native urinary tract provide excellent results.

UP.542

Prospective Measurement of Urinary Microalbumin in Living Donor Nephrectomy: Towards Understanding the Renal Functional Recovery Period

Yoon Y[1], Lee K[2], Choi K[2], Yang S[2], **Han W**[2]
[1]Yonsei University Health System, Seoul, South Korea; [2]Dept. of Urology, Urological Science Institute, Yonsei University College of Medicine, Seoul, South Korea

Introduction and Objectives: To determine the clinical implications of perioperative urinary microalbumin excretion in relation to recovery of renal function after living donor nephrectomy.
Materials and Methods: Between Aug 2010 and Jan 2013, 259 patients undergoing live donor nephrectomy were enrolled. Donor urinary albumin-to-creatinine ratio (UACR) was measured perioperatively, and changes in perioperative UACR were investigated. The relationships between perioperative UACR and

UP.542, Figure 1.

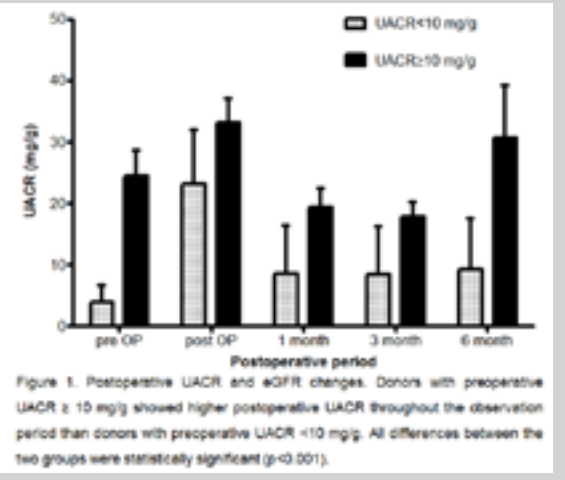


Figure 1. Postoperative UACR and eGFR changes. Donors with preoperative UACR ≥ 10 mg/g showed higher postoperative UACR throughout the observation period than donors with preoperative UACR <10 mg/g. All differences between the two groups were statistically significant (p<0.001).

UP.542, Figure 2.

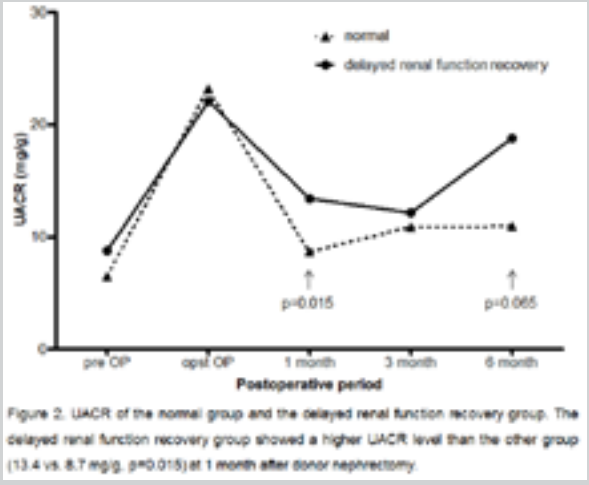


Figure 2. UACR of the normal group and the delayed renal function recovery group. The delayed renal function recovery group showed a higher UACR level than the other group (13.4 vs. 8.7 mg/g, p=0.015) at 1 month after donor nephrectomy.

recovery of renal function and implantation biopsy histology were also analyzed.
Results: Mean preoperative UACR was 7.1±12.7 mg/g. UACR was elevated in the immediate post-operative period (24.7±18.9 mg/g; p<0.001) and stabilized after 1 month (10.3±10.7 mg/g; p<0.001). Preoperative UACR was not associated with perioperative GFR during a follow-up period of 6 months, but was associated with histological abnormalities. Donors with higher levels of UACR before donation, even in the normal range, consistently showed elevated postoperative UACR (Figure 1). At 1 month after donor nephrectomy, the delayed renal function recovery group (GFR<60 mL/min/1.73 m^2 at 6 month) still showed a higher UACR level than the other group (Figure 2). One-month postoperative UACR was associated with delayed recovery of renal function (OR: 1.05 for each 0.1 mg/g increase; p=0.021). An ROC curve analysis showed that age, preoperative eGFR, and 1-month postoperative UACR were highly predictive of delayed recovery of renal function (AUC=0.881; p<0.001).
Conclusions: Donors with higher preoperative UACR levels require close observation because they have a greater possibility of developing MA after donation. Higher UACR levels were also associated with delayed recovery of renal function and histologic abnormalities.

UP.543
Urogenital Malignancies Complicating Kidney Transplantation
El-Bahnasawy M, Alharbi A, Zakaria M
Prince Salman Hospital, Tabuk, Saudi Arabia

Introduction and Objectives: Patients on renal replacement therapy have an increased cancer risk. Tumor development after Rena Transplantation (RT) is believed in some cancers to depend on the duration and type of immunosuppression or association with viral infections, while other cancers such as kidney or urinary tract cancers are linked to end stage kidney disease. Malignancies are diagnosed at younger age and at higher stages compared to patients without transplantation, and are associated with worse outcomes. Due to the increase in donor age and graft survival a significant increase in the number of genitourinary post-transplant malignancies after RT can be expected in the future.
Materials and Methods: Herein we present 3 cases of genitourinary malignancies complicating kidney transplant recipients. The three cases are a case of stage I left testicular seminoma, a case of PT3 invasive urothelial bladder carcinoma and another case of T1N0M0 renal cell carcinoma in right native kidney. Mean duration for post-transplant development of malignancies was 7 years.
Results: The testicular tumor was managed successfully by high inguinal orchidectomy with post-operative single course of carboblatinum. Bladder tumor was managed by radical cystectomy and orthotopic neobladder. The case of RCC was managed by radical nephrectomy. Immunosuppressive regimens were modified in three cases however the case of urothelial bladder malignancy developed distant metastases 3 years post-operatively.
Conclusion: These cases highlight the necessity of long life follow-up of these patients putting a high index of malignancy suspicion.

UP.544
Epidemiological and Medicolegal Aspects of Renal Transplantation in Sfax: About 340 Cases
Bouassida M, Hadj Slimen M**, Touaiti T**, Smaoui W, Fourati M, Mseddi M, Rbai N, Mhiri M
CHU Habib Bourguiba, Sfax, Tunisia

Introduction and Objectives: Transplantation is the most interesting treatment of terminal renal failure and it's more operated since the first time in Tunisia in 1986. The aim of our study is to analyze the epidemiological aspects of donors and acceptors, evaluate the graft evolution and expose the medico-legal, ethical, and religious aspects to improve the transplantation activity in Tunisia.
Materials and Methods: Our study is retrospective covering the period from April 1994 to December 2013 concerned 340 cases. We studied the specification of donors, acceptors, the operative technique and the evolution of grafts.
Results: The acceptor average age was 32.9 year (8-58). The sex ratio was 1.35. The patients were on hemodialysis since an average period of 39 months. The grafts were from living donors in 83%, 78.3% left graft. The arterial anastomosis was termino-lateral in external or primitive iliac artery for all cases. The venous anastomosis was termino-lateral in the external iliac venous in 98.3%. Urinary anastomosis was performed with the Lich-Gregoires technique in 89.7% AND lead-better-Politanos technique in 10.3%. Thirty four patients died after an average of 34 months. The graft was operational until the dying moment in 14 cases (42.4%). Among 306 survivors, 46 (16.8%) were back to hemodyalisis after an average period of 31 months. The survey of grafts was 75% after 5 years and 60% after 10 years.
Conclusion: The success of renal transplantation still being the outcome of a multidisciplinary collaboration for a good selection of patients to guarantee best survey chance.

UP.545
Nephron-Sharing Surgery: An Update of the Newcastle Transplant Unit Restored Kidney Program
Patterson I, Stein A, Sprott P
Newcastle Transplant Unit, Newcastle, Australia

Introduction and Objectives: Kidneys with small renal tumours or other urologic problems are a novel and useful source for renal transplantation. A number of programs in Australia and around the world have described the successful outcomes of transplantation of kidneys that have undergone partial nephrectomy for small renal tumours measuring <3.5cm in size. The Newcastle Transplant Unit has administered an extended-criteria restored kidney program for tumours up to 5cm in size since 2008.
Materials and Methods: Urologists and renal physicians in the Hunter New England Local Health District and surrounding areas were encouraged to refer patients with small renal masses (SRM) measuring <5cm to the Newcastle Transplant Unit when considering a radical nephrectomy. Between 2008 and 2014, there have been 26 kidneys referred for nephrectomy and potential transplantation. Given the larger tumour size accepted in our program compared

to other programs, there is a small but real risk of increased rates of tumour recurrence or metastasis in the recipient.
Results: There have been 26 kidneys referred for consideration for transplantation after back-table partial nephrectomy or reconstruction. Twenty five kidneys have had small renal masses and one kidney had sustained a complicated ureteric injury. The average size of the tumour in the renal mass kidneys was 39mm. There were six kidneys discarded for transplantation purposes after nephrectomy. The average age of the donors was 57.8 years. The average age of recipient was 65 years and the average follow-up of these patients has been 19.2 months (range 2 weeks to 58 months). All grafts have survived except one, and the average creatinine in the recipient population is 191.8mmol/L. There have been no confirmed episodes of recurrence or metastatic disease in the recipient population.
Conclusion: Although nephron-sparing surgery is considered the gold standard in the management of small renal masses, there are times when radical nephrectomy is deemed appropriate. We have found that in a highly-selective group of these patients, the opportunity for nephron-sharing surgery provides a real and safe alternative source of transplant kidneys.

UP.546
Anti-HLA Antibody Reduced Graft Survival in Living-Related Transplants: Over 20-Years Experience
Mizutani K
Dept. of Urology, Nagoya University Graduate School of Medicine, Nagoya, Japan

Introduction and Objectives: Recently, many studies showed effects of HAL antibody to kidney transplants. However, longer behavior and impact of HLA antibody were not clear. In this study, the role of HLA antibodies in allograft rejection was examined utilizing a unique resource of sera collected annually and stored over a 23-year period from patients with rejected or retained grafts.
Materials and Methods: We selected 60 transplant patients who received kidney from 1984 to 1999, and whose serum samples were available annually. During 23 years, 32 patients were rejected their grafts and 28 had functioning grafts. Their samples were tested for HLA Class I and Class II antibodies by flow cytometry, ELISA, or cytotoxicity. For analyzing specific HLA antibodies, we used Labscreen Single antigen (One Lambda).
Results: HLA antibodies were found in 81% of patients who rejected grafts, compared to 50% with functioning transplants (p=0.0001). In addition, even if living-related transplants had good kidney function for a longer time, some living-related patients gradually developed HLA antibodies with stable functioning grafts.
Conclusions: In conclusion, patients who rejected transplants had HLA antibodies more frequently than those with functioning grafts. These antibodies found in the peripheral circulation, and their association with failure is consistent in long period.

UP.547
Phytohemagglutinin-Induced IL2 mRNA as a Useful Marker of Kidney Transplants
Mizutani K
Dept. of Urology, Nagoya University Graduate School of Medicine, Nagoya, Japan

Introduction and Objectives: Recently, as we have treated kidney transplant patients with multiple drug therapy, comprehensive and correct evaluation of immunosuppressed patients cannot be implemented by blood level monitoring alone. In addition, the efficacy and toxicity of immunosuppressive drugs vary among patients. Currently, no diagnostic test is available to personalize the use of each drug. Even if levels of calcineurin inhibitors were suitable, some transplants had rejection episodes. Therefore, new approaches are needed for the net immunosuppressive state of the kidney transplants. We introduced a new concept of ex vivo gene expression analysis, where drug action was stimulated under physiological condition. This new model was applied to kidney transplants in our institutes. In this study, we report new development such personalized immuo-monitorings and show one case with cellular rejection.
Materials and Methods: Patients with kidney transplantation were recruited after the protocol was approved by the institutional review board. Blood was drawn periodically before and after transplantation and tacrolimus or cyclosporine treatment (CI). Whole blood was stimulated at 37°C for 2 hours with either solvent or phytohemagglutinin (PHA) in triplicate, then IL2 and other cytokine mRNA was quantified by the method we developed (Clin Chem 52:634, 2006).
Results: PHA-induced mRNA expression was compared before and after CI treatment in pre-transplant patients. PHA-induced interleukin-2 (IL2) mRNA expression was significantly ($p<0.05$) reduced after CI treatments. During their follow-up, one living-related transplant had cellular rejection and failed transplanted kidney. In this case, PHA-indeced IL-2 mRNA increased before rejection episode although the expression of other cytokines mRNA had not changed. After IL2-mRNA expression increased, the levels of serum creatinine increased gradually and her transplanted kidney was rejected finally. Other patients without rejection did not have any change of IL-2 mRNA.
Conclusion: The quantification of PHA-induced IL2 mRNA will be a useful tool for the development of personalized medicine diagnostics for monitoring immunosuppressive status and find rejections before increased serum Cr.

UP.548
Therapeutic Effects of Intracavernosal Plaque Excision in Peyronie's Disease: A None Grafting or Tunical Excising Procedure
Ahmadnia H[1], Kamalati A[2], Younesi Rostami M[3], Imani M[4], Asadpour A[1], Hariri M[1]
[1]Dept. of Urology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; [2]Dept. of Urology, Faculty of Medicine, Kerman University of Medical Sciences, Kerman, Iran; [3]Dept. of Urology, Faculty of Medicine, Mazandaran University of Medical Sciences, Sari, Iran; [4]Dept. of Urology, Ghaem Hospital, Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: Current surgical treatments in Peyronie's disease accompanied by complications such as penile shortening, loss of sensation, erectile dysfunction and recurrence of disease. Treatment of Peyroni's disease by the intracavernosal plaque excision is a new surgical technique. Here, we represent our results of the use of this technique for the surgical correction of Peyronie's disease in our series.
Materials and Methods: Intracavernosal plaque excision was performed in 35 males referred to our clinic between 2009 and 2012. The diagnosis of peyronie's disease was based on a palpable penile plaque and acquired penile curvature. The basic criteria for selecting the patients for operation: a peyronie's plaque that doesn't response to current medical treatments, duration of the disease not shorter than 12 months, a stable state of the disease of at least 6 months, localized lesions, impaired sexual intercourse, and curving during erection that is not due to penile fracture. The operation consists of incising the tunica albuginea parallel to the plaque and through this incision, the plaque was removed from the inside surface without excision or replacing the underlying tunica albuginea by grafts. All patients were evaluated before and periodically within 12 months after the surgery with measurement of penile length, curvature angle in the rigidity phase, and sexual satisfaction.
Results: The mean age of patients was 51.4±5.3 years (range 42-59). The angle of penile curvature was 25°-45° (mean 35°). Thirty patients (86%) obtained a near complete straightening of penis. All patients restored their previous penile length without any disorder of sensation within the glans penis and expressed improvement of sexual activity.
Conclusion: Intracavernosal plaque excision is a simple, easy, and minimal invasive method that does not result in penile shortening, loss of sensation or erectile dysfunction. In properly selected patients, this technique can lead to acceptable elimination of penile curvature and sexual satisfaction.

UP.549

The Effect of 5-Alpha Reductase Inhibitor on Structure and Function of Major Pelvic Ganglion in Old Rats

Zhang M[1,2,3], Wang X[1], Zhang C[1], Qing L[1], Xia L[1], Gao P[3], Shen Z[1]

[1]Dept. of Urology, Ruijin Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China; [2]Dept. of Urology, Ruijin Hospital North, Shanghai Jiao Tong University School of Medicine, Shanghai, China; [3]Dept. of Hypertension, Ruijin Hospital, Shanghai Institute of Hypertension, Shanghai Jiao Tong University School of Medicine, Shanghai, China

Introduction and Objectives: Many clinical studies reported 5-alpha reductase inhibitor-related erectile dysfunction; we have previously reported that finasteride treatment for 4 weeks reduced the weight of the corpus canvernosum in adult rats, but to date, the effect of 5-alpha reductase inhibitor on peripheral erection-related nervous system was unknown. The present study was to investigate the effects of long-term treatment of finasteride on structure and function of peripheral erection-related nervous system in old rats.

Materials and Methods: Old, male Sprague-Dawley rats were divided into two groups (20/group): (i) control; (ii) oral finasteride treatment. Sixteen weeks later, erectile function was measured by the ratio of intracavernosal pressure and mean arterial blood pressure upon electrical stimulation of the cavernous nerve. Serum T and dihydrotesterone (DHT) were measured using liquid chromatography tandem mass spectrometry. The ultrastructure of major pelvic ganglion (MPG) was observed using transmission electron microscopy (TEM). The nNOS-positive nerve fibre of MPG was detected by immunohistochemistry (IHC).

Results: The serum T and DHT levels of Group A and B were 0.524±0.096 and 0.527±0.102 ng/ml ($p>0.05$), 51.10±6.72 and 25.78±5.08 pg/ml ($p<0.001$), respectively. The mean ratio of ICP/MAP in Group A and B after electrical stimulation of the cavernous nerve were 0.72±0.07 and 0.48±0.07 ($p<0.001$). In Group B rats, a significant reduction of erectile response was found during the second and third electrical stimulation of the cavernous nerve. The nNOS-positive nerve fibre in MPG of Group B was lower than that in Group A. Severe reduction of the number of myelinated and unmyelinated nerve fibres could be seen in MPG of Group B, as well as the dilatation of mitochondrion. The degree of demyelination was much more severe in Group B.

Conclusions: Long-term administration of 5-alpha reductase inhibitor may significantly attenuates the erectile response to electric stimulation of cavernous nerve in old rats. The mechanisms are partially due to the degenerative effect of 5-alpha reductase inhibitor on MPG in old rats. The present study may partially explain the reasons of persistent sexual side effects associated with 5-alpha reductase inhibitors.

UP.550

The Different Patterns of TRPC Subtypes Expression in the Disease-Related ED

Lee S[1], Choo S[2], Kim J[1], Sung H[1], Chae M[1], Kang S[1], Park J[3,4]

[1]Dept. of Urology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, South Korea; [2]Dept. of Urology, Ajou University Hospital, Suwon, South Korea; [3]Dept. of Urology, Medical School, and Institute for Medical Sciences, Chonbuk National University, Jeonju, South Korea; [4]Research Institute and Clinical Trial Center of Medical Device of Chonbuk National University Hospital, Jeonju, South Korea

Introduction and Objectives: Transient receptor potential canonical (TRPC) proteins have been known as Ca^{2+}- permeable cation channels, which play important roles in the regulation of smooth muscle function. Recently, emerging evidence suggests a signification contribution of TRPC proteins to pathophysiological mechanism of various diseases. However, to date, there are few data regarding the potential role of TRPC channel in the pathogenesis of ED. The aim of current study was to evaluate the potential pathophysiological relevance of TRPC in the ED development caused by various diseases complications.

Materials and Methods: Real-time PCR and Western blots performed to evaluate the expression level of TRPC mRNA and protein in the each penile tissue of diabetes mellitus and hypercholesterolemia rats. To examine the cellular localization and changes in the expression levels of TRPC channels, immunohistochemical (IHC) experiments were also performed.

Results: The relative expression levels of TRPC3, TRPC4 and TRPC6 mRNA were significantly increased in the diabetic rats than normal controls. The TRPC4 mRNA was showed dramatic changes than any other subtype of TRPC (TRPC3: 1.4 ± 0.15 fold, TRPC4: 1.8 ± 0.29 fold, TRPC6: 1.5 ± 0.2 fold, n=8, $p < 0.05$ *vs.* normal control). Also the protein level of TRPC4 was three times higher than in normal controls. However in the hypercholesterolemia rats, the mRNA expression of TRPC6 was significantly up-regulated than normal controls (TRPC4: 1.4 ± 0.29 fold. TRPC6: 2.2 ± 0.27 fold ＊$p<0.05$, n=8). TRPC6 protein showed the same trends as the mRNA. IHC study could confirm the expression of TRPC1, TRPC4, and TRPC6 in the penile tissue of every experimental animal group. Consistently, the TRPC4 and TRPC6 expressed much higher in the each diabetes and hypercholesterolemia rats in IHC. The increasing of these proteins was mostly located in smooth muscle cells.

Conclusions: This study showed that the TRPC subtype expression was changed in disease dependently. The alteration of TRPC channel expression or/and function might contributed to the pathogenesis of ED and could be a target for drug development for disease-specific ED.

UP.551

Comparisons of Apomorphine-Induced Erection and Spontaneous Overnight Erection in Rats by Telemetric Assessment of Intracavernosal Pressure

Lee S[1], Han D[1], Kim J[1], Sung H[1], Chae M[1], Kang S[1], Park J[2,3]

[1]Dept. of Urology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, South Korea; [2]Dept. of Urology, Medical School, and Institute for Medical Sciences, Chonbuk National University, Jeonju, South Korea; [3]Research Institute and Clinical Trial Center of Medical Device of Chonbuk National University Hospital, Jeonju, South Korea

Introduction and Objectives: Although there are several methods for assessing erectile function in rats, the standard methods for telemetric monitoring have not been established. Theoretically, assessment of spontaneous overnight erection (SOE) seems to be the most physiologic method but it needs long measuring time and additional efforts. Apomorphine-induced erection (AIE) is one available and simple method; however, the correlation with SOE has not been assessed. We compared erection profiles of AIE and SOE in normal and disease rat models by telemetric assessment of intracavernosal pressure (ICP).

Materials and Methods: Seven-week-old male Sprague-Dawley rats were assigned to normal control, diabetes mellitus (DM) and hypercholesterolemia (HC) group. After 19 weeks a telemetric pressure sensor (C40; Data Sciences, St. Paul, MN) was surgically implanted in the corpus cavernosum. One week later, ICP was recorded in freely moving animals after intraperitoneal apomorphine (100 μg/kg) injection (AIE) or during overnight (SOE). Sexual events were visually identified and recorded. Only the pressure increases that occurred during sexual behavior were analyzed.

Results: Two-way ANOVA revealed no significant effect of the measuring methods on the mean AUC ($F_{1, 43} = 2.756$, P-value = 0.104), but a significant effect of different disease models on mean AUC (two-way ANOVA: $F_{2, 43} = 12.929$, P-value < 0.001) was observed. The mean AUC of normal control rats was significantly higher than that of DM and HC rats (Bonferroni post hoc test: $P < 0.001$ and $P = 0.001$, respectively).

Conclusion: ICP measurements using a telemetric device showed no significant difference

in AUC between AIE and SOE. AIE is easy and requires less time than SOE measurements. Therefore, AIE could be a useful method to evaluate ICP in rats.

UP.553

Association of Anthropometric Measures and Men's Health Problems in Middle Aged Men: A Cross Sectional Study in Korea

Cho I, Kim Y, Kim S, Kim S, Min S
National Police Hospital, Seoul, South Korea

Introduction and Objectives: There have been no reports on the best anthropometric index for assessing the link between obesity and men's health. We evaluate the relationship of two anthropometric measurement variables, body mass index (BMI), waist-to-hip ratio (WHR) and symptom scores of five widely used questionnaires for detecting men's health problems. And we determine the predictive abilities of two obesity indices and other clinical parameters for screening lower urinary tract symptom (LUTS) and sexual dysfunction of middle aged men.
Materials and Methods: Between March and September 2013, 1910 police officers aged 40-59 years who had participated in a health examination were included. Exclusion criteria included presence of pyuria, history of lower urinary tract disorder influencing urination. All men underwent a detailed clinical evaluation using the validated International Prostate Symptom Score (IPSS), National Institutes of Health-Chronic Prostatitis Symptom Index (NIH-CPSI), Androgen Deficiency in Aging Males (ADAM), International Index of Erectile Function-5 (IIEF-5), and Premature Ejaculation Diagnostic Tool (PEDT) questionnaires. The BMI and WHR measurements were determined. Serum PSA, urinalysis, testosterone, estimated glomerular filtration rate (eGFR), evaluation of metabolic syndrome (MetS), and transrectal ultrasonography were also performed.
Results: Data from 1899 men were analyzed. The median age was 53.0 years, and median values of BMI and WHR were 24.8 kg/m^2, 0.93, respectively. Obese (BMI ≥25.0kg/m^2) men showed a low testosterone level, low eGFR, high total prostate volume (TPV), and high prevalence of MetS (p<0.001, p=0.042, p<0.001, and p<0.001, respectively). Abdominal obese (WHR ≥0.93) men had a low testosterone level, high TPV, low IIEF-5, high prevalence of MetS (p=0.010, p<0.001, p<0.001, p<0.001, respectively). Using logistic regression analysis, age and TPV were independent predictors for moderate to severe LUTS in the multivariate analysis (p=0.001, OR 1.034, 95% CI 1.014-1.056, p=0.010, OR 1.019, 95% CI 1.004-1.033, respectively). MetS was only significant predictive factor for moderate to severe CPSI score (p=0.022, OR 0.747, 95% CI=0.581-0.959). Age and MetS were independent predictive factors for moderate to severe IIEF-5 scores in the multivariate analysis (p<0.001, OR 1.121, 95% CI 1.087-1.156, p=0.036, OR 1.323, 95% CI 1.018-1.720, respectively). WHR had a statistically significant value of predicting moderate to severe IIEF-5 score in the univariate analysis (p=0.016, OR 47.683, 95% CI 2.080-1093.027).
Conclusion: Our data showed that TPV is significant predictor for LUTS and central obesity by WHR has a predictive ability for erectile dysfunction. Handling of correctable factors such as WHR may be considered one of the preventive modalities against the development of men's health concerns.

UP.554

Perception and Differentiation of ED and PE in Asian Population: The Result of SCOPE (Sexual Concerns on Premature Ejaculations)

Loh J[1], Lam M[2], Ong T[3], Abdul Razack A[3], Lee E[4]
[1]University of Southampton, Southampton, UK; [2]University of Leicester, Leicester, UK; [3]University Malaya Medical Centre, Kuala Lumpur, Malaysia; [4]Gleneagles Hospital, Kuala Lumpur, Malaysia

Introduction and Objectives: Premature ejaculation (PE) is a common medical condition affecting men and their sexual partners, affecting up to 30% of general population. The objective of this study is to identify the level of knowledge on PE and differentiation of the condition from erectile dysfunction (ED) in a socio-economically diverse nation in Asia.
Materials and Methods: Subjects from both urological and non-urological clinics are recruited to complete non-validated part questionnaires on their perception towards ED and PE and the treatment modalities. The age, gender, income and economic backgrounds were identified.
Results: A total of 1541 subjects (792 men and 749 women) completed the study, of which 66% believed PE is more common than ED and 65% considered having poor knowledge of the condition. Forty percent of the respondents agreed PE and ED are difficult to be differentiated and 30% considered ED and PE are essentially the same and a third thought both conditions should be treated with the same therapy. A significant number of the respondents (82%) considered ED to be a medical condition, while 77% perceived PE to be psychological. Half of the subjects considered PE curable.
Conclusion: Sexual dysfunction is a taboo in many Asia and associated with knowledge deficiency in sexual health. Although many understand PE is a more prevalent sexual dysfunction compared to ED, our study revealed difficulties in the differentiations of the two conditions. Such confusion may lead to unsatisfactory treatment seeking behavior and failure of therapeutic interventions. Sub-analysis of the population studied may ensure targeted patient educations.

UP.555

Sexual Function

Škorić **V**[1], Urbanovski B[1], Kunić G[1], Slavnić N[1], Nale D[2,3]
[1]Dept. of Urology, General Hospital, Sombor, Serbia; [2]Clinical Center of Serbia, Clinic of Urology, Belgrade, Serbia; [3]Faculty of Medicine, University of Belgrade, Belgrade, Serbia

Introduction and Objectives: Sexual dysfunction in women is a problem that is not well studied or discussed. The objective of our cross-sectional study was to evaluate the influence of urinary incontinence on sexual function in premenopausal and postmenopausal women with various types of urinary incontinence using validated and reliable Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-12).
Materials and Methods: A total of 43 consecutive, sexually active incontinent women, who came to our urology department, were, under the assumption that they are suitable, enrolled in this study and 27 healthy, sexually active, continent volunteers served as control group. All patients underwent clinical evaluation including medical history, physical examination, urine analysis, urine culture and cystoscopy with stress test. Incontinent women were given prospective 3-day voiding diary. To evaluate frequency and severity of incontinence it was used the International Consultation on Incontinence Questionnaire - Short Form (ICIQ-SF). We assessed sexual functions in patients with various types of urinary incontinence and compared the data with results of healthy continent subjects by means of short form of the Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-12). All subjects were asked to complete PISQ-12 questionnaire. The mean values were compared between the groups.
Results: The average age of subjects with stress urinary incontinence (SUI), urgency urinary incontinence (UUI), mixed urinary incontinence (MUI) and controls were: 50.47±9.11, 58.73±10.31, 58.71± 12.69 and 49.56 ±7.10, respectively. Age was significantly lower in patients with SUI and control group (p=0.003). Total score of PISQ-12 of women without and with various type of incontinence were: controls: 10.00±5,69; SUI:15,38±6,98; UUI:15.00±5,15; MUI:18,58±8,68. Total score of PISQ-12 was significantly higher in incontinent women (p=0.002). Among the incontinence types, no significant difference was determined in total score of PISQ-12. Frequency of incontinence episodes and severity of incontinence obtained from ICIQ-SF questionnaire significantly influenced on total score of PISQ-12 (p=0.036 and p=0.005, respectively).
Conclusions: Urinary incontinence

significantly reduces sexual functions in sexually active women. Frequency and severity of incontinence has significant influence on sexual functions among women with urinary incontinence.

UP.556

Recovery of Sexual Dysfunctions in Aged Male Patients by the Regulation of Blood Glucose Level: First Diagnosed by the Urologist

Yildiz M[1], Demirtas A[2], Demirtas S[3], Akkorlu S[1]

[1]Ozel Lokman Hekim Hospitals, Etlik, Ankara, Turkey; [2]Gülhane Military Academy School of Nursing, Etlik, Ankara, Turkey; [3]Gülhane Military Academy School of Medicine, Etlik, Ankara, Turkey

Introduction and Objectives: Diabetes is a main disease that affects metabolism and sexual function. Vascular effect of diabetes on penile erection and testicular function will improve libido decrease and impotence gradually. This study aims to show that controlled blood glucose levels can help male patients, with sexual dysfunctions, unaware of being a DM patient, to recover these dysfunctions.
Materials and Methods: We conducted a retrospective study on patients applied to with erectile dysfunction symptoms and diagnosed as diabetes mellitus for the first time by the urologist. Between Jan 2008 and Feb 2014, fourteen male patients were diagnosed as diabetes mellitus. Blood tests and sexual performance questionnaire scale were performed. The questionnaire is "The International Index of Erectile Function (IIEF)" which is a validated scale for Turkish. After the blood glucose levels were regulated by internal medicine doctor, the scale was re-performed. The data is analyzed with T-Test using SPSS ver. 15 software.
Results: Mean age is 45 (24-56) years old. Retests were made averagely 50 days after the first diabetes diagnose. Retest scores of the 14 patients showed increased questionnaire scores. The differences between the scores before and after the treatment are compared and found statistically significant. (t=0.788 p=0.001).
Conclusion: Sexual dysfunctions can be an indicator for the diagnosis of DM in middle aged and elderly male patients. These dysfunctions can decrease by the regulation of blood glucose level.

UP.558

Effects on Serum Sex Hormone Levels by the Treatments for Localized Prostate Cancer: Three-Dimensional Conformal Radiotherapy versus Radical Prostatectomy

Kitahara S, Kobayashi S, Yano M, Kusuda J, Komatsu A

Tama-Nambu Chiiki (Tama Southern Regional) Hospital, Tokyo, Japan

Introduction and Objectives: Three-dimensional conformal radiotherapy (3D-CRT) can focus precisely on the target tumor and avoid healthy surrounding tissue or organ, which results in fewer long-term adverse effects, comparing with conventional radiation therapy. 3D-CRT as well as radical prostatectomy is currently one of standard therapies for localized prostate cancer (cT1c-2N0M0). We investigate effects of the two therapies on serum sex hormone levels to assess testicular damage by the treatments for localized prostate cancer.
Materials and Methods: From January 2011 to February 2014, serum levels of testosterone, LH and FSH were measured before and after each therapy in patients with localized prostate cancer without hormonal therapy. Eight patients were treated with 3D-CRT (Group RT) and 6 were treated by radical prostatectomy (Group OP). Mean interval of hormone measurements was 12 months (range 6 to 18) in Group RT and 20 months (range 12 to 24) in OP Group. Dose of 3D CRT was 70Gy in 7 patients and 65Gy in one patient. All patients showed no recurrence of prostate cancer and underwent no additional treatment during the period.
Results: Mean age (years) of the patients before the treatment in Group RT and Group OP was 69 (range 63 to 77) and 67 (range 58 to 72), respectively. In Group RT, the treatment did not change serum testosterone level (p=0.767) but significantly increased both LH (p=0.008) and FSH (p=0.008) in serum level. In Group OP, the treatment did not change serum levels of testosterone (p=0.173), LH (p=0.173) and FSH (p=0.917).
Conclusion: These data indicate that 3D-CRT for localized prostate cancer seems to affect testicular function due to scattering as with conventional radiotherapy, and that radical prostatectomy might make no significant effects on testicular function.

UP.559

Does Thulium:YAG (RevoLix®) Prostatectomy for the Treatment of Benign Prostatic Hyperplasia Affect the Erectile Function?

Chung J, Kang P, Seo W, Chung J, Kim S, Park S, Park S, Kim W, Yoon J, Oh C, Kang D, Min K

Inje University, Busan, South Korea

Introduction and Objectives: We investigated the effect of Thulium:YAG (RevoLix®) laser therapy for the treatment of benign prostatic hyperplasia on the erectile function.
Materials and Methods: A total of 105 patients for whom data for a 1-year follow-up data on the IIEF-5 were available included in this 2-center, retrospective study. Erectile function was assessed by administering the International Index of Erectile Function (IIEF-5). All cases were evaluated preoperatively and at 3, 6, and 12 months after surgery using international prostate symptom (IPSS), quality of life (QoL) score, Qmax, post-voiding residual urinary volume and IIEF-5. Patients were divided into three groups according to their IIEF-5 score (Group A, IIEF-5≤7:n=37; Group B, 8≤IIEF-5≤16:n=53; Group C, 17≤IIEF-5:n=15). The changes in IIEF-5 over time were analyzed using a linear mixed model.
Results: Mean patient age was 69.6±6.0, 64.5±5.3 and 63.6±7.1 years in each group, respectively (p=0.04). There was no significant difference among the 3 groups regarding total operation time. The preoperative prostate size was 55.1, 56.1, and 48.6 cc for groups A, B and C. There was a significant prostate size reduction in all groups. The prostate size estimated postoperatively were 25.2, 26.9 and 23.2 cc respectively. There was a significant improvement in Qmax, PVR, IPSS and QoL scores among the 3 groups during 12-months follow-up period. IIEF-5 score at 3-months follow-up point after surgery was lower than preoperative score in the Group B and C (Group A: 4.1 vs. 4.3, Group B: 12.6 vs. 9.5, Group C: 19.8 vs. 14.3). However, IIEF-5 score gradually increased and reached preoperative state at 12-month follow-up point (Group A: 4.5, Group B: 12.3, Group C: 19.6).
Conclusions: Thulium laser prostatectomy is an effective procedure for the treatment of BPH, whereas it did not have an effect on erectile function eventually.

UP.560

Infrapubic Implantation of Penile Prosthesis: Patient and Partner Satisfaction

Meyer C, Reiss P, Ludwig T, Fisch M, Dahlem R**, Soave A**

University Hospital Hamburg-Eppendorf, Hamburg, Germany

Introduction and Objectives: The penoscrotal approach for the implantation of penile prosthesis is the most common but bears significant malfunctioning and discomfort during sexual intercourse due to scrotal tube positioning. We provide first evidence for the avoidance of these problems by the infrapubic approach with lineage of the tubes along the penile root.
Materials and Methods: A 23-item patient questionnaire and 5-item partner questionnaire was designed assessing satisfaction with various domains related to the prosthesis, including validated instruments like a modified EDITS. The questionnaire was send to all patients that underwent an infrapubic IPP between 2008 and 2012 at our institution. Scores were measured with a 4-5 point rating (Likert) scale with a score >= 2considered satisfactory.
Results: Twenty three patients were treated by infrapubic approach and considered for

evaluation. Of those, 22 had a primary infrapubic surgery and one was revised infrapubically after intial penoscrotal implantation. Eleven (47.8%) patients responded, five patients (21.7%) denied participation, one patient had died (4.3%) and six patients (26.2%) were lost to follow-up. Partner questionnaires were not returned in two cases. Median follow-up was 1.97 years (range 0.92 – 3.5) and the average age 57 years (range46 – 66). Overall, 9 patients (82%) were satisfied or very satisfied with the result of the implants and patient expectations were totally or largely met by the prosthesis; 91% (10) had never been bothered by the tubes and 73% (8) had never experienced pain caused by the tubes during intercourse. A total of 73% (8) and 45.5% (5) of patients were satisfied with the rigidity and length of the prosthesis, respectively. Eighteen percent (2) reported to suffer from a concorde phenomenon on a regular basis. Despite this 45.5% (5) use the prosthesis more than 10 x/month and 73% (8) use it more than 6 x/month. Eighty two percent (9) of patients would recommend the treatment to others; 73% (8) of the partners were satisfied or more than satisfied with the prosthesis as treatment for their partners ED; 64% (7) of partners felt more attractive because of the prosthesis and 91% (10) were not bothered by the tubes during intercourse.
Conclusion: The infrapubic approach for penile prosthesis implantation seems to meet the high expectations of patients and results in few adverse effects during intercourse. A wider embracement of this technique should be considered while further comparative trials are warranted.

UP.562
Impact of the MITROFANOFF Continent Urinary External Diversion on Female Sexuality
Hadj Slimen M[1], Smaoui W[1], **Touaiti T[1]**, Bouassida M[1], Mhiri M[1]
[1]Dept. of Urology, Habib Bourguiba Academic Medical Center, Sfax, Tunisia

Introduction and Objective: To evaluate female sexuality after performing a MITROFANOFF continent urinary external diversion.
Materials and Methods: A total of 45 women were questioned about their sexuality after performing a MITROFANOFF continent urinary external diversion. The indication of the bypass was a neurological etiology (90%). Our study was based on a validated questionnaire "Female sexual function index." Translated in language spoken.
Results: After a mean follow up of 11 years, the average age was 34 years. Continence was achieved in 100%. Self- survey was considered easy in 93%. Patients were divided according to their marital status: 24 singles, 14 married before surgery, 2 married 9 years on average after surgery and 5 widowed including 3 after operation. Sexuality was considered conserved among brides with total satisfaction, one of them had a pregnancy 4 years after marriage. All of patients reported wellness feeling after the disappearance of urinary incontinence with better body image vision. In contrast, impaired sexuality was felt among unmarried (70%), widowed (40%) and married before the intervention (42.85%). The field of sexuality most affected was sexual dissatisfaction. These disorders are multifactorial causes related primarily to the original neurological condition and family situation. Furthermore, constraints to the bypass charged were considered troublesome in five cases.
Conclusion: The feeling of being healed of voiding dysfunction, preserving the integrity of the body image and the presence of an understanding partner, are key factors for sexual satisfaction in patients prepared and motivated after achieving a MITROFANOFF continent urinary external diversion.

UP.563
Impact of MITROFANOFF External Continent Urinary Diversion on Male Sexuality
Hadj Slimen M[1], Smaoui W[1], **Touaiti T[1]**, Bouasssida M[1], Mhiri M[1]
[1]Dept. of Urology, Habib Bourguiba Academic Medical Center, Sfax, Tunisia

Introduction and Objective: To evaluate the influence of MITROFANOFF external continent urinary diversion on male sexuality.
Materials and Methods: A total of 46 men were interviewed about their sexuality after performing a MITROFANOFF external continent urinary diversion. The average age at surgery was 28.5 years (5-65yrs). The indication of the bypass was a neurological etiology (93%). This study was performed using a set of validated questionnaires, grouped according to the model representation of sexuality.
Results: After a mean follow-up of 8 years, the average age was 37.34 years now. Continence was 100%. The catheterization was considered easy in 43 cases (93%). Postoperative complications were: bladder stones (1 case) and stenosis of the stoma (3 cases). Patients were divided according to their marital status, 15 married before surgery, 7 married 6 years on average after surgery and 24 singles. Sexuality was considered conserved in Newlyweds with satisfaction (100%). These patients reported a feeling of well-being following the disappearance of urinary incontinence with their bodily integrity of images. In contrast, a relative alteration of sexuality with dissatisfaction was felt especially in singles (41%). The most affected field of sexuality was the penetration with a dissatisfaction rate of 38%. These disorders have a multifactorial cause related primarily to neurological pathology. Furthermore, constraints to the bypass charged were found in three cases troublesome.
Conclusion: The disappearance of disorders of the lower urinary tract and the preservation of the integrity of the body image are important factor for satisfactory sexual rehabilitation in young and motivated patients after completion of MITROFANOFF external continent urinary diversion.

UP.564
Bone Mass Study in Patients with Upper Urinary Tract Calcium Ureolithiasis
Feizzadeh K. B[1], Yarmohamadi A[2], Esmaeili H[3], Ahmadi F[3]
[1]Endoscopic and Minimally Invasive Surgery Research Center, Kidney Transplantation Complications Research Center, Ghaem Medical Hospital, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; [2]Dept. of Urology, Ghaem Medical Hospital, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; [3]Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Introduction and Objectives: Bone loss is one of the main complications seen in urolithiasis patients. One of the explanations for this finding could be the alterations in calcium metabolism leading to excessive resorption of calcium. In this study we evaluate the bone mineral density (BMD) among patients with urolithiasis.
Materials and Methods: This cross-sectional study was conducted on 85 upper urolithiasis patients referring to Ghaem Medical Hospital Mashhad IRAN. Questionnaires were prepared and demographic characteristics were documented. Metabolic studies, vertebral (L2-L4) and femoral neck BMD and stone configuration were conducted on all patients.
Results: Data analysis revealed no significant differences between male and female cases considering BMD. Menopaused women's femoral neck BMD in comparison with non-menopaused women was significantly reduced. However, there were no significant differences between these two groups in lumbar vertebral BMD. Furthermore, there was no significant statistical difference in bone density among patients with different types of renal calculi.
Conclusion: Urolithiasis plays a role in bone mass loss. This should be considered in menopaused patients specifically, therefore, low calcium diet should be prescribed more carefully in these patients.

UP.565
Outcome of a Trimodal Protocol for the Treatment of Lower Pole Renal Calculi between 10 and 20mm
Laing K[1], Chan L[2], Lingard J[1], Phipps S[1], Thomas B[1], Keanie J[1], Tolley D[1], Cutress M[1]

[1]Scottish Lithotriptor Centre, Western General Hospital, Edinburgh, Scotland, UK; [2]Edinburgh University, Edinburgh, Scotland, UK

Introduction and Objectives: Lower pole (LP) renal calculi remain challenging to treat despite advances in shock wave lithotripsy (SWL), flexible ureteroscopy (FURS) and percutaneous nephrolithotomy (PCNL). We use a 'trimodal' protocol for the management of LP renal calculi of size 10-20mm. SWL is used first line. FURS is used second line or where SWL is contraindicated. PCNL is used third line or where SWL and/or FURS are contraindicated. The objective of this study was to assess the outcome of our trimodal approach.
Materials and Methods: We conducted a review of our prospectively maintained database and selected patients who had undergone treatment for solitary LP calculi of size 10-20mm between 2008 and 2012. Treatment modality was determined at a multidisciplinary team meeting based on our trimodal departmental protocol. SWL was carried out as an outpatient using Sonolith Vision or I-Sys lithotriptors (Technomed Medical Systems, Vaulx-en-Velin, France). Outcome was assessed by KUB X-ray, or USS for lucent stones, at 1 month following treatment. Treatment success was defined as stone free or the presence of clinically insignificant fragments (≤3mm) on 1-month follow-up imaging.
Results: A total of 249 patients were eligible for inclusion in this study. Mean patient age was 53.1 (range 47-87) years with male to female ratio of 2:1. The overall treatment success rate using our protocol was 93.5%. A total of 10.1% patients underwent treatment using more than one modality. There were 203 (81.5%), 33 (13.2%) and 13 (5.2%) patients who underwent SWL, FURS and PCNL as first line treatment. The success rates for these treatments were 89.2%, 69.7% and 92.3% respectively. Of those 22 patients who failed SWL, 17 underwent FURS (success rate 77%), 5 underwent PCNL (success rate 80%).
Conclusion: Using this trimodal protocol for the management of LP calculi of size 10-20mm the vast majority of patients are managed successfully with SWL alone on an outpatient basis. The more invasive surgical options of FURS and PCNL can be reserved for more complex cases where SWL has failed or is contraindicated. When this strategy is employed only small numbers of patients undergo treatment with more than one modality. We advocate this approach for the treatment of LP calculi in centres managing large numbers of urolithiasis patients.

UP.566
One Day Ureteral Stenting after Ureteroscopy: What Is the Benefit to Think Again?
Galal E**, Fath El-bab T**, Abdlhamid A
Minia University Hospital, Minia, Egypt

Introduction and Objectives: To evaluate the value of short term use of ureteral catheter after uncomplicated ureteroscopy (URS).
Materials and Methods: Seventy four URS procedures were done at the Urology department of Minia University Hospital from January 2010 to March 2011. Stones at various levels of the lower ureter were the indication for URS using semirigid (Wolf 8Fr.) ureteroscope. Direct extraction and disintegration using a pneumatic lithotripter (Lithoclast, Richard Wolf GmbH, Knittlingen, Germany) were the methods of treatment. All cases included in the study were uncomplicated procedures and patients were equally divided into two groups (A & B). Group A was including patients without post-operative stenting and Group B including patients with one day ureteral catheter. Intraoperative assessment for success, residual stones and operative time was done. Patients were evaluated in postoperative day 0 and 1 for pain and stent related symptoms.
Results: A hundred percent of patients were totally cleared of stones with resolved preoperative hydronephrosis. Mean stone size was 7.3 mm (range, 6-16mm). The mean operative time was 58 minutes (range, 35-90 minutes). Post operative visual analogue scale (VAS) pain score was significantly higher in Group A on days 0 and 1. There was no difference in dysuria, urinary frequency and urgency between the 2 groups on postoperative day 0 and 1. Also, no significant difference in patients reported postoperative hematuria in either group. Unplanned hospital visit was done in 4 patients of Group A, 2 of them developed ureteral obstruction necessitated stenting.
Conclusion: In our experience, insertion of ureteral catheter for one day after uncomplicated URS is advisable.

UP.567
N-methyl-4-Isoleucine Cyclosporine: An Inhibitor of Cyclophilin D Activation, Prevents Kidney Stone Formation by Alleviating Oxidative Stress
Yasui T[1], Niimi K[1], Okada A[1], Taguchi K[1], Hamamoto S[1], Hirose M[1], Tozawa K[1], Sasaki S[1], Hayashi Y[1], Kohri K[1], Rodgers A[2]
[1]Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan; [2]University of Cape Town, Cape Town, South Africa

Introduction and Objectives: Renal tubular cell injury, a major risk factor for kidney stones disease, can be prevented by using antioxidants. Generation of reactive oxygen species (ROS) in mitochondria is closely associated with the pathogenesis of renal tubular cell injury and kidney stone disease. Previously, we demonstrated that activation of cyclophilin D in mitochondria promotes kidney stone formation through renal tubular cell injury. In this study, we evaluated the clinical application of N-methyl-4-isoleucine cyclosporine, a recently reported selective inhibitor of cyclophilin D activation.
Materials and Methods: Cultured renal tubular cells were exposed to calcium oxalate monohydrate crystals *in vitro* and then treated with N-methyl-4-isoleucine cyclosporine. To observe changes in mitochondria, mitochondrial membranes were stained with tetramethylrhodamine ethyl ester perchlorate. For the *in vivo* studies, Sprague-Dawley rats were assigned to four groups: control group, ethylene glycol group (ethylene glycol was administered to induce renal calcium crystal formation), N-methyl-4-isoleucine cyclosporine group, and ethylene glycol plus N-methyl-4-isoleucine cyclosporine group. Renal calcium crystal formation was detected by Pizzolato staining. Oxidative stress was evaluated by analyzing superoxide dismutase activity and 8-hydroxy-deoxyguanosine levels. Mitochondria in renal tubular cells were observed by transmission electron microscopy, and apoptosis was evaluated by determining cleaved caspase-3 levels.
Results: Calcium oxalate monohydrate crystals induced depolarization of mitochondrial membrane potential *in vitro*, and this effect was abrogated by N-methyl-4-isoleucine cyclosporine. Further, in rats, ethylene glycol administration induced renal calcium crystal formation, oxidative stress, mitochondrial collapse, and apoptosis, and treatment with N-methyl-4-isoleucine cyclosporine significantly reduced all these effects.
Conclusion: Our approach can be developed into a new therapeutic strategy for preventing kidney stone formation. This is the first report of use of N-methyl-4-isoleucine cyclosporine as a novel therapeutic agent that prevents renal calcium crystal formation through inhibition of cyclophilin D activation.

UP.568
Results of Shock Wave Lithotripsy (SWL) Depend on the Definition of Stone Free Rate: Comparative Outcomes from Two UK University Teaching Hospitals
Burr J[1], Rai B[2], McClinton S[2], Cohen N[2], Nick S[1], Cook P[1], **Somani B**[1]
[1]University Hospital Southampton NHS Trust, Southampton, UK; [2]Aberdeen Royal Infirmary, Aberdeen, UK

Introduction and Objectives: SWL is one of several recommended treatments for renal and ureteric stones. Fragmented stones have to be passed subsequently in the urine. The stone free rate (SFR) is variably defined, but previous studies record a relatively high success rate. We compared the results of SWL between two UK university teaching hospitals based on a variable definition of SFR.
Materials and Methods: All SWL procedures were carried out as day case procedures by a

UP.568, Table 1. Stone location and size in the two hospitals

	Hospital-1	Hospital-2	Total
Number of patients	126	202	328
Size of stones	7.5mm (3-16mm)	7.7 mm (3-17mm)	7.6 mm (3-17mm)
Multiple stones	45 (36%)	68 (34%)	113 (34%)
Upper pole	16 (13%)	38 (19%)	54 (16%)
Inter pole	21 (17%)	42 (21%)	63 (19%)
Lower pole	63 (50%)	95 (47%)	158 (48%)
Renal pelvis	9 (7%)	10 (5%)	19 (6%)
PUJ	8 (6%)	8 (4%)	16 (5%)
Upper ureter	9 (7%)	6 (3%)	16 (5%)
Successful fragmentation	64 (50%)	124 (61%)	188 (57%)
Stone free	54 (43%)	52 (26%)	106 (32%)

UP.568, Table 2. Definition of stone free rate (SFR) level

Stone free rate (SFR) level	Size of stone detected	Evaluation modality	SFR
0	No stones	USS, CT, XR	0U, 0C or 0X
1	≤ 1mm		1U, 1C or 1X
2	≤ 2mm		2U, 2C or 2X
3	≤ 3mm		3U, 3C or 3X
4	≤ 4mm		4U, 4C or 4X

mobile lithotripter. The follow-up imaging was a combination of KUB Xray or USS or non-contrast CT (in selective cases only). Following SWL treatment, the SFR was defined as ≤2mm fragments in hospital-1 (126 patients treated between March and September 2010) and no residual fragments in hospital-2 (202 patients treated between January 2012 and August 2013).
Results: The stone size was similar in both hospitals (around 7.5 mm). Stone location was comparable as shown in Table 1. Successful fragmentation was achieved in 50% and 61% in hospital-1 and -2 respectively. However the variable definition of success rate meant the results differed, the SFR being 43% in hospital-1 and 26% in hospital-2 (Table 2).
Conclusions: Although SWL achieves a relatively high stone fragmentation rate, the stone free rate is variable depending on the definition used. The stone free level (Table 2) should be used for defining the level of SFR.

UP.569

Expression of Osteopontin and Fetuin-A Associated with Sex Hormones in Ethylene Glycol-Treated Rats with Calcium Oxalate Nephrolithiasis

Oh T[1], **Kwak K**[1], Ryu D[1], Bae Y[2], Choi S[3]
[1]Samsung Changwon Hospital Sungkyunkwan University, Changwon, South Korea; [2]Ulsan Jeil Hospital, Ulsan, South Korea; [3]Kosin University Gospel Hospital, Busan, South Korea

Introduction and Objectives: Sex difference in the incidence and crystalline composition of urolithiasis in humans has been well-known phenomenon. However, the effect of sex hormones on urinary stone formation remains undetermined. We investigated the association of sex hormones with expression of renal osteopontin and urine fetuin-A in ethylene glycol (EG) treated rats.
Materials and Methods: Sprague-Dawley rats were divided into 6 groups, each containing 8 rats. Two groups of rats were left untreated and served as male and female controls. Another 4 groups of rats were fed a 1% EG lithogenic diet for 4 weeks. Among them, 2 groups were male and female rats and 2 groups were castrated. We analyzed 24-hour urine samples for urinary constituents, such as calcium, oxalate, citrate, uric acid, creatinine clearance and fetuin-A. The kidneys were examined for crystal deposit by histological examination and for osteopontin expression by immunohistochemical staining.
Results: Oxalate excretion increased and citrate excretion decreased significantly in male and female rats fed EG. In the male rats, oxalate excretion was significantly greater in intact male rats fed EG than in castrated male rats with EG, on the contrary, citrate excretion was not different. Crystal deposits in kidney were stronger in intact male rats fed EG than in castrated male rats with EG. In female rats, oxalate excretion was significantly higher in EG diet rats with castration than in those without castration. Citrate excretion in both groups was not significantly different. Castrated female rats with EG diet showed more crystal deposits than intact female rats with or without EG diet. Renal osteopontin and urine fetuin-A expression correlated with crystal deposits in kidney (Spearman's r=0.676 and 0.511, respectively; p<0.0001).
Conclusions: Testosterone appears to promote whereas estrogen inhibit calcium oxalate stone formation by modulating urinary oxalate excretion in EG treated rats. The exposure to calcium oxalate crystal induces osteopontin and fetuin-A which may have a significant role in calcium oxalate nephrolithiasis.

UP.570

The Microgravitational Effects of Space Flight on the Urological System

Drinnan N, Ni Raghallaigh H, Crawford R, Chetwood A, Emara A, Bott S, Barber N
Frimley Park Hospital, Surrey, UK

Introduction and Objectives: Space travel results in short and long-term effects on the human body. There is a bone mass loss rate of 3% per month, muscle atrophy at 5% per month and oxygen consumption reduced by 25%. The change in urinary composition, resulting in stone formation, is the commonest urinary condition caused by microgravity.
Materials and Methods / Results: Bone loss is manifest by negative calcium balance. Osteoporosis results, with increased calcium and phosphate excretion, fractures, weakness and urinary stones. Dietary changes, with increased protein and salt (in food preservatives), along with decreased urine volumes and increased urine saturation are all factors. Increased risk for calcium oxalate and phosphate stones during flight, and increased risk for oxalate and uric acid stones immediately after flight also exist – attributed to nutrition, low urine volumes and higher urinary pH. The higher incidence of struvite stones has also been investigated. Nanobacterial colonies in the nucleus of stones suggest that bacteria participate in stone formation as well as growth. Nanobacteria (NB) produce carbonate apatite – considered to be a nidus initiating stone formation. One NASA research project assessed stone formation in astronauts by examining NB cultures in High Aspect Rotating Vessels which were designed to stimulate microgravity and showed NB's multiplied 4.6 x faster concluding that they had increased multiplication in microgravity.
Conclusion: Space flight affects the urological system mainly by increasing stone formation. Negative pressure chamber treadmills, alkali therapy and aggressive hydration are recommended countermeasures but the importance of pre-flight screening cannot be overemphasized.

UP.571

The Usefulness of Stone Density and Patient Body Mass Index in Predicting Extracorporeal Shock Wave Efficiency

Abbar M, Janane A, Dakkak Y, Ghadouane M, Ameur A
Dept. of Urology, Mohammed V Military Hospital of Rabat, Rabat, Morocco

Introduction and Objectives: To determine the role of stone density and skin-to-stone distance (SSD) by non-contrast computed tomography of the kidneys, ureters and bladder (CT-KUB) in predicting the success of extracorporeal shock wave lithotripsy (ESWL).
Materials and Methods: We evaluated 267 patients who received ESWL for renal and upper ureteric calculi measuring 5-20mm, over a 50 month period. Mean stone density in Hounsfield units (HU) and mean SSD in millimeters (mm) was determined on pre-treatment CT-KUB at the CT workstation. ESWL was successful if post-treatment residual stone fragments were ≤ 3 mm.
Results: ESWL success was observed in 63.5% of the patients. Mean stone densities were 513 ± 163 and 795 ± 101 HU in E5WL successful and failure groups, respectively; this was statistically significant ($p < 0.001$, student's t-test). Mean SSD were 11.2 ± 1.8 and 12.4 ± 2.2cm in ESWL successful and failure groups, respectively, this was not statistically significant.
Conclusion: This study shows that stone density can help in predicting the out-come of ESWL. We propose that stone densities < 500 HU are highly likely to result in successful ESWL. Conversely, stone densities > 800 HU are less likely to do 50. This should be accounted for when considering ESWL.

UP.572

Study of Bone Mineral Density in Patients with Calcium Stones Depending of Lithogenic Activity

Arrabal-Martín M[1], Valderrama-Illana P[1], Poyatos-Andujar A[1], Quesada-Charneco M[1], Abad-Menor F[1], Giron-Prieto M[1], Cano-García M[2], De Haro-Muñoz T[1], Arias-Santiago S[1], **Arrabal-Polo M**[1]
[1]San Cecilio University Hospital, Granada, Spain; [2]Morales Meseguer University Hospital, Murcia, Spain

Introduction and Objectives: The lithogenic activity, defined in the Urolithiasis Process Integrated of Andalusia Government in 2012, is classified according to the lithiasic recurrences and new episodes like mild, moderate and severe activity. This allows us to classify patients and to study the metabolic and bone disorders in terms of stone activity. The objective was to analyze the differences in relation to bone mineral density between moderate and severe lithogenic activity and the degree of compliance with the cutoffs previously established by our group in other investigations.
Materials and Methods: From January to December 2013, a total of 92 patients with calcium stones and moderate or severe lithogenic activity were included in the study. Percentage of osteopenia / osteoporosis, differences between bone mineral density loss dependent of lithogenic activity and proportion of patients with values above cutoff regarding were analyzed: β-crosslaps> 0.311; Osteocalcin> 13.2; β-crosslaps/osteocalcina> 0.024; Calciuria 24 h> 206.6; fasting calcium / creatinine in urine> 0.105. Statistical analysis with SPSS 17.0 program was performed.
Results: The mean age was 44 ± 11.8 years, 45 males and 47 females, 69 with moderate and 23 patients with severe lithogenic activity. A total of 59.8% of patients had osteopenia / osteoporosis in the lumbar spine, which was reduced to 38% and 32.6% in the femoral neck and hip respectively. After dividing the patients according lithogenic activity, the percentage of osteopenia / osteoporosis was greater and statistically significant at the lumbar spine ($p = 0.01$) and femoral neck ($p = 0.03$) in patients with severe lithogenic activity respect moderate activity. Over 60% of patients presented values above previously established in one or more of the parameters previously discussed in other publications of our group included in material and methods.
Conclusion: Patients with calcium stones and severe lithogenic activity present more loss of bone mineral density. In general, bone mineral density is a factor to be considered in patients with recurrent calcium nephrolithiasis that must to be studied and monitored, due to it is altered in a significant percentage of these patients.

UP.573

Bone Mineral Density in Women with Recurrent Calcium Stones: Results of a Case-Control Study

Arrabal-Polo M[1], Valderrama-Illana P[1], Poyatos-Andujar A[1], Abad-Menor F[1], Quesada-Charneco M[1], Girón-Prieto M[1], Cano-Garcia M[2], Arias-Santiago S[1], Arrabal-Martin M[1]
[1]San Cecilio University Hospital, Granada, Spain; [2]Morales Meseguer University Hospital, Murcia, Spain

Introduction and Objectives: In the pathogenesis of calcium nephrolithiasis, different factors are involved and predispose to present stones. In recent years, our research group is studying the relationship between recurrent calcium stones and bone mineral density loss in patients without changes in mineral metabolism hormones. The calcium lithiasis which is accompanied by fasting hypercalciuria is associated in a significant percentage of patients with loss of bone mineral density. The objective of this study was to analyze the loss of bone mineral density in middle-aged women with recurrent calcium stones compared control group.
Materials and Methods: A case-control study, with an inclusion period between January to December 2013, including 47 patients with stone disease (Group 1) and 41 patients without stones or control group (Group 2) were performed. Patients included without alteration of bone metabolism or consumption drugs that may interfere with bone mineral density and/or lithogenesis. Blood and urinary metabolic study of patients and bone densitometry were performed and the results were analyzed with the SPSS 17.0 program.
Results: After performing univariate statistical analysis we observed that there were statistically significant differences in age (42.6 ± 12.7 Group 1 vs. 52.6 ± 7.8 Group 2, $p = 0.001$), lumbar spine T-score (-1.4 ± 1.1 Group 1 vs. -0.7 ± 1.3 Group 2, $p = 0.03$), lumbar spine Z-score (-0.7 ± 1 Group 1 vs. 0.1 ± 1.3 in Group 2, $P = 0.002$), hip Z-score (-0.3 ± 0.8 Group 1 vs. 0.1 ± 1 Group 2; $p = 0.02$) and femoral neck Z-score (-0.4 ± 0.7 Group 1 vs. 0.05 ± 1 Group 2, $p = 0.04$). In the multivariate analysis, we observed that age is not an independent factor associated with bone mineral density therefore does not affect the loss of bone mineral density. We observed no significant differences in relation to lithogenic markers.
Conclusion: Patients with recurrent calcium stones have an increase of bone mineral density loss, not age-related or hormone bone metabolism, possibly an intrinsic bone disorder in which bone resorption predominates.

UP.574

Chronic Treatment with Cystone for Small Pyelocaliceal Stones

Multescu R, Geavlete B, Georgescu D, Satalan R, Geavlete P
Dept. of Urology, "Saint John" Emergency Clinical Hospital, Bucharest, Romania

Introduction and Objectives: Medical treatment of small pyelocaliceal stones may be a very difficult task. The aim of our study was to determine the value of multiherbal extract Cystone in the treatment of this pathology.
Materials and Methods: We analyzed 50 patients treated in our department for pyelocaliceal stones between 4 and 6 mm. A total of 38 patients had single stones and 12 had between 2 and 5 lithiasic fragments. All patients received treatment with multiherbal formulation Cystone 2 tablets twice daily and were reassessed after 3 months with ultrasonography.
Results: Among the 38 patients with single stones, in 9 patients no lithiasic fragments were identified after the treatment, while in 20 cases their dimensions were reduced. In 6 patients the stones had the same diameter while in 3 patients the dimensions increased. In one case a second stone was identified. Among the 12 cases with multiple stones, decrease of the

diameter of at least one fragment occurred in 8 cases, while disappearance of at least one fragment was encountered in 2 cases.
Conclusions: Cystone treatment in patients with small uncomplicated pyelocaliceal stones may be an effective alternative. Taking into consideration the endourologic treatment costs of these patients underlines the importance of having such alternatives.

UP.575
Conservative Treatment in Patients with Ureteral Stones and Renal Colic
Multescu R, Georgescu D, Satalan R, Geavlete B, Geavlete P
Dept. of Urology, "Saint John" Emergency Clinical Hospital, Bucharest, Romania

Introduction and Objectives: Renal colic is one of the main causes of patients' presentation in the ER. The aim of our study was to evaluate the particularities of these patients and efficacy of medical expulsive therapy.
Materials and Methods: This study included the patients presented into ER with renal colic between January 2013 and December 2013. Patients who benefited of medical expulsive therapy and their further evolution were analyzed.
Results: A total of 5132 patients came to the ER with renal colic, of which 4054 (82%) underwent medical expulsive therapy with anti-inflammatory drugs, analgetics and alfa-blockers: 3108 after evaluation of calculi characteristics and 946 on demand. A total of 851 patients were lost for follow-up. In 1002 cases multiherbal extract Cystone was associated to the treatment both during the acute period but also as a chronic treatment in the following period. From the 3203 patients, 480 necessitate a surgical procedure for urolithiasis during the following month: 112 from the Cystone group (11.2% of the Cystone treated patients) and 368 from the non-Cystone group (17.5%). A supplementary number of 61 patients necessitate a surgical procedure for urolithiasis until the end of the year: 3 from the cystone group (0.3%) and 58 from the non-Cystone group (2.8%).
Conclusions: Medical expulsive treatment is an efficient method to effectively treat a renal colic. Association of Cystone seems to improve the chances of stone expulsion, the differences increasing in the long run.

UP.576
Comparison of Treatment Outcomes According to Output Voltage during Shockwave Lithotripsy for Ureteral Calculi: A Prospective Randomized Multicenter Study
Park J[1], Woo S[1], Kim H[2], Hong S[3], Yang H[4], Chung H[5], Yun S[6]
[1]Eulji University Hospital, Daejeon, South Korea; [2]Konyang University College of Medicine, Daejeon, South Korea; [3]Dankook University College of Medicine, Cheonan, South Korea; [4]Soonchunhyang University Cheonan Hospital, Cheonan, South Korea; [5]Konkuk University, Chungju, South Korea; [6]Dept. of Urology, College of Medicine, Chungbuk National University, Cheongju, South Korea

Introduction and Objectives: Despite prior studies which investigated the effects of fixed versus escalating voltage output on stone-free rates (SFRs) during shockwave lithotripsy (SWL) for renal calculi, there are few studies for ureteral calculi (UC). We investigated whether fixed versus escalating voltage treatment strategy affects SFRs in UC.
Materials and Methods: A prospective randomized multicenter trial was conducted with 120 patients 18 years or older who were referred for acute renal colic and diagnosed with a single radiopaque UC < 15mm, and were randomized into Group A (n=60, constant 13kV, 3000 shock wave, 2Hz) or B (n=60, 11.4kv-12.0kv-13kv per 1000 shock waves, 2Hz). *In situ* SWL was performed using the Sonolith® Praktis (EDAP TMS) as an outpatient procedure. Patients were evaluated at 1 week after SWL by KUB and urinalysis, and if residual stones were observed at follow-up, repeat SWL was performed. The primary endpoint was SFR at 1 week after SWL. Secondary endpoints were post-SWL visual pain score (VPS), oral analgesic requirements during 1 week, and cumulative SFRs after 2nd and 3rd sessions of SWL.
Results: The two groups were well balanced in terms of baseline characteristics including past stone history, pre-SWL VPS, stone location and size (A; 6.27±1.92 versus B; 6.30±2.13 mm). All patients were evaluated at week 1, and SFRs were not different between the groups (A; 61.7% versus B; 68.3%, p=0.566). Analyses stratified by stone location (proximal versus distal) showed that the groups did not differ in SFRs in proximal UC (p=0.487), but Group B had a relatively higher SFR versus Group A in distal UC (81.0% versus 50.0%, p=0.052). Meanwhile, the groups did not differ in SFRs in the analysis stratified by stone size (<6mm versus ≥6mm). Secondary endpoints were similar between the groups. On multivariate logistic regression analysis, only stone size was a significant predictor for stone-free status (p<0.001, OR=1.649), whereas SWL power strategy was not (p=0.223, OR=0.587).
Conclusion: In our study including homogeneous patient populations with UC, escalating voltage power during SWL did not provide superior stone fragmentation compared with conventional fixed voltage strategy. Further studies are needed to elucidate the exact mechanism.

UP.577
Pulmonary Complications in Percutaneous Nephrolithotomy with Upper Calyx Access
Demirtas A, Doganay Y, Baydilli N, Sabur V, Akınsal E, Ekmekcioglu O, Demirci D, Gulmez I
Erciyes University, Kayseri, Turkey

Introduction and Objectives: To evaluate the pulmonary complications for upper calyces accesses in patients who underwent percutaneous nephrolithotomy (PCNL) due to kidney stones in our clinic.
Materials and Methods: Data of the patients who underwent PCNL with upper calices access because of staghorn or upper calyx stones in our clinic between 2004 and 2012 were used.
Results: Upper calyx access was performed on 211 of 1180 patients that underwent PCNL. A total of 127 patients (60.1%) were male and 84 patients (39.9%) were female. Mean operative time was 107 minutes; mean fluoroscopy time was 14.6 minute, nephrostomy pick up time after surgery was 3.1 days. According to access locations, 46 (21.8%) patients had upper calyx isolated access, 80 (37.9%) patients had lower + upper calyx access, 44 (20.9%) patients, had mid + upper calyx access, 41 (19.4%) patients had lower + mid + upper calyx access. Twelve of 211 upper calyx access developed

UP.577, Table 1. Complications for Upper Calyx Access and Stone-Free Rates

Access	Number (n, %)	Fever (n, %)	Bleeding (n, %)	Extravasation (n, %)	Pneumo-hemothorax (n, %)	Stone free (n, %)
Isolated upper calyx	46, 21.8	3, 10.7	3, 12.5	0	8, 66.6	36, 22.2
Upper + lower calyxes	80, 37.9	14, 50	9, 37.5	2, 20	4, 33.3	64, 39.5
Upper + mid calyxes	44, 20.8	5, 17.8	6, 25	4, 40	0	35, 21.6
Upper + mid + lower calyxes	41, 19.4	6, 21.4	6, 25	4, 40	0	27, 16.6
Total	**211, 100**	**28, 100**	**24, 100**	**10, 100**	**12, 100**	**162, 100**

pneumo-hemothorax that was treated with chest tube. Upper calyx access complications and stone-free rates are shown in Table 1.
Conclusion: Pneumo-hemothorax is seen with substantial rate for upper calyx accesses. A compelling upper calyx access should be avoided unless it is a must and this procedure needs more attention. Our highest rate of pulmonary complications of upper calyx access may depend on the number of patients more than other studies.

UP.578
Cystone Treatment in Patients with Infectious Stones
Geavlete P, Multescu R, Georgescu D, Satalan R, Geavlete B
"Saint John" Emergency Clinical Hospital, Bucharest, Romania

Introduction and Objectives: Patients with infectious stones have an increased risk of recurrence. Various treatment alternatives such as urease inhibitors may have significant adverse events. It was advocated that multiherbal extract Cystone has an *in vitro* effect of struvite crystal growth inhibition. The aim of our study was to evaluate the effect of this treatment following surgical removal of struvite stones.
Materials and Methods: We retrospectively evaluated 48 patients with struvite stones apparently rendered stone free by retrograde flexible ureteroscopic approach or PCNL. Postoperative long term antibiotherapy was applied in all cases. Antibiotic selection was made using the data provided by culture of stone fragments. In 20 patients Cystone treatment for 3 months was associated while the rest of 18 patients received only antibiotics.
Results: Small stone fragments were identified during the 12-month follow-up in 2 patients of the Cystone group and 10 patients of the control group. Stones requiring surgical treatment were encountered in 2 patients of the Cystone group and in 4 patients of the control group.
Conclusions: Cystone may be an effective treatment in infectious stones prophylaxy associated with antibiotics. Further studies are required to prove this hypothesis.

UP.579
Oxalobacter Formigenes: Opening the Door of Probiotic Therapy for the Treatment of Hyperoxaluria
Jairath A[1], Parekh N[1], **Otano N**[1,2], Mishra S[1], Sabnis R[1], Desai M[1]
[1]Muljibhai Patel Urological Hospital, Nadiad, India; [2]Hospital Universitario de Caracas, Caracas, Venezuela

Introduction and Objectives: To determine the early effect of the administration of *Oxalobacter formigenes* in the metabolic pattern of patients with calcium oxalate stones, comparing it with potassium magnesium citrate (KMgCit).
Methods: Eighty patients were randomized to receive either 30 mEq of KMgCit or 700 millions of *O. formigenes*, both twice a day. Serum creatinine, serum uric acid, serum calcium and phosphorus, serum iPTH (if serum calcium >10.5 mg/dl) and 24 urine metabolic evaluation for various metabolites like oxalate, calcium, phosphorus, citrate, magnesium, uric acid and creatinine were evaluated at baseline and at one month after starting the treatment.
Results: In both groups hyperoxaluria was the most common abnormality followed by hypercalciuria. The incidence of hyperoxaluria decreased at one month when compared to baseline in both KMgCit (77.5% vs. 37.5%, p = 0.0006) and *O. formigenes* preparation (82.5% vs. 15%, p < 0.0001) groups, while other urinary metabolic abnormalities were similar at baseline and one month in both groups. Three patients in the KMgCit presented mild self-limited secondary symptoms.
Conclusions: When compared to KMgCit, *O. formigenes* preparation is more effective in decreasing the incidence of hyperoxaluria, opening the door to probiotic therapy as potential new weapon against hyperoxaluria.

UP.580, Table 1. Characteristics and multivariate analysis of the bladder stone group and control group

t-test	Bladder stone (n=27)		Control (n=244)		p-value
Age (y)	74.3±7.7		69.7±8.2		0.006 *
BMI (kg/m^2)	23.8±2.8		24.0±2.9		0.726
IPSS score	18.6±9.1		20.6±8.5		0.392
TRUS					
Total volume (g)	65.0±36.7		47.5±26.5		0.003 *
Transitional volume (g)	37.6±25.1		25.1±18.8		0.002 *
IPP (mm)	11.5±10.0		3.4±5.5		<0.001 *
Uroflow parameters					
Qmax (mL/s)	7.1±3.3		10.6±6.3		0.010 *
VV (mL)	121.3±75.0		166.3±116.5		0.063
PVR (mL)	111.8±153.8		73.9±81.5		0.053
Urodynamic study					
Pdet Qmax (cmH2O)	52.9±27.6		43.1±27.6		0.254
Pdet max (cmH2O)	63.1±27.4		56.6±31.8		0.503
BOOI	37.8±30.8		23.1±30.6		0.124
Multivariate analysis	**B**	**S.E.**	***p*-value**	**Exp (B)**	**95% CI**
Age	0.085	0.037	0.020 *	1.089	1.014-1.170
TRUS – total	0.009	0.007	0.205	1.009	0.995-1.024
TRUS – IPP	0.136	0.034	<0.001 *	1.145	1.072-1.223
Uroflow – Qmax	-0.143	0.061	0.019 *	0.866	0.768-0.977

BMI: body mass index, IPP: intravesical prostatic protrusion, Qmax: maximum uroflow rate, VV: voided volume, PVR: post-void residual urine volume, Pdet Qmax: detrusor pressure at maximum flow, Pdet max: maximum detrusor pressure during voiding, BOOI: bladder outlet obstruction index

UP.580

Intravesical Prostatic Protrusion Is a Risk Factor for Bladder Stone Formation in Patients with Benign Prostatic Hyperplasia

Kim J[1], Chae J[1], Yoon C[1], **Kang S**[2], Park H[1], Kim J[2], Moon D[1]
[1]Dept. of Urology, Korea University Guro Hospital, Seoul, South Korea; [2]Dept. of Urology, Korea University Anam Hospital, Seoul, South Korea

Introduction and Objectives: To assess the risk factor that influences bladder stone formation in patients with benign prostatic hyperplasia (BPH).
Materials and Methods: We retrospectively reviewed the data of 271 consecutive patients with BPH who underwent transurethral resection of the prostate (TURP). Patients were classified into two groups based on the presence of a bladder stone: patients in Group 1 had a bladder stone and patients in Group 2 did not. Univariate analysis was performed to determine the association between bladder stone formation and the patients' age, body mass index (BMI), IPSS, total prostate volume (TPV), transitional zone volume (TZV), IPP, uroflow and urodynamic parameters. Patients excluded from the study were those with prostate cancer, foreign bodies in the bladder, urinary tract infection, urethral stricture, bilateral hydronephrosis, renal impairment or neurogenic bladder.
Results: The overall rate of bladder stone formation in patients with BPH was 9.9% (27/271). The mean TPV was 65.0 ± 36.7 g in Group 1 and 47.5 ± 26.5 g in Group 2. The mean IPP score was 11.5 ± 10.0mm, and 3.4 ± 5.5mm and the Qmax was 7.1 ± 3.3mL/s and 10.6 ± 6.3mL/s in Group 1 and Group 2, respectively. The patients' BMI, IPSS, and urodynamic parameters did not significantly differ between the two groups. The patients' age, TPV, TZV, and IPP were all significantly higher and the Qmax was significantly lower in Group 1 than in Group 2 (Table 1). Multivariate analysis revealed that age (HR=1.089, p=0.020), IPP (HR=1.145, p<0.001), and Qmax (HR=0.866, p=0.019) significantly affected bladder stone formation in patients with BPH.
Conclusion: This study demonstrated that older age, longer IPP, and lower Qmax are independent factors that influence bladder stone formation in patients with BPH.

UP.581

Cystine Stone: Experience of 14 Cases from a Single Center

Park H
Asan Medical Center, Seoul, South Korea

Introduction and Objectives: To evaluate clinical courses and outcomes of patients with cystine stones from the experience of a single institution.
Materials and Methods: We reviewed the data of 14 patients with cystine stones who visited our institution from March 1994 to July 2012. We examined age at first visit, gender, stone burden, urine pH and family history of patients and analyzed average number of repeated surgeries, stone locations, types of surgeries, medical treatment, number of recurrences as well as presence of single kidney.
Results: Mean age at first visit to our institution was 18.7 ± 6.9 years and 8 patients were males. Stone burden and mean urine pH before each surgeries were 6.7±3.2 cm2 and 6.5±0.9 respectively. There were 2 patients who replied to have family histories. Patients underwent surgeries average of 2.7 times for 23 (41.1%) cases of calyceal stones, 2 (3.6%) cases of pevis stones and 31 (55.3%) cases of ureter stones. Mean time interval of each surgeries was 29.6±17.3 months and 1 open surgery, 12 percutaneous nephrolithotomies, 25 ureterorenoscopies were performed. Potassium citrates were used in 6 patients, as well as D-penicillamines used in 3 patients continuously. Patients had average of 3.2 times of recurrence during the mean follow-up period of 60.3 months and 2 patients were with single kidneys.
Conclusions: Our data shows that patients with cystine stones have high recurrence or regrowth rates and relatively large stone burdens. Therefore, it is essential to establish adequate treatment schedule to prevent possible deterioration of renal function in these patients.

UP.582

Can Ultrasound Be a Single Diagnostic Modality in Ureteral Stone Disease

Raghavendran M, Prasad S, Kaushik V
Apollo BGS Hospitals, Mysore, India

Introduction and Objectives: We review the results of Emergency Ultrasound in acute ureteral colic patients.
Materials and Methods: Nearly sixty patients presenting with acute colic to the Emergency department who underwent Ultrasound were included in the study. Patients opting for medical expulsive therapy formed the main component of the study.
Results: Patients presenting with colic underwent ultrasound on emergent basis by a single senior consultant radiologist. Sixty patients who had mild hydroureteronephrosis without visulaisation of stone were included. Thirty four of these patients did not agree for CT scan because of the fear of radiation and cost. The rest 26 underwent CT scan. The stone in these patients was found to be in middle or lower ureter and the size was two to six millimeters. Thirty four patients, who opted for medical expulsive therapy based on the Ultrasound findings, were advised repeat Ultrasound at two weeks' time if they were asymptomatic. They were also advised CT, if troublesome symptoms persisted. Fourteen of these patients had to undergo CT due to persistent symptoms. All these patients had stones in the lower ureter with the size being two to four millimeters. The remaining twenty patients underwent repeat Ultrasound at two weeks' time. Eighteen of these patients had no hydroureteronephrosis at repeat scan. Two patients had persistent hydroureteronephrosis despite being asymptomatic and were found to have small lower ureteric stones on CT.
Conclusion: There is no doubt that CT is the diagnostic modality of choice in Ureteral stone disease. A properly performed Ultrasound in Emergency by a senior radiologist can be used as a single diagnostic modality in select group of patients. This is a useful cost saving procedure in developing countries and also is useful in patients who have fear of radiation exposure.

UP.583

Management of Renal Colic with Oral Desmopressin

Pricop C[1], **Suditu N**[1], Puia D[1], Bucuras V[2], Orsolya M[3], Radavoi G[4]
[1]Gr. T. Popa University of Medicine and Pharmacy, Iasi, Romania; [2]Victor Babes University of Medicine and Pharmacy, Timisoara, Romania; [3]University of Medicine and Pharmacy, Targu Mures, Romania; [4]Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

Introduction and Objectives: Renal colic is a common urological emergency. This symptom is caused by the increase pressure in the pyelocaliceal system secondary to obstruction of the urinary flow. Increased pyelocaliceal system pressure is correlated with higher prostaglandin (PG) E2 levels, enhanced blood flow and diuresis. Nausea, vomiting and intense pain will determine antidiuretic hormone secretion with secondary PGE2 increase production, contributing to a vicious circle of pain. The purpose of this study is to evaluate the effectiveness of desmopressin acetate tablets, an antidiuretic drug, in treating patients with acute renal colic.
Materials and Methods: Eighty-two patients, mean age 39.8 years, 53 men and 29 women, admitted to the emergency room with acute renal colic were randomly assigned in five groups to receive 60 or 120 µg sublingual desmopressin ± *30 mg Ketorolac intramuscularly* or only *30 mg Ketorolac intramuscularly*. Pain intensity was recorded using a 0-to-*10 pain intensity* visual analog scale (VAS) before drug administration and thirty minutes afterwards.
Results: At presentation, a 3 to 10 pain intensity on VAS scale was reported with a median of 8.13 points. Desmopressine was statistically significant more effective than anti-inflammatory (AINS) therapy in improvement of the visual analog scores at 30 minutes, the effect not being influenced by the desmopressine dose used; the improvement of mean visual analog scale was 4.24 points in patients treated with

desmopressin compared with 2.84 points in those treated only with AINS (p=0.01). Young patients are more likely to respond to desmopressine treatment. There were not statistically significant differences between the groups in which different doses of desmopressin (60 versus 120 μg) were used (p=0.43). There were *no* significant differences between *Desmopressin* group and desmopressin associated with AINS group in pain reduction (3.91 compared with 4.52 points on VAS scale, p=0.30).
Conclusions: This prospective study provides remarkable information about the efficacy of desmopressine on pain relief in symptomatic urinary calculi. We conclude that the simplicity and effectiveness of sublingual desmopressin tablets in treating renal colic makes this simple method a useful means of confronting a frequent and disturbing urological problem.

UP.584
Bilateral Simultaneous Ureteroscopy (BS-URS) for Stone Disease: Systematic Review of Literature
Rai B[1], Ishii H[2], Agrawal V[3], Harris M[2], **Somani B**[2]
[1]Ninewells Hospital, Dundee, UK; [2]University Hospital Southampton NHS Trust, Southampton, UK; [3]University of Rochester Medical Center, Rochester, USA

Introduction and Objectives: Bilateral simultaneous ureteroscopy (BS-URS) for management of bilateral ureteric and/or renal and or a combination of these stones can be challenging. We did a systematic review of literature to look at the role of BS-URS for management of stone disease.
Materials and Methods: We searched MEDLINE, PubMed and the Cochrane Library from January 1990 to October 2013 for results of bilateral ureteroscopy and stone treatment. Inclusion criteria were all English language articles reporting on these procedures. Where more than one paper was published from the same database the most recent paper was included. Data was extracted on the outcomes and complications and the results were analyzed.
Results: Nine studies reported on 390 patients with a male:female ratio of approximately 2:3. The age range was 11-97 years with ureteric dilatation reported in 157 patients. The stone size ranged from 6-21mm with the total stone burden from 6-59 mm. The operative time ranged from 21-137 minutes with the stone free range (SFR) from 85-98.7% that was higher for stones <1cm in size. Hospital stay ranged from 1-7 days. There were 57 (14.5%) minor (Clavien 1 or 2) complications including post-operative fever (n=16, 4%), haematuria (n=33, 8.5%) and UTI (n=8, 2%) with 32 (8%) major (Clavien 3, 4 or 5) complications including ureteric perforation or mucosal injury (n=24, 6%), ureteric stricture (n=4, 1%), urosepsis (n=2, 0.5%) and urinoma and pulmonary embolism (PE) in one patient each. There were two deaths reported (including patient with PE and urosepsis).
Conclusions: Bilateral simultaneous ureteroscopy for stone disease has a good stone clearance rate but with a complication rate, which is higher than staged ureteroscopy and a small but not insignificant risk of major complications. Surgeons performing these procedures should maintain their outcomes and patients undergoing these procedures should be appropriately counseled.

UP.584, Table 1.

NATURE OF COMPLICATION	NUMBER OF COMPLICATION
False passage/ureteral perforation/laceration	24 (6%)
Haematuria	33 (8.5%)
Urinary tract infection (UTI)	8 (2%)
Post-operative pyrexia/mild fever	16 (4%)
Severe Urosepsis	2 (0.5%) (1 Death)
Urinoma	1
Pulmonary embolism (PE)	1 (1 Death)
Ureteric stricture	4 (1%)

UP.586
The Efficacy of Tamsulosin (Tams) Alone vs. Corticosteroids Alone vs. Tamsulosin + Corticosteroids in Determining the Spontaneous Passage of Distal Ureteral Stones: Results of a Prospective Study
Brausi M[1], Giliberto G[2], Viola M[1]
[1]Dept. of Urology, AUSL Modena, Carpi, Italy; [2]Dept. of Urology, Treviglio-Caravaggio Hospital, Milan, Italy

Introduction and Objectives: The objectives of the study were to evaluate and compare the efficacy of tamsulosin alone vs. tamsulosin + prednisone vs. prednisone alone in determining the spontaneous passage of distal ureteral stones 1cm or less, to determine the number of endourological procedures saved and to observe toxicity.
Materials and Methods: From September 2008 to February 2011, 120 patients with renal colic admitted to the emergency departments of 2 urological centres were recruited in this prospective, not randomised study. The diagnosis of distal ureteral stones was obtained with x-ray of the abdomen and CT. After a signed informed consent, patients received 3 therapeutic regimens: 40 patients (Group A) tamsulosin 0.4mg/d alone, 35 patients (Group B) prednisone 25mg/d x 5 days,10mg x 5 days and 5 mg x 5 days, 45 patients (Group C) tamsulosin 0.4mg + prednisone (same schedule). Therapy was prescribed at home for 15 days in all the patients. Exclusion criteria were: diabetes, hypotension, complicated stones (fever, pionephrosis), requiring emergency endoscopic procedures. We evaluated: a) spontaneous stone passage rate; b) endo-urological procedures required (ureteroscopy + laser treatment, JJ); c) side effects.
Results: The mean patients' age was 44.7, 49.2 and 42.3 in groups A, B, C respectively. All the stones were in the distal part of the ureter. The mean diameter of the stones was: 7.3 mm (3-10mm), 4.2 mm (2.7-7.5mm), 7mm (4-10mm) in groups A, B, C respectively. Three patients in Group A and 3 patients in Group B were lost to follow-up. The spontaneous passage of the stone was observed in: 67.5% (23/37), 34.2% (12/35) and 92.8% (39/42) in groups A, B, C respectively. Endourological procedures (ureteroscopy with laser litotripsy and JJ) were used in 33.5%, 65%, and 7.8% in groups A, B, C. Three out of 37 patients in Group A (8.1%) and 2/42 patients in Group C (4.7%) had to stop medical treatment for hypotension and malaise vs. 0 in Group B.
Conclusions: The combination therapy (tamsulosin + prednisone) resulted in the most effective treatment for spontaneous passage of distal ureteral stones (92.8%) and determined a significant reduction in endourological procedures (8% vs. 33%-72%). Side effects from therapy were observed in 8% (Tamsulosin alone) and 5% (Tamsulosin + Prednisone).

UP.587
Association between Urinary Calculi and Acute Coronary Syndrome: A Case-Control Study in Taiwan
Wu W, Hung S, Chung S
Dept. of Surgery, Div. of Urology, Far Eastern Memorial Hospital, Ban Ciao, Taipei, Taiwan

Introduction and Objectives: The increased prevalence of acute coronary syndrome (ACS) has been reported in patients with obesity, diabetes, hyperuricemia and chronic inflammation seems to involve in this linkage. Stone disease is associated with systemic metabolic and hormone disorders which shared common risk factors of ACS; however, limited studies have investigated that association between ACS and urinary stones (US). The aim of this study is to estimate the risk of ACS during a five-year

follow-up period after the first ambulatory care visit for the treatment of US using nationwide, population-based data and a retrospective case-control cohort design in Taiwan.
Materials and Methods: We identified 30,142 patients with US as the study group and randomly selected 121,768 patients as the comparison group. Each patient was individually tracked for five years to identify all those who developed ACS during the follow-up period. Cox proportional hazards regressions were performed to calculate the hazard ratios (HRs) of ACS for the 2 groups. Main outcome was measured. Stratified Cox proportional hazard regressions were performed as a means of comparing the five-year ACS-free survival rate for the two cohorts.
Results: Of the sampled patients, 1011 ACS events (10.0 per 10,000 person-years) developed within the five-year follow-up period, that is, 275 events (13.4 per 10,000 person-years) from the study cohort and 736 events (9.1 per 10,000 person-years) developed in patients from the comparison cohort. The log rank test indicated that patients with UC had significantly lower five-year ACS-free survival rates than those in the comparison cohort ($p<0.001$). After adjusting for the patient's monthly income, occupation, hypertension, diabetes, hyperlipidemia, cerebrovascular accident, chronic obstructive pulmonary disease, end-stage renal disease and urinary tract infection, patients with UC were more likely to have ACS during the five-year follow-up period than patients in the comparison cohort (HR=1.22, 95% CI = 1.05-1.40, $p<0.001$). A sub-analysis revealed that younger (age < 49 years) patients are at higher risk to develop ACS (HR=1.76, 95% CI = 1.33-2.33, $p<0.001$).
Conclusion: These results suggest that US patients with a younger age is associated with increased risk of ACS event.

UP.589

Is Ultrasound Scan a Useful Imaging in our Day-to-Day Renal Colic Approach?

Patruno G[1], Wadhwa K[2], Germani S[1], Iacovelli V[1], Vespasiani G[1], Miano R[1]
[1]Dept. of Urology, University of Rome Tor Vergata, Rome, Italy; [2]Dept. of Urology, Addenbrookes' Hospital, Cambridge, UK

Introduction and Objectives: Urinary lithiasis is one of the most common diseases in our society. The aim of our study was to investigate if, in the age of spending review and global economic crisis, the relatively cheap renal ultrasound is a reliable diagnostic instrument in patients affected by renal colic.
Materials and Methods: After ERB approval, we enrolled 300 consecutive adult patients who came to our Clinic from Emergency Department after a colic. Gender, age, history of stones, imaging and site of stone were collected.
Results: Of all the patients, 193 (64%) were male (M) and 107 (36%) female (F). The mean age was 42.5 y (range 18-79 y). There were 154 pts (51.3%) who had history of renal colic: 100 pts (51.8%) in Group M and 54 (50.5%) in Group F; 290/300 pts had a kidney ultrasound scan; 162/290 (55.8%) showed signs of ureteric obstruction. Of those, 147 (90.7%) had ureteric stones (spotted on the ultrasound), 110 had hydronephrosis and 37 did not. There were 93/147 pts (63.2%) who had distal ureteric stones, 54 (36.7%) had proximal stones. Only 30 pts (10%) underwent CT scan as second line imaging, of which 15 were positive for calculi (8 proximal and 7 distal).
Conclusions: In our daily practice, ultrasound scanning is a fundamental step in the diagnosis of renal colic. When doubtful, a CT scan can still be performed. In our experience a proper US scan can be diagnostic in up to 90% of the ureteric stones.

UP.590

Non-Contrast Computer-Assisted Tomography (CT) Features to Predict Risk of Urosepsis in Patients with Urinary Tract Stones

Taylor L, Omar A, Datta A, Almallah F, Ganta S
Walsall Manor Hospital, Walsall, UK

Introduction and Objectives: Urosepsis is a well-recognized complication of urinary tract calculi. Widespread antibiotic usage is leading to increasingly resistant organism, compromising patient care. Therefore predicting those patients with renal tract calculi, who are at risk of developing urosepsis, would mean more targeted antibiotic therapy and reduction in mortality. This study aims to look at the changes present on non-contrast CT in patients with urosepsis to detect signs that may assist in identifying those patients at risk of developing urosepsis from urinary tract calculi.
Materials and Methods: Retrospective analysis of patients with urosepsis over a 3-year period. Data were collected on demographic, culture results, and results of non-contrast CT. Renal pelvis thickening [grade 1 – no thickening; grade 2 </= 2mm; grade 3 - <5mm but >2mm; grade 4 - >5mm], renal pelvis contents, parenchymal and peri-renal findings on CT were recorded.
Results: Fifty four patients identified with urosepsis over 3-year period. Thirty two percent of patients had significant findings on non-contrast CT. Hydronephrosis with associated changes in renal pelvis wall thickness/peri-renal fat changes was most common abnormality noted.
Conclusion: Parenchymal changes around urinary tract calculi (renal pelvis thickening / peri-renal fat changes) may be a feature of micro-abscess development in patients with symptoms of pyelonephritis. Non-contrast CT is the gold standard investigation for urinary tract calculi and predicting those patients at risk of urosepsis using these findings may lead to improved detection and earlier management of patients at risk of urosepsis.

UP.591

Retroperitoneoscopic Ureterolithotomy Using the Method 3D Reconstruction of Operation Zone Agreed with the Patient

Dubrovin V[1], Bashirov V[1], Egoshin A[1], Furman Y[2], Rozhentsov A[2], Yeruslanov R[2], Kudryavtsev A[2]
[1]Republic Clinical Hospital, Yoshkar-Ola, Mari El Republic, Russia; [2]Volga State University of Technology, Yoshkar-Ola, Mari El Republic, Russia

Introduction and Objectives: The problem of choosing minimally invasive endoscopic surgical access for gasless single port or with gas insufflation retroperitoneoscopic ureterolithotomy is solved. The decision is based on the method of presurgery planning grounded on matching the patient with a 3D model of the zone of surgical interest reconstructed according to the results of tomographic examination.
Materials and Methods: We used hardware-software complex (HSC) for virtual modeling of the surgery zone and choosing the optimum points for minimally invasive surgical access. The complex consists of a PC, original software and mechanical 3D digitizer. The HSC allows for the formation of a virtual 3D model of a patient according to the results of tomography examination and to choose optimum surgical access. The original method of matching the system of coordinates of a virtual model with the patient was offered.
Results: Seventeen patients (8 men and 9 women) with the calculus in the upper part of ureter were realized retroperitoneoscopic ureterolitotomy with applying the method of computer optimization of minimally invasive surgical access. Mean age of the patients was 39.5 (25 - 56) years old. According to computer tomography, the calculi averaged 9 (7 - 14) mm in size. The surgery lasted 39.5 (25-55) minutes. Blood loss was 50.0 (10-90) ml. Healing by first intention was registered with all the patients. The hospitalization time was 5.5 (4-7) days. There were neither any complications or difficulties nor conversions from the incorrectly chosen surgical access.
Conclusions: The choice of the optimum surgical access according to the results of 3D reconstruction of operation zone agreed with the patient was effective in cases of gasless single port and with gas insufflation retroperitoneoscopic uretrolitotomy. The suggested approach possesses wide practical potential for development and is valuable in the process of training of novice surgeons.

UP.593

Retrograde Intrarenal Holmium Lithotripsy versus Percutaneous Nephrolithotripsy in the Management of Kidney Stones

Dalva İ, Akan H, Yıldız Ö
Dept. of Urology, Bayindir Hospital, Ankara, Turkey

Introduction and Objectives: The gold standard for removal of renal Stones more than 2cm is percutaneous nephrolithotripsy (PCNL). The indications for retrograde intrarenal surgery (RIRS) have been extended due to recent improvement in endoscopic technology. In this study we compare the results of PCNL and RIRS in the treatment of <3 cm kidney Stones.
Materials and Methods: Between 2012 and 2014, 75 patients who had kidney Stones <3 cm in diameter were treated with RIRS. The outcomes of these patients were compared with 24 patients who underwent PCNL. Comparisons were made in size, operative time, hospitalisation stay, Stone free rate, blood transfusion and complications.
Results: In the PCNL group, Stone free rate was 91% (22/24). There is no need for any other intervention. After RIRS procedure, 68 of 75 patients (90%) were completely Stone free at one month. One patient needed an additional RIRS procedure resulting in an overall success rate of 92% (NS). Two patients had asymptomatic residual fragments <7 mm in the lower pole of the kidney, and these patients had been followed with ultrasonography of the kidney. Operative time was 75 minutes and 124 minutes for PCNL and RIRS respectively ($p<0.05$). Hospitalisation stay was 4.5 and 1.3 days for PCNL and RIRS respectively ($p<0.05$). For complications, hemorrhage necessitated transfusion in 3 patients and necessitated arterial embolisation in one patient who were treated with PCNL. Sepsis in one patient and perirenal hematom in one patient who were treated with RIRS. The overall Stone free rates and complication rates for PCNL were higher, but the differences were not statistically significant. Operative time was significantly longer in the RIRS group, and postoperative hospital stay was significantly longer in PCNL group.
Conclusion: PCNL and RIRS are safe and effective methods for <4 cm kidney Stones. RIRS may be an alternative therapy to percutaneous nephrolithotripsy, with acceptable efficacy and low morbidity for <3 cm kidney Stones especially in high risk patients.

UP.594

Treatment of Urolithiasis with Ureteroscopic Lithotripsy in Kosovo

Haxhiu I[1], Quni X[1], Haxhiu A[2], Aliu-Quni H[3], Haxhiu E[4], Arifi H[2], Haxhiu R[5], Ahmeti H[6]
[1]Dept. of Urology, University Clinical Center of Kosovo, Prishtina, Kosovo; [2]Plastic Surgery, University Clinical Center of Kosovo, Prishtina, Kosovo; [3]Gynecology and Obstetric, University Clinical Center of Kosovo, Prishtina, Kosovo; [4]University of Kosovo Faculty of Medicine, Prishtina, Kosovo; [5]Stomatology, University of Rezonanca, Prishtina, Kosovo; [6]Pediatric Surgery, University Clinical Center of Kosovo, Prishtina, Kosovo

Introduction and Objectives: We represent the treatment of urolithiasis with ureteroscopic lithotripsy in our Clinic, during the period 2009 – 2013, through rigid URS.
Materials and Methods: The material is taken from the protocol of the Urologic Clinic in UCCK. During these five years although lacking the basic material such as: the lithotripsy probe, breaking the uroteroscopic light, with many interruptions in working process for months and even years, we have performed 118 ureteroscopic lithotripsies. In the analyses has been included: the gender, the attacked side, ordination of tamsulosine, and applying of ureteral stents (double "J") and the period of stone cleaning.
Results: We have analyzed the ureteroscopic lithotripsies which were performed inside these five years (2009- 2013 in our Clinic). Of these 118 cases, 56 or 47.45% were males; 62 or 52.54% were females; the right side was attacked in 56 cases or 47.45%; the urolithiasis in the left side was found in 44 cases or 37.28%; meanwhile the urolithiasis in both sides was found in 8 cases or 6.77%. We have also analyzed the stenting of the ureters (double "J") and through our analyses we have found that the routine application of stents is not preferred and is even harmful (taking more time to eliminate the crushed particles of stones), and also "re intervention" for removing them later.
Conclusions: We can conclude that ureteroscopic lithotripsy is a preferred choice for treating ureterolits sized until 1 cm, especially those located in the middle and lower part of the ureter. From our analyses we can conclude that the broken ureterolits can be eliminated easier and faster in females compared to males (shorter urethra?), there is no need for routine application of ureteral stents (double "J") and the ordination of Tamsulosine facilitates elimination of microliths and pain during this elimination. The average cleaning period from stones is also analyzed. It results to last somewhat longer in males, 21 days, compared to 17 days lasting in females. The sample of patients using Tamsulosine and those not using Tamsulosine is also analyzed. Patients using 0.4 mg Tamsulosine once daily have a lower time of elimination (14 days) and complain less about pain.

UP.595

Evaluation of the Results of Dornier Compact Sigma Machine in the Treatment of Renal Calculi

Mahmoud M, Abdelazim A, Abozaid H, Abdellatif A
Al Azhar University Hospitals, Cairo, Egypt

Introduction and Objectives: The aim of this work is to evaluate the results of the Dornier Compact Sigma Machine in the treatment of patients having renal calculi.
Materials and Methods: This study includes 145 patients having renal stones who are candidates for ESWL were treated at Al Hussein University Hospital, from August 2010, including 90 males and 55 females, ranging in age from 2 years to 68 years old (mean age: 37.3 years).
Results: The overall success rate was 85.5%. The stone-free rate for stones of < 10 mm was 100%, for 11–20 mm was 92.2%and for > 20 mm was 45.5%. The stone-free rates for lower, upper, middle calyceal and renal pelvic calculi were 72.3%, 84.6%, 90.9% and 93.7%, respectively. Post SWL Complications, renal colic, transient gross haematuria lasting 24 hours or less and steinstrasse in (4%) of cases.
Conclusions: The size, position, and density of calculi had a significant impact on the outcome after SWL. Significant stone clearance was achieved in patients with pelvic stone (less than 20 mm). Dornier Compact Sigma Machine system is one of the effective means of stone disintegration.

UP.596

Evaluation of the Results of Dornier Lithotripter S II System in the Treatment of Renal Calculi

Mahmoud M, Ramadan M, Mabrok M, Gomaa A, Helaly I
Al Azhar University Hospitals, Cairo, Egypt

Introduction and Objectives: The aim of work is to evaluate the efficacy and safety of a third generation lithotripter (Dornier lithotripter S II system) in the treatment of renal calculi.
Materials and Methods: One hundred patients having renal stones who are candidates for SWL were treated at Bab El-Shaa'rya University Hospital, from April 2010 to March 2011, they were 54 males and 46 females, ranging in age from 2.5 years to 67 years old (mean age: 40.2 years).
Results: The initial fragmentation rate was 96%. The stone-free rate for stones < 10 mm was 100%, for stones 11-20 mm was 87.6% and 75% for those having renal stones > 20 mm. The overall stone-free rate 3 months after lithotripsy was 87%. After single session of lithotripsy, 48 patients (48%) were stone-free. To render patients stone-free after lithotripsy, PNL were needed in only 6 cases (6%). The stone-free rates for lower, upper, middle calyceal and renal pelvic calculi were 84%, 83.3%, 85.7% and 88.7%, respectively. Post SWL Complications, included renal colic in (42%), Transient gross hematuria lasting 24 hours or less occurred in (33%); steinstrasse in (4%) of cases.
Conclusions: The size, position, and number of calculi have a significant impact on the outcome after SWL. Significant stone clearance

was achieved in patients having single pelvic stone (10-20 mm). Dornier lithotripter S II system is one of the effective and safe means of treating renal stones.

UP.597

A New Convenient Technique for Anterograde Insertion of Double-J Stent in Laparoscopic Ureterolithotomy

Oh B[1], Kim J[2], Yoo D[2], Kim M[3], Lim D[4], Jeong H[5], Park S[2], Noh J[2]
[1]Dept. of Urology, Gwangju Veterans Hospital, Gwangju, South Korea; [2]Dept. of Urology, Kwangju Christian Hospital, Gwangju, South Korea; [3]Dept. of Urology, Chonbuk National University Medical School, Jeonju, South Korea; [4]Dept. of Urology, Chosun University School of Medicine, Gwangju, South Korea; [5]Dept. of Urology, Wonkwang University School of Medicine, Iksan, South Korea

Introduction and Objectives: Stenting after laparoscopic ureterolithotomy is difficult because of the curls and pliability of the double-J stent. Anterograde placement of the double-J stent during laparoscopic ureterolithotomy is technically, demanding and time consuming. We report a new method to anterograde insertion of double-J stent made of two modified guidewires before the operation and compare the method with the other methods introduced in the literature.
Materials and Methods: We conducted a retrospective study between March 2009 and September 2013 on 54 patients who underwent laparoscopic urterolithotomy. All patients were operated on using the new technique of stenting the ureter during laparoscopic ureterolithotomy by modifying the guidewire. To make the procedure easier, we have devised a double-J stent, closed at both ends. For this procedure, two guidewires have to be used. We measure the distance from the urinary bladder to the stone by abdomen CT and also measure the distance from the renal pelvis to the stone. Then, we mark the location of the sidehole of the double-J stent for guidewire insertion by the length that we measured previously. We measure the length from the upper end of the stent to the sidehole and again measure the length from the lower end of the stent to the sidehole which was already marked. We cut the guidewire 5cm longer than the length of the previous measurement from the soft tips of the guidewire with scissors. The guidewire is passed from the sideholes in the stent, leaving about 5cm of the wire outside the stent lumen. This guidewire makes the stent taut so that it is easily negotiated up and down the ureter. The straightened stent on the guidewire is passed in the retroperitoneal space through a 5-mm port. Holding the distal end of the double-J stent, we push it in distally. The other end of the double-J stent is pushed in proximally following the same procedure. The stent is fully placed into the ureter by anticlockwise rotation. The guidewire is pulled out with a grasper after insertion of stent, and the two ends of the stent coil up in the bladder and the kidney.
Results: All retroperitoneal laparoscopic ureterolithotomies were performed successfully without any complications. The mean stone size was 28 mm (range 16-51) and the stones were located in the upper ureter in all 54 patients. The mean operative time was 68.1 min (range 53-116). The mean time required for anterograde insertion of the stent was 3.48 min (range 2.11-6.08) and postoperative drain removal days were 1.8 days (range 1-3) respectively. The mean postoperative hospital stay was 4.8 days (range 3-8). The mean postoperative time to stent removal was 3.1 weeks (range 2-5). The stent was correctly placed in all cases in less than 4 minutes without any difficulty even if it was the first time. Using this technique, the operating time was markedly shorter than other method described in the literature.
Conclusions: Our new technique, during laparoscopic ureterolithotomy is easier, safer and saves precious time.

UP.599

Percutaneous Nephrolithotomy in Patients with Solitary Kidney

Guliev B, Komyakov B
Mechnikov's Medical University, St-Petersburg, Russia

Introduction and Objectives: To evaluate the safety and efficacy of percutaneous nephrolithotomy (PCNL) in patients with solitary kidney.
Materials and Methods: From January 2006 to March 2013, 32 patients with solitary kidney (congenital in 4 (12.5%) patients, contralateral nephrectomy in 12 (37.5%) patients and nonfunctional kidney in 16 (50.0%) patients) underwent PCNL. We evaluated patient's age, sex, stones (size, number), intra and postoperative complications, preoperative and postoperative renal function. Creatinine clearance was estimated using formula of Cockroft and Gault. Patients were followed at 1-2 weeks, 1 month and then 3 monthly for evaluation of renal function.
Results: Mean age of the patients with solitary kidney was 49 years (range 26 – 74). Twenty two (68.7%) cases were male and 10 (31.3%) cases were female. Side of solitary kidney was right in 18 (56.2%) cases, and left in 14 (33.8%) cases. Mean stone size was 28.4 ± 11.2 mm. PCNL indications were stone size (> 20 mm) in 27 (84.4%) cases and failed SWL in 5 (15.6%) cases. Stone was simple in 20, complex in 8 and staghorn in 4 patients. Stone free rate was 84.3% (27/32). Serum creatinine decreased from 2.3 ± 0.8 mg/dl to 1.4 ± 0.6 mg/dl. Creatinine clearance improved from 46.8 ± 12.6 ml/min to 58.4 ± 20.6 ml/min. Complications occurred in 7 cases (21.8%) postoperatively: fever in 2 cases (6.2%), urinary leakage in 2 cases (6.2%) and blood transfusion in 3 cases (9.4%).
Conclusions: PCNL in patients with solitary kidney is technically feasible and an effective method for stone treatment.

UP.600

Change of Practice from Prone Position Fluoroscopy Guided Access Percutaneous Nephrolithotomy to Modified Supine Position and Combined Fluoroscopy and Ultrasound Guided Access

Mahrous A, ElMussareh M, Lloyd S
St James's University Hospital, Leeds, UK

Introduction and Objectives: Since 2011 we changed the practice of percutaneous nephrolithotomy (PCNL) in our unit to exclusive modified supine position using both fluoroscopy and ultrasound to guide the access. The aim of this study is to evaluate the results of this change of practice and to compare the results with the results of a previous audit of prone fluoroscopy guided PCNL.
Materials and Methods: Between September 2011and November 2013, 33 patients underwent 43 PCNL (10 patients had a second look procedure). All procedure was done by a single surgeon. Thirteen patients had staghorn calculi. Twenty patients had large pelvic and/or calyceal stones with a mean stone size of 2.9 cm (1.8-6 cm).
Results: The modified supine position allowed simultaneous access to the kidney with flexible ureterorenoscopy in 13 patients 39.3%; 48.5% of patients were ASA score 3 or 4.
Conclusion: Modified supine PCNL using combined fluoroscopic/ultrasound guidance is a safe and effective technique. Using this technique adds the advantage of shorter operative time and may be more suitable for higher anaesthetic risk patients.

UP.601

Flexible Ureteroscopy for Upper Urinary Tract Calculi in Children

Wu Y, **Zou X**, Zhang G, Yuan Y, Xiao R
First Affiliated Hospital of Gannan Medical University, Ganzhou, China

Introduction and Objectives: To evaluate the value of flexible ureteroscopy for the treatment of the upper urinary tract calculi in children.
Materials and Methods: There were a total of 26 children including 15 males and 11 females in this study. The median age was 7.2 (range 2.3 to 16) years. Among them, 14 had upper ureteral calculi (12 with calculi in situ, 2 with middle/fistal ureteral calculi shifting to upper ureteral after rigid ureteroscopic lithotripsy) and 12 had renal calculi. Ipsilateral mild to moderate hydronephrosis was found in all of the cases. Four children had melamine-induced stones (3 with upper ureteral calculi and 1 with renal calculi). The calculi were found on the left side in 15 cases, on the right side in 8, and

UP.600, Table 1. Results of Modified Supine position PCNL compared to results of an audit of previous practice

	Prone position fluoroscopy guided PCNL Feb 2010-May 2011	Modified Supine, combined fluoroscopic/ultrasound guidance PCNL Sep 2011-Nov 2013
No. of patients	24	33
Staghorn calculi	10 (41%)	13 (39.3%)
2nd look PCNL	3	10
Mean operative time	99.7 min	78.5 min
Supracostal puncture	2	1
Need for second puncture	2	1
Stone free rate	66.6%	66.6%
Blood transfusion	2	0
Complications	1 pneumothorax 1 failed access 1 continuous urine leak	0

on both sides in 3 (upper ureteral calculi). The median stone size was 1.0 (range 0.6 to 1.5) cm. Retrograde flexible ureteroscopy and anterograde flexible ureteroscopy in mini-percutaneous nephrolithotomy was performed.
Results: Retrograde flexible ureteroscopic procedure was performed in 23 cases. One case was conversed to mini-percutaneous nephrolithotomy because the flexible ureteroscope could not be inserted into the upper ureter. The flexible ureteral access sheath failed to insert into the upper ureter in 2 cases, and the flexible ureteroscope was inserted into ureter directly. The stones were successfully fragmented after two stages in these two cases. The successful rate of stone search was 100% in 22 cases. Twenty cases were successfully performed in one stage. The success rate of stone fragmentation was 90.9% with the holmium laser lithotripsy. Three anterograde flexible ureteroscopy with mini-percutaneous nephrolithotomy were successfully performed, and the stones were successfully found and fragmented after a single holmium laser lithotripsy. The median operative time was 35 (range 20 to 70) mins. There was no major perioperative complication. The patients were discharged from hospital after a median of 4.5 days (range 3 to 7). Double-J stent was removed after 2 to 4 weeks when no residual stones more than 2.0mm in size were found. No recurred stones, no urethra stricture, no ureter stricture, no urinary incontinence and no vesicoureteral reflux were found during the 3 to 72-months follow-up.
Conclusion: Flexible ureteroscopy is a safe and feasible method for the treatment of upper urinary tract calculi in children. It is suitable for the stones in the pelvis and calyceal where the rigid ureteroscopy could not reach.

UP.604
Sheathless Approach in Intrarenal Endoscopic Laser Lithotripsy (RIRS): An Outcome Analysis of 43 Consecutive Patients
Hussain B, Chow W
Pennine Acute NHS Trust, Manchester, UK

Introduction and Objectives: Ureteral access sheath (UAS) induced ureteral wall injury during RIRS has been reported as high as 46.5%, ranging from superficial mucosal breaches (33%) to severe injury involving the muscle layer (13.5%). We present an outcome analysis of 43 consecutive patients who underwent RIRS without the deployment of a ureteral access sheath for access to the upper renal tract.
Materials and Methods: A total of 43 patients (F18:M25) with renal calculi were treated by RIRS with fibreoptic ureterorenoscope introduced by rail-roading using the 2-wire technique without an access sheath. Seventy percent were ESWL failures with 80% lower pole calyceal stones. Eighty percent were multiple stones and 26% pre-stented. Stone size ranges from 3 to 22mm (median 13mm) and varies from one to 7 stones. Fragmentation aiming at complete pulverisation was achieved by using a 273 micron fibre on the Oddyssey (Cook Medical) 30 (Hol:YAG) system. Maximum energy (range 690-9800 Joules) was used for complete pulverization with the double pulse duration option. Visual confirmation of any ureteral breaches was carried out on exit of the fibreoptic ureteroscope. Clearance was assessed on visual pulverisation, absence of fragment > 3mm during treatment, and 3-month follow-up imaging.
Results: Complete stone clearance was achieved in 40 patients after single treatment. One patient needed 2 treatments for a 22 mm stone and one had 3 sessions to clear seven stones. We failed to gain access in one patient with horse- shoe kidney. Treatment lasted between 45 to 80 minutes and all patients except one were discharged within 24 hours. Significant ureteral muscosal/submucosal breach, incidence of sepsis or significant haematuria was not observed.
Conclusions: In our current practice, the use of access sheath is not routinely required in RIRS for ureteral access and repetitive stone fragment retrieval from the upper renal tract, especially when stone pulverization and subsequent clearance is achieved by the effective and safe Oddyssey 30 (Hol:YAG) system utilising the dual pulse duration option. The sheathless approach is safe, and rountine ureteral pre-stenting is not mandatory. Ureteral wall injury has not been observed in this series.

UP.605
Ureteroscopic Lithotripsy Using Swiss Lithoclast
Hong Y[1], Lee S[1], Park D[1], Oh J[2]
[1]CHA Bundang Medical School, Seongnam, South Korea; [2]SNUBH, Seongnam, South Korea

Introduction and Objectives: We reviewed our ureteroscopic lithotripsy using pneumatic lithoclast (ULPL) performed for 14 years for the treatment of ureteral calculi to figure out factors affecting its success.
Materials and Methods: A total of 911 ureteric units of ULPL performed in 857 patients (13 to 81 years old) from 2000 to 2013 in a single hospital were retrospectively reviewed. Our hospital has never had any other types of lithotripter such as ultrasonic, electrohydraulic, laser, but pneumatic type. We used 9.5Fr or 10Fr semi-rigid ureteroscopes and Swiss Lithoclasts. Success was defined as being free of stone-related symptoms and residual stones larger than 3 mm.
Results: The overall success rate determined after 2 to 4 weeks of operation was 92.9%. The success rates were different according to the location of stone. The success rate of upper ureter stone was significantly lower than those of middle to lower ureter stones. The success rate of stones larger than 10mm in diameter was lower than stones smaller than 10mm. Hydronephrosis was another independent factor that affects success. The most common cause of failure was upward migration, followed by intraoperative complication of ureteral perforation.
Conclusion: Pneumatic lithotripsy with Swiss Lithoclast is an effective and safe treatment

UP.605, Table 1. Patient Demographics and Characteristics of Ureteric Calculi

	Upper	Middle	Lower	Total
Number	143	176	592	911
Male	70	99	339	511
Female	72	75	253	400
Stone diameter (mm)	9.4	8.4	7.6	8.03
Age (year)	Male: 46.5, Female: 53.6			49.6

UP.605, Table 2. Success Rates According to Stone Size and Location within the Ureter

	Upper	Middle	Lower	Total	p-value
No. of cases	143	176	592	911	
Success (%)	116 (81.1)	159 (90.3)	571 (96.5)	846 (92.9)	0.015*
Failure (%)	27 (18.8)	17 (9.6)	21 (3.5)	65 (7.1)	
Migrated stones (%)	23 (16.0)	15 (8.5)	18 (3.0)	56 (6.1)	0.038*
Perforation (%)	4 (2.8)	2 (1.1)	3 (0.5)	9 (1.0)	0.742
Success according to size					0.025*
<5mm (%)	4/5 (80.0)	16/17 (94.1)	118/121 (97.5)	138/143 (96.5)	0.591
5-10mm (%)	25/28 (89.3)	90/94 (95.7)	429/445 (96.4)	544/567 (95.9)	0.326
>10mm (%)	87/110 (79.0)	53/65 (81.5)	24/26 (92.3)	164/201 (81.6)	0.039*
Success according to hydronephrosis					0.009*
Mild	29/35 (85.7)	61/66 (92.4)	498/515 (96.7)	588/616 (95.4)	0.231
Moderate	70/81 (87.6)	72/78 (92.3)	56/58 (96.5)	198/217 (91.2)	0.485
Severe	17/27 (62.9)	26/32 (81.2)	17/19 (89.5)	60/78 (76.9)	0.021*
*; $p < 0.05$					

modality for ureter stones. Its efficacy is reduced in case of large sized upper ureter stones with marked hydronephrosis because of higher chance of stone fragment migration during lithotripsy.

UP.608
Robot Assisted Laparoscopic Ureterolithotomy for Large Proximal Ureteral Stone
Hung S, Chung S, Wu W
FEMH, Taipei, Taiwan

Introduction and Objectives: This study aimed to evaluate the feasibility and report early outcomes of robot-assisted laparoscopic (RAL) transperitoneal ureterolithotomy.
Materials and Methods: From July 2012 until February 2014, nine patients, including 8 men and one woman, with a mean age of 50.2 years (range, 32-63 years), underwent RAL transperitoneal ureterolithotomy. All of the locations of stones were the proximal ureter. No patients had a history of previous abdominal surgery. RAL ureterolithotomy was performed via a transperitoneal approach. Complications and outcomes were also evaluated.
Results: Mean operation time was 163.3 minutes, and the mean console time was 93.4 minutes. The mean stone size was 2.7 cm (range, 2-3.8 cm) in length. There was no stone migration or conversion. All the ureteral stones were extracted laparoscopically. A double J stent was inserted antegradely during the procedure and remained for about 1 month in all cases. No visceral complication or blood transfusion occurred. The mean hospital stay and the drain installation interval were 6.3 days (range, 4-8 days) and 3.6 days (range, 3-5 days), respectively. Preoperative hydronephrosis resolved at follow-up ultrasonography (3 months later) in all patients.
Conclusion: RAL transperitoneal ureterolithotomy is a safe and effective procedure and a convenient option for patients.

UP.609
Percutaneous Nephrolithotomy: Which Is the Best Position? Comparison between Prone and Supine
Chavez Roa C, Resel Folkersma L, Ciappara Paniagua M, Parra Ayala F, Moreno Sierra J
Hospital Clinico San Carlos, Madrid, Spain

Introduction and Objectives: The change, from prone to supine position, in the percutaneous nephrolithotomy (PCNL) has offered 2 paths, allowing combine this technique with ureterorenoscopy, as well as facilitate the anesthetic operation, and reducing respiratory complications. The objective is to compare the effectiveness of both techniques in a complete resolution (0 residual stones) in the PCNL and assess secondary outcomes as intra and postoperative complications.
Materials and Methods: Retrospective analysis of 138 PCNL performed at our center between 2002 and 2013. Dependent variable: stone clearance rate. Statistical analysis: Comparison between PCNL prone and supine regarding intra and post surgical variables. Level of significance: α error <0.05.
Results: See Table 1.
Conclusions: The supine position in PCNL, present a trend towards better stone-free rate ($p = 0.057$), with less operative time and hospital stay ($p < 0.05$). The total number of intraoperative complications was higher in supine, although neither these nor postoperative complications differed significantly.

UP.610
Mini-Percutaneous Nephrolithotomy in the Treatment of Adult Renal Nephrolithiasis: A Single Institution Experience
Miller S, Taylor A, Ahmad R, Lloyd J, Ratan H, Lemberger J, Scriven S
Nottingham City Hospital, Nottingham, UK

Introduction and Objectives: Minimally invasive PCNL (Mini-PCNL) was initially used in treating paediatric nephrolithiasis, but has since been used in adults. We present a large UK single institution series of Mini-PCNL, assessing the efficacy, safety and morbidity in

UP.609, Table 1.

	Supine	Prone	Total	*p*
Nº Renal units	97 (70.3%)	41 (29.7%)	138	
Mean age in years Range	52.99 (20-87)	50.9 (25-80)	52.32 (20-87)	
Number tone Range	1 (1-6)	1 (1-5)	1 (1-6)	
Stone length mm median	28.4mm	28.0mm	28.28mm	
Staghorn tone	11.3%	9.8%	10.9%	
Operative time	90min	165min	120min	0.01
Mean hospital stay days	8	9.5	8	0.002
Stone–free rate	33%	51%	38.4%	0.057
Residual Stone mm	3.67mm	4.13mm	3.8mm	0.044
Intraoperative complications				
Perforation	1	0	1	*ns*
Hemorrhage	1	0	1	ns
No access	3	2	5	ns
Lost access	4	0	4	ns
Postoperative complications				
Pain	6.2%	7.3%	6.8%	0.75
Fever	16.8%	18.9%	17.4%	0.8
Infection	5.2%	9.8%	6.8%	0.28
Severe hematuria	5.2%	7.3%	6.1%	0.574
Urinary fistula	2.1%	4.9%	3.1%	0.34
Transfusion	5.3%	5.3%	5.5%	0.99
Embolization	1%	5.3%	2.3%	0.14

comparison to standard PCNL.

Materials and Methods: Retrospective analysis of 116 patients undergoing Mini-PCNL between February 2009 and February 2013 was performed. Stone factors such as size and density were investigated regarding their influence on surgical outcome. A patient was considered stone free if no residual fragments were identified on post-procedure imaging. Unpaired t-test was used for statistical analysis of outcome based on stone size and density. A p-value of <0.05 was considered significant. Post-operative complications were graded according to the Clavien grading system. Results were compared with the Clinical Research Office of the Endourological Society Percutaneous Nephrolithotomy Global Study (2011).

Results: A total of 116 patients (60 male, 56 female) were studied, average age 53.2 years. Average operative time was 175 minutes, average length of stay 3.9 days. Fifty four (46.5%) patients were stone free, 56 (48.5%) had residual fragments and 6 (5%) had follow-up elsewhere. Twenty four patients (20.7%) required further procedures, namely extracorporeal shockwave lithotripsy (10 patients), ureteroscopy (9 patients) and additional PCNL (5 patients). Overall, 79.4% patients were stone free, or had clinically insignificant fragments not requiring further treatment. Average stone size in patients who were stone free was 21.5mm, and 25.3mm in those with residual fragments (p=0.105). Average stone density in stone-free patients was 841 Hounsfield Units (HU) and 970 HU in those not stone free (p=0.111). Stone density was not a significant influence on the need for a further procedure (p=0.397). Complications included blood transfusion in 3 patients (2.6%) whilst 18 (16%) patients had infectious complications (12.9% urinary sepsis, 2.6% wound infection and 1.7% chest infection), all Clavien grade 2.

Conclusions: Mini-PCNL in adults is a safe and effective alternative to standard PCNL. Mini-PCNL has similar stone re-treatment rates and lower incidence of blood transfusion. There is no adverse effect on stone clearance by stone size or density using Mini-PCNL in this series.

UP.611

Outcomes of Percutaneous Nephrolithotomy (PCNL) at Bedford Hospital

Alnajjar H, Williams C, Khan A, Chaudry A
Bedford Hospital NHS Trust, Bedford, UK

Introduction and Objectives: At Bedford Hospital NHS Trust, a percutaneous nephrolithotomy (PCNL) service was initiated in 2010 for patients with staghorn calculi, or in whom lithotripsy and flexible ureterorenoscopy with laser fragmentation had failed. The objective of this study was to analyse the outcomes of PCNL at Bedford Hospital.

Materials and Methods: A retrospective case series study of all patients undergoing PCNL at Bedford hospital between September 2010 and September 2013 was conducted. We collated data on patient characteristics, calculus characteristics, pre-operative assessment, imaging, renal tract access, stone extraction, renal tract drainage, complication rates and stone free rates.

Results: The study included 43 patients undergoing 46 procedures. The mean age was 52 years and mean BMI of 29. Twelve percent of the stones treated were staghorn and 29% were > 2 cm. All cases were prone PCNL's. In 98% of the cases a single tract was used. Puncture of the renal tract was performed exclusively by a single urological surgeon under fluoroscopic guidance. The median length of inpatient stay was 3 nights. Intra-operative and at follow-up stone free rates were 87% and 72% respectively. Complication rates were low; 4.3% of the patients required blood transfusion, 0% visceral injury, and 2.2% required intensive therapy unit admission. Only 1 case was abandoned due to heavy tract bleeding intra-operatively.

Conclusion: In Bedford PCNL is performed exclusively by an experienced surgeon under fluoroscopic guidance only, reflecting locally available skills and technology. The stone free rates are comparable to national rates. The rates of complications in our centre are comparable to both national and international rates. These data confirm the safety and efficacy of PCNL in our hospital.

UP.612

Ureteroscopy for Stone Disease in Obese Patients: No, Yes or Always?

Ishii H, Cook P**, Somani B**
University Hospital Southampton NHS Trust, Southampton, UK

Introduction and Objectives: Obesity is now a worldwide epidemic and stone disease is more common in this population. Management of stones is difficult due to the risks associated with anesthetic and surgical approaches. We wanted to see the outcomes of ureteroscopy for stone disease in obese patients from our university teaching hospital.

Materials and Methods: Data was analysed

retrospectively from a prospectively kept database between March 2012 and February 2014. All patients who underwent ureteroscopy and laser stone fragmentation (URSL) with a BMI >30 were included. Stone free status was determined by endoscopic stone clearance and/or a follow-up imaging in 3 months.
Results: Twenty-five patients had 27 URSL procedures for renal and or ureteric stones (20 left sided, 4 right sided and 1 bilateral URSL). The male:female ratio was 14:11, with a mean age of 54 years (22 years to 79 years) and a mean BMI of 36 (range: 30-65). Eighteen patients presented with loin pain, six with UTI or urosepsis and 1 with haematuria. Five patients had positive urine culture pre-operatively (E.coli-3, pseudomonas-2). Detailed stone screening was done in 12 patients. The stone location was in the lower pole (n=7), PUJ (n=4), VUJ (n=3) and a combination of renal and ureteric stones in other patients. The stone number varied from 1 to 7 (mean 1.7) with a mean stone size of 9 mm (5-25 mm) and a combined stone size of 13 mm (5-60 mm). The mean operative time was 54 minutes (25-103 minutes) with 10 patients having a pre-operative stent *in situ* and an access sheath used in 12 patients. Twenty-four patients (96%) were stone free with 2 patients needing more than one procedure. The stone composition was uric acid (n=5), struvite (n=4) and calcium oxalate (n=10). Twelve procedures were done as a day case with a mean hospital stay of 0.8 days (0-7 days). One patient with a pre-operative pseudomonas urine culture needed iv antibiotics for a week and a second patient had an early stent removal for stent irritation. There were no other complications.
Conclusions: Ureteroscopy is a safe technique in obese patients with a good stone clearance and a low complication rate with a majority of patients discharged within 24 hours.

UP.613
Bilateral Simultaneous Ureteroscopy (BS-URS) for Stone Disease: Results from a University Teaching Hospital
Drake T, Ali A, Cook P, Harris M**, Somani B**
University Hospital Southampton NHS Trust, Southampton, UK

Introduction and Objectives: BS-URS for management of bilateral ureteric and/or renal stones can be challenging with a complication rate higher than staged URS. We analysed the outcomes and safety of BS-URS in our University teaching hospital.
Materials and Methods: Data on all patients undergoing BS-URS between May 2012 and October 2013 was collected including patient demographics, pre-operative assessment, stone characteristics and complications. Laser was used for fragmentation and where possible all fragments were actively retrieved. The follow-up imaging modality was a combination of KUB, USS or CTKUB.
Results: Nineteen patients (38 renal units) had 22 BS-URS procedures for proven or suspected stone disease of which 3 procedures were completion BS-URS. The mean age was 46 years (Male:Female-7:12). Pre-operatively 3 patients each had a positive urine culture and a stent *in situ*. Patient comorbidities included morbid obesity (n=1), advanced renal failure (n=1), spinal injury (n=1) and obesity associated with diabetes (n=3). BS-URS was done for bilateral renal stones (n=6), renal and/or ureteric stones (n=8) and bilateral ureteric stones n=2). In the remaining 3 cases a unilateral diagnostic FURS for suspected renal stone was done with a contralateral URS for renal (n=2) or ureteric (n=1) stone. There were only 4 isolated (single) ureteric stones. The remaining stones were either in the PUJ or kidney or in multiple renal and/or ureteric locations. The mean bilateral stone burden was 21mm (range: 4-63 mm). Of the 22 procedures, an access sheath was used in 14 (64%) procedures. Our stone free rate (SFR) was 92% (35/38 renal units), with one being in an inaccessible location and 2 others opting for conservative management. A post-operative stent was inserted in all patients (n=15, bilateral; n=7, unilateral). A stone analysis showed calcium oxalate stone (n=10), calcium phosphate stone (n=2), cystine stone (n=2), uric acid stone (n=1) and a combination of magnesium ammonium phosphate with calcium phosphate stone (n=4). Seventeen procedures (77%) were done as day case procedures with a mean stay of 0.4 days (range: 0-5 days). Two patients had an early stent removal due to stent irritation. There were no major complications and one minor complication (post-operative pyelonephritis requiring with iv antibiotics).
Conclusions: BS-URS for stone disease is safe and feasible. Surgeons performing these procedures should monitor their outcomes.

UP.614
Holmium:YAG Laser Lithotripsy for Renal and Ureteric Stones in 401 Cases
Wadhwa V**, Abraham R**, Syed H
Heart of England NHS Foundation Trust, Birmingham, UK

Introduction and Objectives: We assessed the effectiveness and safety of Holmium:YAG laser lithotripsy for managing renal and ureteric stones in a single centre, single surgeon study.
Materials and Methods: Between September 2006 and September 2013, consecutive cases of ureteroscopy with holmium laser lithotripsy for treatment of stones detected by CTKUB and IVU were reviewed. A 7.5/8.5Fr semirigid/flexible ureterorenoscope 230/365µm fibre was used. All patients received intravenous gentamicin on induction, followed by 48 hours of oral antibiotics. In addition, patients with a ureteric stent received intravenous co-amoxiclav on induction.
Results: Over seven years, 401 cases were performed, which stratified by location involved: renal 138 (34%), proximal ureter 115 (29%) mid ureter 43 (11%), and distal ureter 103 (26%). SFR after single treatment by location was: renal 83% (115/138), proximal ureter 91% (105/115), mid ureter 95% (41/43), distal ureter 90% (93/103). Of stones ≤10mm in size, SFR after single treatment was 93% (293/315), whereas >10mm SFR after single treatment was 73% (59/81). Overall SFR after single treatment was 83% (332/401). Repeat ureteroscopic lasertripsy was required in 6.5% (26/401). Overall SFR after repeat lasertripsy was 89% (57/401). Further treatment modalities, including percutaneous nephrolithotomy and extracorporeal shock wave lithotripsy, were required in 10% (42/401). The median length of stay was 1 day. Overall complication rate was 2.3% (sepsis 1.0%, UTI 0.5%, LRTI 0.2%, prolonged haematuria 0.2%, urinary retention 0.2%, ureteric stricture 0.2%) with no major complications.
Conclusion: Holmium:YAG laser lithotripsy is an efficacious treatment for renal and ureteric stones. In these cases the majority of stones encountered were complex renal and upper ureteric calculi, but treated with satisfactory efficacy and low morbidity.

UP.615
The Effectiveness and Safety of Percutaneous Nephrolithotomy (PCNL) for Solitary Kidneys: A Single-Center Experience
Santok G, Abraham J
National Kidney and Transplant Institute, Quezon City, The Philippines

Introduction and Objectives: Percutaneous nephrolithotomy of stones in solitary functioning kidneys pose a significant challenge to the urologist. Complications such as bleeding, incomplete stone clearance, and possibly decline in renal function affect the decision to perform PCNL in these patients. The aim of this study was to evaluate the outcomes of percutaneous nephrolithotomy in patients with solitary kidneys.
Materials and Methods: Between January 2009 and December 2013, 31 patients with renal stones in solitary kidneys were treated with PCNL at the National Kidney and Transplant Institute. All stones were diagnosed using an unenhanced CT scan. The solitary functioning status of the kidney was congenital absence of the contralateral kidney in 7 (22%); opposite nephrectomy in 15 (48%); and nonfunctional contralateral kidneys in 9 (29%) as detected by nuclear scintigraphy. The serum creatinine and hemoglobin were monitored at regular intervals. The stones were classified using the Guy Stone Score while the complications were

analyzed using the Clavien-Dindo Grading System. The mean follow-up in months was 21.3±12.26 (4-48).
Results: The male to female ratio is 1.2:1. According to the Guy Stone Score, the stones were Grade 1 in 54.8% (17/31), Grade 2 in 16.1% (5/31), Grade 3 in 6.4% (2/31) and Grade 4 in 22.5% patients, respectively. The stone-free status was determined with a postop CT scan. Complete stone clearance was achieved in 90.3% (28/31) after a single session of PCNL. The mean operative time was 151±36.7 (90-230) minutes. According to the Clavien-Dindo Classification, 19 (59.3%) had no complication, 4 (12.9%) had Grade 1 (fever), 6 (19%) had Grade 2 (blood transfusion) and 1 (3%) had Grade 5 (postoperative hemodialysis, sepsis and death). The rest maintained stable or improved renal function without postoperative hemodialysis. The mean rise in serum creatinine was 0.67±1.01 (0.1–3.5) mg/dL. Mean drop in hemoglobin was 1.6±0.89 (0.5-3.8) gm/dL.
Conclusion: PCNL is effective and safe for patients with nephrolithiasis in solitary kidneys. This minimally invasive procedure achieves a high stone clearance rate with acceptably low morbidity and mortality.

UP.616
Comparison of Surgical Outcomes between Laparoscopic Pyelolithotomy and Percutaneous Nephrolithotomy in Patients with Multiple Renal Stones in Various Parts of the Pelvocalyceal System
Lee J[1], Cho S[2], Son H[2], Jeong H[2], Kim H[3], Lee S[2]
[1]Sanggye Paik Hospital, Inje University College of Medicine, Seoul, South Korea; [2]SMG-SNU Boramae Medical Center, Seoul, South Korea; [3]Seoul National University College of Medicine, Seoul, South Korea

Introduction and Objectives: To evaluate surgical outcomes of laparoscopic pyelolithotomy (LP) and percutaneous nephrolithotomy (PCNL) in managing multiple renal stones in various parts of the pelvocalyceal system.
Materials and Methods: From February 2004 to December 2011, 45 patients underwent LP and 39 underwent PCNL for treatment of pelvic stone(s) with calyceal stone(s). Differences in demographics, perioperative data, and complications were compared between LP and PCNL. The primary endpoint in this study was the stone-free rate in a single session.
Results: Stone-free rates were 91.1% and 64.1% in the LP and PCNL groups, respectively ($P = 0.003$). Mean operation time was longer in the LP group ($P < 0.001$). Mean change in hemoglobin level ($P < 0.001$) as well as postoperative analgesics usage ($P = 0.022$) was significantly better in the LP group. However, mean estimated blood loss ($P = 0.112$), mean change in creatinine ($P = 0.172$) and estimated glomerular filtration rate ($P = 0.395$), and mean length of hospitalization ($P = 0.842$) were similar in both groups. The PCNL group had more overall complications.
Conclusion: LP was safer and more effective than PCNL according to our study. Therefore, LP may be a feasible modality in managing multiple complex renal stones in various parts of the pelvocalyceal system.

UP.617
Miniperc: Outcome at MPUH
Kumar M, Bhattu A, Ganpule A, Mishra S, Vyas J, Jagtap J, Sabnis R, Desai M
Muljibhai Patel Urological Hospital, Nadiad, India

Introduction and Objectives: Miniperc is percutaneous nephrolithotomy (PCNL) with access sheath smaller or equal to 20 Fr which is being used in adults for decreasing the morbidity of standard PCNL. The objective of this study is to analyze the outcomes of miniperc at our centre.
Materials and Methods: It is prospective study in which all the patients who underwent miniperc at our centre from June 2009 to January 2014 were enrolled. Inclusion criteria were stones smaller than or equal to 2.5 centimeter. Exclusion criteria were patients with active bleeding disorders, active urinary tract infections & pregnant patients. Patient demographics, stone characteristics, procedural details, complications, analgesic requirement, hemoglobin drop, hospital stay, stone clearance rate were analyzed.
Results: We performed 328 Minipercs from June 2009 to January 2014.Mean patient age was 41.4±16.5 years. Mean stone size was 14.6±3.2 milimeter. Number of stones in pelvis, upper calyx, middle calyx and lower calyx were 157, 27, 48 and 145 respectively. Procedure was tubeless in128 patients. Mean haemoglobin drop, mean operative time, mean analgesic requirement, and mean hospital stay was 1.06±0.4 grams/deciliter, 57.2±14.8minutes, 45.6±34.8miligrams of tramadol and 2.8±0.5days respectively. Complication included pelvic perforation in 1 patient, bleeding in 6 patients, perinephric collection in 5 patients; postoperative transient fever in 10 patients. Complete clearance was achieved in 322(98.10%) patients.
Conclusion: Miniperc is safe alternative to conventional PCNL in intermediate size stones with better morbidity profile.

UP.618
A Novel Technique for Ureteroscopic Extraction of Ureteric Stones
Musbahi E[1], Musbahi A[2]
[1]Basildon Hospital, Basildon, UK; [2]Al-Ahli Hospital, Doha, Qatar

Introduction and Objectives: Ureteric colic is an acute condition associated with pain and often requires hospital admission. With the large number of cases of ureteric stones among young active patients in Doha, Qatar there is a high expectation for rapid functional recovery. Use of semi-flexible ureteroscopes and holmium laser has made the removal of ureteric stones atraumatic. This study reviews postoperative outcome and recovery time for 200 patients with ureteric stones that underwent a novel ureteroscopic technique in one of the largest hospital in the country between 2010 and 2012.
Methods and Materials: A total of 200 patients (172 men, 28 women) underwent this procedure with mean age 41 years (range: 22-65). Spiral CT was the diagnostic method. Mean stone size was 5.3mm (range: 3-16mm). The technique involves introducing the mini-rigid ureterscope 6.5f with a loaded 0.35f flexible end guide wire at the beginning of the procedure. No prior cytoscopic examination, retrograde or any form of dilatation of the ureter was performed. Holmium laser was used to fragment the larger stones (>5mm). A 2.3 parachute basket is introduced to retrieve fragmented stones. A survey assessed patient satisfaction and recovery time.
Results: Complete stone clearance was achieved in 181(91%) cases and partial clearance in 11(5.5%) cases. Operation duration was short (mean: 17.5 mins, range: 3-54 mins). No case required dilatation or prior stenting. Of all the cases, 130 (65%) required having a ureteric stent with an attached suture that was removed within 48 hours. The time lapse to return to work was 4.4 days (range: 2-7 days). No major postoperative complications occurred except 2 (1%) patients developed small perforations that were resolved conservatively. There was no significant difference in the recovery time, postop complications, and operation duration with the location of ureteric stone. Failure to reach upper ureteric stones was observed in 8 (4%) cases, requiring a double J-stent and ureterscopy ten days later.
Conclusion: The use of a mini-rigid ureteroscope with a loaded flexible end guide wire from the start of the procedure is a safe and efficient technique. It had minimal complications and a shorter recovery period, meeting patients' expectations.

UP.619
Stimulation of Diuresis as Adjuvant of Extracorporeal Shock Wave Lithotripsy Treatment
Marques V, Castelo D, Tavares da Silva E, Rolo F, Mota A
Dept. of Urology and Renal Transplantation, Coimbra's Hospital and University Centre, Coimbra, Portugal

Introduction and Objectives: The treatment of urinary stones with extracorporeal shock wave lithotripsy (ESWL) may be complemented with

different adjuvant support measures. These measures can prevent residual lithiasis and new lithiasic formation. A good example consists in stimulation of diuresis during therapy sessions. The aim of this study is to assess the impact of use of diuretics in stone-free rate after ESWL.
Materials and Methods: A total of 447 patients underwent ESWL sessions during the year of 2011. The study group did intravenous furosemide (20 mg) previous to each session and the control group didn't do any previous medication. The stone-free rate after each session was recorded in both groups.
Results: The study group accounted with 362 patients (81%) and the control group accounted with 85 patients (19%). Univariate statistical analysis showed that the use of furosemide was associated with a superior stone-free rate (p=0.001). Multivariate analysis showed that independent predictors for a superior stone-free rate were: use of furosemide (OR=2.94, CI=1.27 to 6.80, p=0.012), stone size (OR=0.99 CI=0.89 to 0.96, p<0.001) and treatment potency (OR=0.996, CI=0.99 to 1.00, p=0.028). Patient's age, stone laterality and location and other technical factors, such as the frequency and number of shocks didn't influence the stone-free rate.
Conclusion: Using furosemide during ESWL increases about 3 times the likelihood of obtaining a superior stone-free rate, in an independent way. Stimulation of diuresis before ESWL treatment is therefore an effective, safe and inexpensive adjuvant measure.

UP.620
Floseal® Usefullness for Post PNL Complication: Pilot Study
Kim W, Chung J, Min K, Kang D, Seo W, Kang P, Oh C, Park S, Kim S, Jung J, Yoon J
Inje University, Busan, South Korea

Introduction and Objectives: Percutaneous nephrolithotripsy (PNL) was the standard operation of large renal stone. Overall complication rate of PNL is 10%. The most common complications are persistent urine leakage and hematuria. So we compared the nephrostomy site urine leakage and hematuria rate using hemostatic matrix meteral (Floseal®) to reduce complication rate.
Materials and Methods: From January 2013 to August 2013, we prospectively randomized 26 PNL operation cases. We separated the group as simple suture group and Floseal® group. And we compare OP finding, OP time and complication rate, post-operation stone analysis, etc.
Results: Mean operative time was 50.1 and 54.5 (p=0.1). Complication rate was 7 (53.8%), 3 (23.1%) (p=0.03). Especially in Floseal® group, urine leakage rate was low. But hematuria rate was same in both groups as simple group (4 person), Floseal® group (3 person).
Conclusion: In this Pilot study, we know the Floseal® usefulness for reduction of urine leakage at the nephroscope site. But we need to further study.

UP.620, Table 1.

Table 1 Comparison of Floseal apply study (n=26)

	Simple suture group	Floseal® group	p
No pts	13	13	
Mean age (yrs)	52.3	54.2	0.2
Gender (F/M)	8/5	5/8	
Mean Stone burden (mm3)	2257	4028	0.05
Laterality (R/L)	4/9	6/7	
No. access	1.1	1.1	0.2
Operation time (min)	50.4	54.5	0.1
Mean fragmented stone size in per minute (mm3/min)	44.8	73.9	0.01
Stone free rate (%)	100	92.3	0.02
Hb drop (gr/DL)	0.81±0.9	0.6±0.8	0.07
Complications according to			
Clavien (%)	7 (53.8)	3 (23.1)	0.03
fever	1	0	
hematuria	4	3	
urine leukage	2	0	
Blood Transfusion (%)	1 (7.7)	1 (7.7)	0.2
Mean catheter removal (day)	3.8	3.1	0.07
Length of stay after OP (day)	3.5	3.1	0.08

UP.621
Safety and Efficacy of Ultrasound-Guided versus Fluoroscopy-Guided PCNL
Yam W, Lim S, Ng K, Ng F
Dept. of Urology, Changi General Hospital, Singapore

Introduction and Objectives: To compare the success rate and complication rate of ultrasound-guided versus conventional fluoroscopy-guided percutaneous nephrolithotomy (PCNL).
Materials and Methods: A total of 156 patients were identified in our PCNL database from July 2008 to September 2013. Every PCNL was performed in the prone position. Intraoperative ultrasound was used to demarcate and identify important surrounding structures e.g. lung, bowel, major blood vessels as well as to direct real time puncture of the preferred renal pole. Following US guided access into the pelvicalyceal system, the rest of the PCNL procedure was guided by fluoroscopy. For the fluoroscopy guided access into the collecting system, fluoroscopic imaging was used throughout the entire PCNL procedure.
Results: There are 53 ultrasound-guided PCNL (US-PCNL) versus 103 fluoroscopy-guided PCNL (F-PCNL). The patients are comparable in age, gender, race and ASA score. There is no statistical significance in the largest stone diameter, 28.5±0.1cm in US-PCNL vs. 31.4±0.1cm in F-PCNL (p = 0.167). US-PCNL is associated with higher rates of upper pole (7.6%), mid pole (11.2%) and multiple pole puncture (3.8%) compared to F-PCNL of 3.9%, 1.9% and 0% respectively (p = 0.008). US-PCNL has better stone free rate (43.4%) than that of F-PCNL (34.0%) (p = 0.034). US-PCNL also requires less additional procedures (19.9%) vs. F-PCNL (38.8%) (p = 0.029). On multivariate analysis, p value of stone free rate is 0.400 while need for additional procedure remains statistically significant at p = 0.045. Mean length of hospital stay is 3.0±0.4 days in US-PCNL vs. 4.7±0.6 days in F-PCNL (p = 0.020). Multivariate analysis also showed statistical significant reduction of hospital stay with p = 0.010. In terms of safety and complication, there is no clinical and statistical difference in blood loss as well as Clavien Dindo classified complications.
Conclusion: We conclude that US-PCNL is a safe and effective approach. It is particularly useful when the renal stones are best accessed from the upper or mid pole, or when multiple punctures are required.

UP.622
Long-Term Follow-Up (>20 Years) of Single Agent Studies in Seminoma Patients
Oliver T, Summasundram U, Powles T, Shamash J
Barts Cancer Institute, QMUL, London, UK

Introduction and Objectives: Seminoma is the least malignant subtype of testicular germ cell cancer and has the least risk of metastasis at presentation. Less established compared with its radio-sensitivity, is the fact that it is more chemo-sensitive than non-seminoma. Despite reporting single agent Platinum data in 1982 which supported this concept most standards of care do not treat seminoma differently from non-seminoma. This abstract reviews personal series some with more than 30 years follow-up to

support this concept and suggests future International Collaborative studies worth pursuing.
Materials and Methods: A total of 119 metastatic seminoma (19 cisplatin, 91 Carboplatin and 45 BEP) treated 1980-2006, 176 Stage 1 cases receiving either 1 or two courses of adjuvant therapy treated 1985-2006 and 54 cases receiving chemotherapy as part of testis conservation (12 single agent Platinum and 42 BEP therapy) treated between 1978 and 2006. Prior to 1996 participation was through verbal informed consent and since this time ethical committee approval has been obtained for the ongoing studies.
Results: Overall 96% (43/45) metastatic seminoma treated with BEP are currently alive, while 96% (105/110) treated with single agent platinum while relapse rates are 4% and 10% (median follow-up 80 months). For stage 1 patients, 98% (172/176) are relapse free while 97% (171/176) with a median of 108 months. Forty two percent 5/12 receiving single agent platinum for tumor in solitary testis compared with 43% (18/42) have conserved their testicle at a median 132 months.
Conclusion: While in pirmum non noce does not trump the Sword of Damocles, these results provide justification for further prospective evaluation of the less toxic option in patient preference studies. A further 5 years follow-up will be available by the time of late breaking abstract deadline.

UP.623

Lararoscopic Retroperitoneal Lymph Node Dissection for Paratesticular Rhabdomyosarcoma in Children

Mudegoudra A, Nerli R, Patil S, Guntaka A
Dept. of Urology, KLES Kidney Foundation, KLE University's JN Medical College, Belgaum, India

Introduction and Objectives: Paratesticular rhabdomyosarcomas usually present with an enlarging painless scrotal mass. A majority of patients will have clinical stage 1 disease. The most common sites of metastases are the retroperitoneum and lungs. Patients with retroperitoneal metastases should undergo a modified unilateral nerve-sparing RPLND (Retroperitoneal lymph node dissection). The increased use of minimally invasive surgery has spread to RPLND .We report on our experience with Laparoscopic-RPLND in adolescents.
Materials and Methods: Children with Paratesticular rhabdomyosarcomas presenting to us formed the study group. Children underwent detailed evaluation and imaging. The surgical procedure of laparoscopic RPLND involved placement of three ports, one 12 mm periumbilical camera port and two 5 mm ports (one midline below the xiphoid and one midline above the pubis). The colon was medialised by incising along the white line of Toldt from the spleen up to the sigmoid colon exposing the common iliac vessels bifurcation, the testicular vessels and the ureter. First, the spermatic cord was dissected out and taken down to the point of the previous orchiectomy. The ureter was dissected out from the nearby vessels to avoid ureteral injury. The peri-aortic tissue was then split to begin the dissection of the peri-aortic lymph nodes. Dissection was carried out from the renal vessels down to the bifurcation of the aorta. The common iliac, pericaval and inter-aortocaval lymph nodes were dissected out.
Results: During the study period Jan 2013 to Dec 2013, three children with a mean age of 10.3 years underwent laparoscopic RPLND. The mean operative time was 363.3 mins and the mean blood loss was 40 cc. There were no major intra/postoperative complications. The mean hospital stay was 50 hrs.
Conclusions: The increased use of minimally invasive surgery has spread to RPLND. Laparoscopic RPLND for high-risk pediatric patients with PTRMS is a safe diagnostic and therapeutic procedure with the benefit of rapid convalescence, enabling early commencement of adjuvant chemotherapy.

UP.624

Retroperitoneal Surgery for Residual Post-Chemotherapy and Recurrent Masses in Testicular Cancer

Scavuzzo A[1], Reynoso Noveròn N[2], Martinez Cervera P[1], Santana Rios Z[1], **Jimenez-Rios M**[1]
[1]Dept. of Urology, Instituto Nacional De Cancerologia, INCan, Mexico City, Mexico; [2]Dept. of Epidemiology, INCan, Mexico City, Mexico

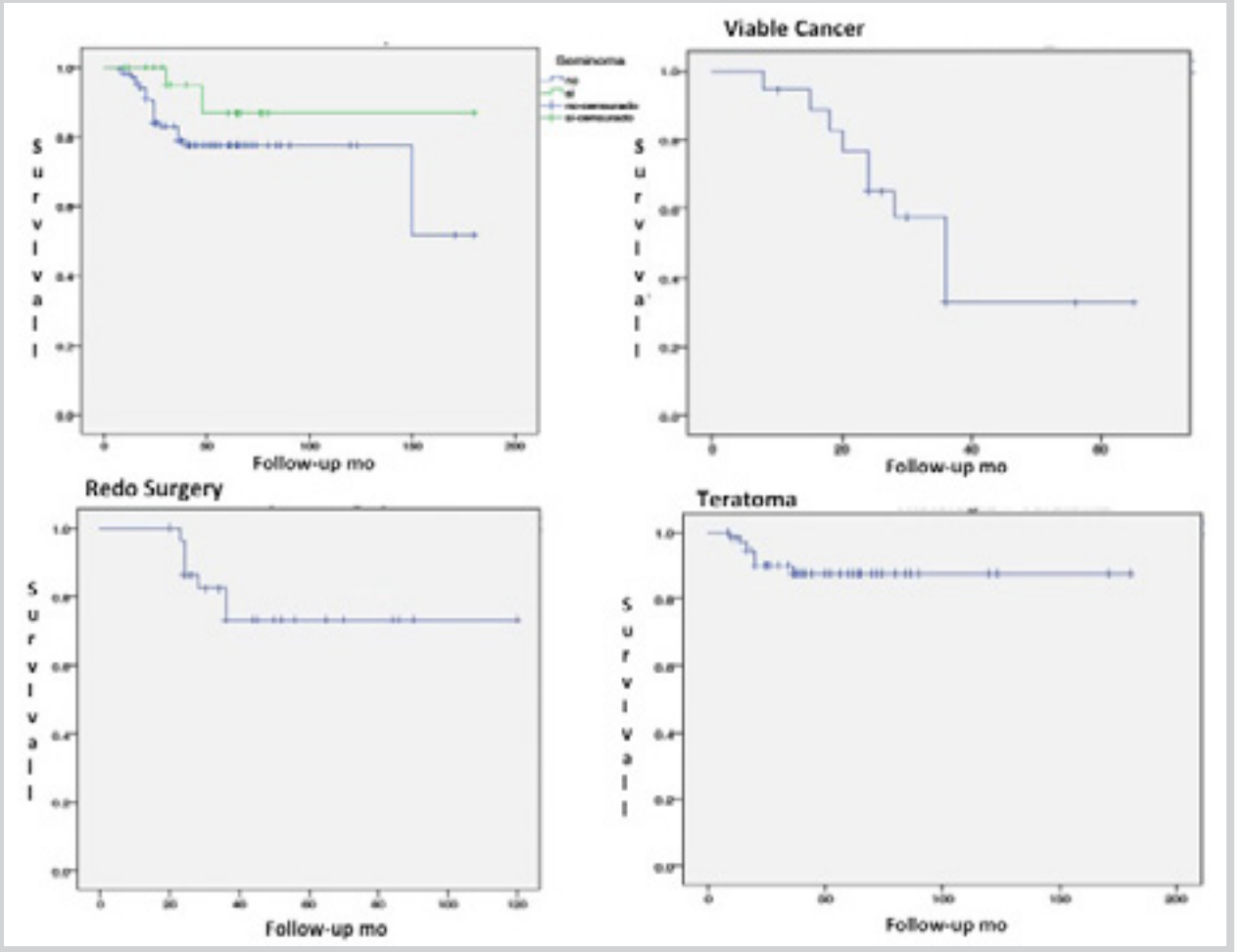
Introduction and Objectives: We report our experience in patients selected for post-chemotherapy retroperitoneal residual surgery (RRS) and in a subset of patients needing repeat retroperitoneal lymph node dissection (Redo).
Materials and Methods: We evaluated 181men with residual retroperitoneal GCT between

UP.624, Table 1.

Table 1 Pretreatment and treatment data

Parameter	No. of Patients (N=181)	
Age, years		
Median /Range	24.95 / 15- 52	
Stage at diagnosis		
I	1 (6%)	
IA	7 (3.9%)	
IB	2 (1.1 %)	
IS	2 (1.1%)	
II	2 (1.1 %)	
IIA	15 (8.3 %)	
IIB	23 (12.7%)	
IIC	30 (16.6 %)	
III	2 (1.1%)	
IIIA	15 (8.3 %)	
IIIB	17 (9.4 %)	
IIIC	63 (34.8%	
(IGCCC) Risk Classification		**Died**
Good	71 (39.2%)	8.5%
Intermediate	61(33.7%	11.5%
Poor	49(27.1%)	36.7%
Induction chemotherapy		
3 cycles BEP	54 (29.8%)	
4 cycles BEP	76(42%)	
4 cycles EP	2 (1%)	
CDDP + CFA	3 (1.7%)	
Second line chemotherapy	33 (18.2)	
Postchemotherapy diameter of the retroperitoneal mass		
No evidence	7	
< 20 mm	39	
20-50 mm	46	
> 50 mm	89	
Histology of RPLND		**Died**
Embryonal carcinoma	3 (1.7%)	2 /3 (6.5%)
Teratoma	78(43%)	8/78 (25.8%)
Yolk sac tumour	1 (.6%)	1/1 (3.2%)
Tumours mixed	13(7.2%)	7/13 (22.6%)
Necrosis	73(40.3%)	12/73(38.7%)
Seminoma	2 (1.1%)	0
Hiperplasia	11(6.1%)	1/11(3.2%)
Total	181	31
Histology of RPLND/recurrence		
Teratoma	20(25.6%)	
Necrosis/ Hiperplasia	9(10.7%)	
Tumours mixed	3(23%)	
Other histology	4(66.7%)	
Histology of REDO surgery		
Embryonal carcinoma	2	1
Yolk sac tumour	2	2
Sarcoma	2	2

UP.624, Figure 1.



2007 and 2012. Data was obtained from prospective database. Statistical analysis was performed with SSPS20. Disease-specific mortality and specific survival was estimated using Kaplan-Meier starting from diagnosis.
Results: We performed 25 and 156 RRS in seminoma and NSGTT, of those, 30 Redo. Among seminoma: 15 good and 10 intermediate prognosis groups. Normal markers (93.4%) before RRS. Size residuals ranged from 0 to 20 cm. Viable tumours were 9.9% (n=18), teratoma 43.1% (n =78) and necrosis 40.3% (n=73). Of 78 teratoma, 33 belonged to the good prognosis group, 21 and 24 intermediate and poor. Complete resection obtained 85.6%; seventeen (9.4%) unresectable: 4, 6 and 7 of the good, intermediate and poor prognostic group. Thirty seven received adjuvant chemotherapy and 28 (15.5%) surgery for non-retroperitoneal metastases, 10 of 28 died. There were 36 (19.9%) retroperitoneal recurrences, among which 25% had teratoma in initial RRS. Histologies' relapse at the RRS as shown (Table 1). It was association between histology after PC-RRS and retroperitoneal recurrence (p.002). Among the 30 redo-RRS: 8, 9 and 13 good, intermediate and poor risk. Histology Redo: 7 viable tumors, 3 necrosis, 18 teratoma, 2 without tumors and 3 with histology different from the primary tumor and retroperitoneum. Follow-up was 42.6 months (8 to 180); 31 (17%) of the 181 died of disease. Ten of the 31 died (17.2%) with viable tumor. The 5-year probabilities of DSS were 90% and 79% for seminoma and NSGC. DSS for viable tumor in RRS and teratoma were 35% and 85% (Figure 1). DSM Redo was 23% (n=7) and DSS was 70%.
Conclusion: We demonstrated excellent clinical outcome for PC-RRS instead of standard RPLND. Current series shows that residual teratoma at PC-RRS has a risk of relapse; we think that, in residual teratoma, it requires to extend retroperitoneal lymph node dissection.

UP.625

25-Year Experience in the Treatment of Clinical Stage I Testicular Seminoma in Korean People

Kim T[1], Jeon T[1], Nam J[2], Park S[2], Shin D[1], Lee D[2], Lee Z[1], Chung M[2]

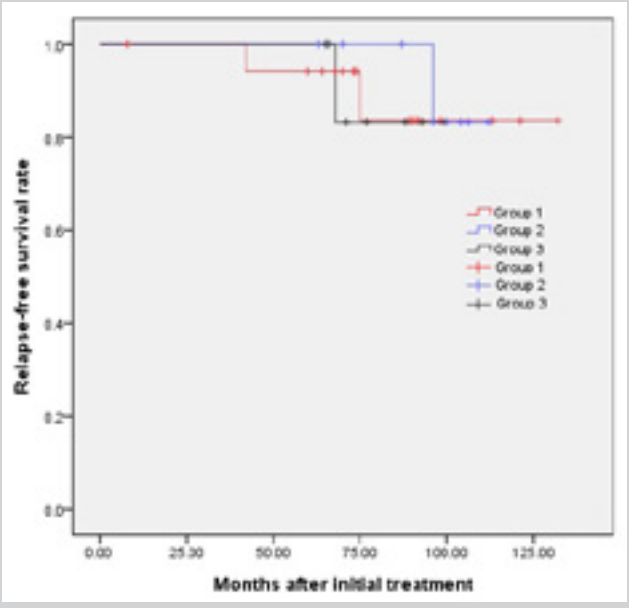
[1]Pusan National University Hospital, Pusan, South Korea; [2]Yangsan Pusan National University Hospital, Yangsan, South Korea

Introduction and Objectives: Patients with stage I seminoma of the testis may be managed by either surveillance or adjuvant treatment after orchidectomy. We analyzed the relationship between different therapeutic methods and the prognosis of this disease.
Materials and Methods: We retrospectively analyzed clinical data of 44 patients treated by multi-disciplinary approach among the 56 patients with clinical stage I seminoma, between 1984 and 2008. The patients were divided into 3 groups based on the treatment after ochiectomy: 24 patients under surveillance (Group 1), 11 treated with chemotherapy (Group 2) and 9 with radiotherapy (Group 3). The prognosis of different treatment groups was evaluated.
Results: Median follow-up time was 85 months (range, 8-132 months). Two patients in Group 1 (n=24), one in Group 2 (n=11) and one in Group 3 (n=9) relapsed respectively during follow-up period, and the site of relapse was all

UP.625, Table 1. Characteristics of Patients with Relapse

No.	1	2	3	4
Treatment Group	Surveillance	Surveillance	Adjuvant chemotherapy	Adjuvant radiotherapy
Age (years)	22	51	45	31
Site of relapse	Lt. para-aortic LN	Rt. para-aortic LN	Lt. para-aortic LN	Rt. para-aortic LN
Subsequent relapses	Lung	No relapse	No relapse	No relapse
Time to relapse (months)	42	75	96	68
Survivial	Died	Survived	Survived	Survived
Salvage therapy	Operation Chemotherapy	Chemotherapy	Chemotherapy	Chemotherapy
Follow-up Period (months)	75	102	101	72

UP.625, Figure 1. Kaplan-Meier Relapse-Free Survival Curves of Patients in Surveillance Group, Chemotherapy Group, and Radiotherapy Group



para-aortic lymph node. All patients received salvage chemotherapy at relapse. Of the four patients with relapse, one suffered a secondary relapse at lung and eventually died from the disease (Table 1). The relapse-free survival at 5 and 10 years were 94.1% and 83.7% in Group 1, 100% and 83.3% in Group 2 and 100% and 83.3% in Group 3, respectively (Log Rank, p=0.868, Figure 1). The disease-specific survival at 10 years was 84.7% in Group 1, 100% in Group 2 and 100% Group 3 (Log Rank, p=0.340).
Conclusion: The prognosis of three different treatment group is satisfactory. But, this was a small-sized and single-center study, so there was a need for large-scale, randomized multicenter study.

UP.626

Clinical Impact of 2nd Line Chemotherapy Choice for Advanced Testicular Cancer Patients with Salvage Chemotherapy

Nakamura T, Ueda T, Oishi M, Nakanishi H, Kamoi K, Naya Y, Hongo F, Okihara K, Miki T
Kyoto Prefectural University of Medicine, Kyoto, Japan

Introduction and Objectives: Twenty to 30% of patients with chemotherapy- refractory or resistant GCTs, so called 'difficult-to-treat' GCTs would remain continuously disease-free with salvage chemotherapy. Guidelines recommended paclitaxel-containing TIP therapy, VeIP, or high dose chemotherapy (HDCT) as 2nd line therapy. No definite 2nd line therapy has been revealed, such as BEP therapy. The aim of this study was to investigate the impact of 2nd line therapy choice on clinical outcome, retrospectively.
Materials and Methods: One hundred and forty one advanced GCT patients with salvage chemotherapy treated at Kyoto Prefectural University of Medicine from June 1998 to December 2012 were retrospectively assessed.
Results: Median age was 32 years (range: 17-65 years). Initial IGCCC showed good in 45 cases (31.9%), intermediate 34 (24.1%), poor 49 (34.8%), and unknown 13 (9.2%). As the 2nd line therapy, TIP/N therapy was done in 58 (41.2%), VIP/VeIP in 44 (31.2%), BEP/EP in 16 (11.3%), HDCT in 11 (7.8%), irinotecan-containing chemotherapy in 8 (5.7%), gemcitabine-containing therapy in 2 (1.4%), and others in 2 (1.4%), respectively. Four-year overall survival rate was 72.8% in TIP/N, 72.8% in VeIP/VIP, 68.8% in BEP/EP, 54.5% in HDCT, 87.5% in irinotecan-containing therapy, 50% in gemcitabine-containing therapy, and 0% in others, respectively. There was no significant difference between any of the groups, however, HDCT and others groups showed relatively poorer outcome.
Conclusion: TIP/N and VeIP/VIP would have been considered as equivocal effect as 2nd line therapy. The recommendation of guidelines could be acceptable in the real clinical field.

UP.627

Where Did We Lose Retroperitoneal Lymphadenectomy in CS1 NSGCTT?

Djozic J[1], **Djozic S**[1], Bogdanovic J[1], Sekulic V[1], Donat D[2], Zivojinov S[1], Djozic M[3], Marusic G[1]
[1]Clinic of Urology, Novi Sad, Serbia; [2]Institute of Oncology, Sremska Kamenica, Serbia; [3]Clinic of Otorhinolaryngology, Novi Sad, Serbia

Introduction and Objectives: Three therapeutic options for Clinical Stage 1 Non Seminomatous Germ Cell Testicular Tumors (CS1NSGCT) are established. Surveillance - low risk/high risk CS1NSGCTT - relapse rate 15-50%. Chemotherapy - high risk CS1NSGCTT - relapse rate 2-4%. Retroperitoneal lymphadenectomy (RPLND) - low/high risk CS1NSGCTT - cure rate over 85%. The most optimal therapy in this stage is not clearly defined. This study will show where we lost RPLND, comparing results before and after 2003.
Materials and Methods: From 1986-2013, 358 patients (pts) with testicular tumors were treated at our clinic: 216 from 1986-2002, 142 from 2003-2013. After semicastaration, pts with CS1NSGCTT underwent RPLND (before 2003), chemotherapy or surveillance.

RPLND was done at our clinic and chemotherapy at Institute of Oncology, Sremska Kamenica. After 2003, RPLND was done only in CS2 or CS3, after chemotherapy in case of enlarged lymph nodes (LN) > 1 cm. CS1 was treated only with two cycles of PEB. Surveillance was ruled out due to patients' in acceptance and cost effectiveness.
Results: From 1986-2002, 89 pts with CS1NSGCTT have been treated at our Clinic: 41, 45 and 3 pts received RPLND, 2 cycles of PEB and surveillance, respectively. In Group I – 19.5% (8/41) had positive LN, and 2 (3) cycles of PEB were prescribed. The follow-up survival rate was 100%, without relapse. In Group II and III - 2.2% (1/45) and 33.3% (1/3) developed enlarged RPLN in follow-up. In these groups, 2 additional PEB protocols were administrated. In period 2003-2013, 85 pts in CS2/3 underwent RPLND after chemotherapy and enlarged LN > 1 cm. Fifty seven pts with CS1NSGCTT were treated with only 2 cycles of PEB - relapse rate 3,5% (2 pts), survival 100%. RPLND was done in case of relapse (2 pts).
Conclusion: Chemotherapy with 2 cycles of PEB protocol showed excellent survival rate, small relapse percent, minimal toxicity. It was the reason for changing the protocol and ruling out RPLND from CS1NSGCTT as therapeutic option. However, we think there is still place for RPLND in this stage, especially today in era of laparoscopic/robotic surgery, respecting pts' wish in decision making process.

UP.628
Testis Sparing Surgery in the Treatment of Testicular Germ Cell Tumors
Bojanic N[1], **Bumbasirevic U**[1], Vukovic I[1], Bojanic G[2], Milojevic B[1], Nale D[1], Durutovic O[1], Djordjevic D[1], Vuksanovic A[1], Tulic C[1], Micic S[1]
[1]Clinic of Urology, Clinical Center of Serbia, Belgrade, Serbia; [2]Urology Clinic "Dr Bojanic", Belgrade, Serbia

Introduction and Objectives: The aim of this study was to assess the oncologic and functional outcomes of testicular sparing surgery (TSS) based on a single institution experience.
Materials and Methods: From October 1996 to July 2013, 41 patients with bilateral testicular germ cell tumors (BTGCT) and 3 patients with solitary testicle tumors (STT) were referred our institution for further treatment. The inclusion criteria for TSS were normal serum testosterone levels before surgery, and tumor size. Preoperative evaluation of patients included physical examination, analysis of tumor markers and hormone status, scrotal ultrasound, abdominal CT, and lung X-ray. Sperm analysis was performed preoperatively and postoperatively. The surgical procedure consisted of testicular exploration via inguinal approach. Tunica albuginea above the tumor was incised and the tumor was removed together with the surrounding apparently healthy tissue. Additional biopsies of surrounding tissue and distant regions were taken. Postoperatively follow-ups were performed once a month in the first year, every two months in the second year, every four months in the third year, and every six months thereafter. None of the patients underwent local radiation therapy following TSS for reasons of fertility preservation.
Results: Total of 26 TSS were performed in 21 in patients with BTGCT and 3 patients with STT, while re-do TSS was done in 2 patients. The mean follow-up period was 55.3 months. Seven patients developed local recurrence 4-60 months after TSS (mean 20.14 months), of which 5 had TIN and were subjected to radical orchiectomy, whereas re-do TSS was done in 2 patients after 8 and 12 months. The overall survival was 100%, and the presence of TIN was associated with worse recurrence-free survival (P= 0.031, log-rank). During the follow-up testosterone values were normal in all of the patients, while spontaneous conception occurred in 2 patients, and another 2 achieved conception with assisted reproductive technique.
Conclusions: TSS is acceptable from an oncological point of view, and enables continuation of a patient's life without the need for lifelong hormonal substitution. Additionally, adjuvant local irradiation therapy could be delayed in patients with TIN, who wish to father children, but with high local recurrence rate.

UP.629
Pazopanib in Chemoresistant Patients with Germ Cell Tumors (GCT): Updated Results of the Open-Label, Single-Group, Phase 2 Pazotest-01 Trial
Necchi A, Giannatempo P, Nicolai N, Farè E, Raggi D, Marongiu M, Piva L, Biasoni D, Catanzaro M, Torelli T, Stagni S, Maffezzini M, Togliardi E, Salvioni R, De Braud F, Massimo Gianni A
Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

Introduction and Objectives: Patients (pts) with GCT who fail to be cured following multiple chemotherapy (CT) courses (± high-dose CT) have an extremely poor prognosis and long-term remissions are anecdotal. Pazopanib (PZP) is a potent and selective, orally available, TKI of VEGFR1, 2, and 3, PDGFRα, PDGFRβ, and cKit. We updated the initial results of the ongoing open-label, single-group, phase 2 study which is sponsored by INT Milano (ClinicalTrials.gov NCT01743482).
Materials and Methods: Patients failing at least 2 platinum-based CT (including high-dose CT) received PZP 800 mg/day orally until disease progression (PD) or evidence of unacceptable toxicity/side effects. All pts underwent measurement of serum tumor markers (STM), a computed tomography and a FDG-PET after 1 month and q2 months thereafter. In a Simon's 2-stage design, the primary endpoint is 3-month progression-free survival (PFS). In stage 1, 18 evaluable patients will be accrued. If ≥ 3 pts will be progression-free at 3 months, enrolment will be extended to the 2nd stage.
Results: From 06 to 12/2013, 9 patients have been enrolled, 6 in fourth and 3 in fifth-line. Median age was 38 years (IQR: 32-42). Eight were nonseminomas, 3 had a teratoma with malignant transformation, 3 had failed HDCT, 2 had liver metastases. Seven pts (77.8%) showed an early response after 4 weeks of treatment, and it was a marker +/- dimensional partial response (RECIST, PRm+). One had a stable disease, one a PD. In addition patients showed a densitometric response (N=3) or a reduction of FDG uptake (N=2). At +3 month-restaging, 3 patients (33.3%) were progression-free. Two patients (22.2%) had G3 AST/ALT increase and needed temporary discontinuation of PZP. One case had G2 hypertension and diarrhea.
Conclusion: The study has already met the PFS requirements (3 progression-free patients at +3 months) to complete the full accrual of 43 patients. The activity of pazopanib was mainly seen as a reduction of STM, as expected. However responses were also seen in patients yielding divergent histologies. Additional considerations on non-conventional response (densitometric and metabolic) assessment will require more cases.

UP.630
Enhancing Risk Stratification in Primary Mediastinal Nonseminomatous Germ Cell Tumors (PMNSGCT): A 27-Year Experience at a Tertiary Cancer Center
Necchi A, Giannatempo P, Lo Vullo S, Farè E, Raggi D, Nicolai N, Piva L, Biasoni D, Torelli T, Catanzaro M, Stagni S, Maffezzini M, Scanagatta P, Massimo Gianni A, Mariani L, Salvioni R, Pastorino U
Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

Introduction and Objectives: Mediastinal GCTs and PMNSGCTs poorly benefit from CT and half of patients (pts) still die for disease. Enhancing the risk stratification may result in tailoring a personalized treatment strategy since diagnosis.
Materials and Methods: Between 1985 and 2012, 87 pts with primary mediastinal GCT were treated at our center. Of them, pure seminomatous histology was excluded. Multivariable analysis (MVA) of overall survival (OS) for baseline pre-specified factors included: type of 1st-line CT (high [HDCT] vs. conventional dose [CDCT]), post-CT surgery, type of elevated

serum tumor marker (STM) at baseline, presence of lung or liver-bone-brain metastases (LBB), and STM response (still elevated vs. normal or normalized). A separate MVA for operated pts only included preoperative STM, radicality, concomitant lung resection, and histology.
Results: The study included 68 cases with PMNSGCT. Median age was 28.5 years (IQR: 23-35). Twelve pts (17.7%) presented with mediastinal syndrome, 23 (33.8%) had lung and 7 (10.3%) LBB metastases. Twelve pts received upfront HDCT and 45 pts (66.2%) underwent post-CT surgery. The multivariable analysis for OS showed as significant risk factors no surgery (HR: 2.52, 95%CI, 1.00-6.34, p=0.0496) and presence of lung metastases (HR: 2.77, 95%CI, 1.11-6.94, p=0.030) (c-statistic= 0.5996). A risk model with 0, 1 and both prognostic factors identified a distinct subset of pts with good prognosis (n=22, 5-year OS: 76.7%, 95%CI, 58.5-100, p=0.018). The only significant factor in the surgical cohort was histology of viable cancer (HR: 4.98, 95%CI, 1.05-23.68, p=0.044). Pre-operative STM and final histology were not associated (p=0.574 at Chi squared test). Five-year OS of operated STM+ (n=13) was 64.5% (95%CI, 41.3-100) and OS after receiving 2nd-line CT (n=25) was 18.7% (95%CI, 7.9-44.5). Results are limited by small numbers.
Conclusions: Selected patients with PMNSGCT like those undergoing surgery and without lung metastases (22/68) had a fairly good prognosis. The add-on effect of surgery on survival was independent of post-CT STM, which also poorly predicted final histology. This model warrants confirmation.

UP.631

Nodulectomy as a Rationale Alternative to Radical Orchiectomy for Patients with Low Risk Testicular Sex Cord-Stromal Tumors

Necchi A, Nicolai N, Raggi D, Giannatempo P, Farè E, Piva L, Biasoni D, Catanzaro M, Torelli T, Stagni S, Paolini B, Colecchia M, Salvioni R
Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

Introduction and Objectives: Testicular sex cord stromal tumors (TSCST) are very rare neoplasms and limited information is available as regards the optimal therapeutic approach. We aimed to assess the clinical outcomes of a series from a single referral center.
Materials and Methods: We retrospectively identified patients who received treatment or post-surgical follow-up at our center. Testicular surgery was accompanied by retroperitoneal lymph-node dissection (RPLND) in some cases. Recognized clinical and histopathological features were collected, including histology, vascular invasion, presence of nuclear atypia, necrosis, elevated mytotic index, infiltrating margins, and tumor diameter. Clinical stage and the presence of gynecomastia were also recorded. Kaplan Meier method was used to estimate the recurrence free survival (RFS) and cancer specific survival (CSS).
Results: From 12/1982 to 01/2013, 69 patients have been identified in our records. Median age was 44 (IQR: 32-50); 56 patients (81.2%) had a Leydig cell tumor, 12 (17.4%) a Sertoli cell tumor, and one case a TSCST undetermined. Four patients presented with gynecomastia. Fifty-two patients (75.4%) did not yield any histological risk feature, 8 (11.6%) one, and 9 (13%) two or more features. Thirty-one (44.9%) received tumor enucleation only while 38 (55.1%) a radical orchiectomy followed by RPLND in 7 cases. Of the former, 28 (90.3%) had no risk features, all of them had a clinical stage I disease. The median tumor diameter was 0.8 cm (IQR: 0.6-1.3) and 1.5 cm (0.9-3.1) in the two groups, respectively. After a median follow-up of 37.4 months (IQR; 12.6-82.9), six patients relapsed and three died, all in the orchiectomy group. Five-year RFS and CSS was 87.5% (95%CI, 73.9-94.3) and 90.6% (95%CI, 73.5-96.9), respectively. Results are biased by the retrospective and non comparative quality.
Conclusion: In this large retrospective series, we were able to observe that a testis-sparing surgery is a feasible and effective approach for patients presenting with TSCST and low risk features. This approach should be recommended in clinical practice.

UP.632

Laparoscopic Retroperitoneal Lymph Node Dissection after Chemotherapy: The Argentinean Community Hospital Experience

Vitagliano G[1], Rozanec J[2], Featherston M[2], Ameri C[1], Rios Pita H[1], Castilla R[1], Fernandez Long J[1]
[1]Hospital Aleman, Buenos Aires, Argentina; [2]Hospital Britanico, Buenos Aires, Argentina

Introduction and Objectives: Residual masses secondary to chemotherapy for advanced germ cell tumors may warrant surgical removal. Laparoscopic approach has previously been proposed in this setting. However, technical proficiency is mandatory and this procedure is usually reserved for high volume specialized centers. We report a two-center experience.
Materials and Methods: The records of the German and British Community Hospitals were analyzed. A total of 8 patients underwent laparoscopic retroperitoneal lymph node dissection (RPLND) after chemotherapy due to a residual retroperitoneal mass. Demographic, perioperative and oncologic data were analyzed.
Results: All patients received multiagent chemotherapy for clinical stage IIA disease. Patients underwent bilateral RPLND for a residual mass larger than 3 cm and in one case for two 2 cm masses. Mean age was 30 years, mean ASA score was 1, mean operative time was 158 minutes (60 to 200 min), mean surgical bleeding was 70 ml (50 to 100 ml). There were neither intraoperative incidents nor the need for conversion. All patients evolved uneventfully and were discharged between postoperative day 1 and 3 with a mean hospital stay of 2 days. Mean lesion size was 5 cm (2 to 8 cm). Surgical margins were negative in 7 out of the 8 cases. The patient with a positive surgical margin had active disease in the final pathological specimen and died within the year. Out of the 7 remaining cases, 5 had remnant fibrosis and 2 had mature teratoma on final pathological analysis. Mean follow-up was 25 months (2 to 67 months).
Conclusions: Laparoscopic retroperitoneal lymph node dissection after chemotherapy is feasible and safe. This procedure is very challenging and not routinely performed, therefore it should be reserved for centers with a considerable laparoscopic experience.

UP.633

The Role of Primary Retroperitoneal Lymph Node Dissection for Stage I Non Seminomatous Germ Cell Testis Cancer: Is It Too Much?

Araujo L, de Oliveira A, da Silva A, Vanni A, Sala F, Schaal C, Costa R
Hospital Amaral Carvalho, Sao Paulo, Brazil

Introduction and Objectives: The excellent survival of patients with non-seminomatous germ cell tumors (NSGCT) generates controversy regarding treatment in its early stages. The primary retroperitoneal lymphadenectomy (P-RPLND) remain as an integral component of the treatment, not only staging more accurately than the imaging methods, such as avoiding the side effects of chemotherapy. The objective of the study is to analyze the results of the P-RPLND for NSGCT in clinical stage I (CSI) and the risk factors for retroperitoneal metastasis.
Materials and Methods: Data were collected from 57 consecutive patients with NSGCT CSI treated with P-RPLND between January 1982 and April 2009. All patients were evaluated preoperatively with chest x-ray, testicular markers and CT of the abdomen and pelvis. An evaluation of patient characteristics and surgical complications while the presence of embryonal carcinoma > 40% (EC > 40%), angiolymphatic invasion (AL) and the presence of teratoma in the testis were correlated with lymph node metastasis.
Results: The median age was 29 (16-51) years. The median size of testicular tumor was 5.9 (1.4-17.0) cm. The average number of lymph nodes resected was 13.9. The median operative time was 78 (30-130) min. After the P-RPLND, 23/57 (40%) patients had lymph node metastasis. The presence of EC > 40% was found in 20/57 (35%) patients. AL was

observed in 9/57 (15.7%) and the presence of testicular teratoma was observed in 30/57 (52%). The presence of AL increased to 66.6% the risk of lymph node metastasis, whereas the presence of testicular teratoma increased from 3% to 13% probability of retroperitoneal teratoma. The presence of EC > 40% did not increase the risk of retroperitoneal metastasis. Postoperative complications occurred in 7% of patients, among retrograde ejaculation (2), lymphocele (1) and abscess (1).
Conclusions: The P-RPLND remains effective for diagnosing lymph node metastasis in patients with CSI NSGCT, besides presenting low complication rates. The risk of retroperitoneal disease increases significantly in the presence of AL. The testicular teratoma can be a predictor of retroperitoneal teratoma, histologic type with poor response to chemotherapy.

UP.634
Post-Chemotherapy Retroperitoneal Lymph Node Dissection in the Management of Metastatic Testis Cancer: The 16-Year Experience in an Irish Setting
Considine S[1], Heaney R[1], Casey R[2], Thornhill J[1]
[1]Tallaght Hospital, Dublin, Ireland; [2]Colchester Hospital, Colchester, UK

Introduction and Objectives: Post Chemotherapy Retroperitoneal Lymph Node Dissection (PC-RPLND) is an important tool in the management of advanced testis cancer, particularly Non Seminomatous. We present the 16-year experience with this surgery in a single Irish Tertiary Referral Center.
Materials and Methods: Patients undergoing PC-RPLND for metastatic testis cancer between January 1996 and December 2011 were included. Medical records were reviewed and up to date follow-up obtained from referral centres, patient's GPs and individual patient interview by phone.
Results: A total of 78 patients were identified for inclusion. The mean age at diagnosis was 29±7.7 years. Sixty three percent of patients suffered from NSGCT. All patients underwent pre-operative chemotherapy, of which 92% received BEP based regimes. The resection template utilised was bilateral in 28%, unilateral in 42% and suprahilar in 21%. Complete abdominal remission was achieved in 98%. Additional procedures were required in 43% of patients. Histology of RPLND specimen showed teratoma in 42% and active cancer in 13%. Median follow-up was 101 months. Seven patients relapsed, while overall 5 year survival was 95.2% (4 deaths).
Conclusions: We have shown comparable results and outcomes of PC RPLND compared to major international centres. Given the low numbers requiring this surgery in Ireland, we advocate a single centre of excellence be established to ensure optimal patient outcomes.

UP.635
Feasibility and Outcomes Regarding the Open and Laparoscopic Radical Prostatectomy after Previous Synthetic Mesh Hernia Repair: Meta-Analysis and Systematic Review of 7497 Patients
Picozzi S[1], Ricci C[1], Bonavina L[2], Bona D[2], Stubinski R[1], Macchi A[1], Ratti D[1], Marenghi C[1], Bozzini G[1], **Carmignani L**[1]
[1]Dept. of Urology, IRCCS Policlinico San Donato, Milano, Italy; [2]Dept. of General Surgery, IRCCS Policlinico San Donato, Milano, Italy

Introduction and Objectives: The purpose of this article is to contribute information to the interpretation of the feasibility and outcomes regarding the open, laparoscopic and robotic strategies of radical prostatectomy after previous synthetic mesh inguinal hernia repair.
Materials and Methods: A bibliographic search covering the period from January 1980 to September 2012 was conducted in PubMed, MEDLINE and EMBASE. Database searches yielded 28 references. This analysis is based on the eleven studies that fulfilled the predefined criteria.
Results: A total of 7497 patients were included. In the study group there were 462 patients. In five studies radical prostatectomy was performed by and open technique, in three by laparoscopy and in 3 by robotic. In the control group there were 7035 patients. The comparison of the open procedure performed in patients with a previous mesh-herniorrhaphy and controls shows that the number of lymph nodes removed resulted significantly lower and hospital stay with catheterization time result statistically longer. The comparison of the laparoscopic procedure doesn't show a statistically significant difference in terms of blood loss, operative time and catheterization time. The comparison of robotic prostatectomy could not be performed for the lack of data.
Conclusion: All patients need an adequate informed consent regarding the many aspect that could be influenced by the mesh such as the possibility of hernia recurrence, mesh infection, need for mesh explantation, possibility of mesh erosion into the bowel or bladder, bladder-neck contractures or postoperative urinary incontinence and a compromised nodal staging.

UP.636
Urological Treatment for Syrian War Victims with Spinal Cord Injury
Glott T[1], Lahlouh M[2], Harrak A[2], Aljabri B[3], Talseth T[4], Stensrød G[1]
[1]Sunnaas Hospital, Nesodden, Norway; [2]NORWAC, Oslo, Norway; [3]Akershus University Hospital, Lørenskog, Norway; [4]Oslo University Hospital, Oslo, Norway

Introduction and Objectives: The ongoing war in Syria has resulted in a significant number of patients with injuries to the spinal cord or nerve roots. In most cases, the patients will experience a significant change in bladder, bowel and sexual function. The consequences of bladder dysfunctions may be life threatening if not treated in an appropriate manner. The objective is a Norwegian-Syrian collaboration to establish a clinic for Syrian victims.
Materials and Methods: Medical history and symptoms are recorded using ISCOS datasets translated into Arabic (*International Spinal Cord Injury Society*). Cystometry is done and interpreted according to the ISCOS dataset. Ultrasound is used imaging kidneys and bladder. By the end of March, 128 patients with spinal cord injury have been screened. Cystometry has been performed in 64 patients and 18 have had repeated examinations to assess efficacy of medical treatment.
Results: So far 55 patients have been trained to use intermittent catheterization in a total of 110 sessions, while 27 patients are still using indwelling catheter. Six patients have refused cystometry and 7 patients have been lost to follow-up. Five patients had a urethral obstruction. A total of 177 have been examined with ultrasound, and in 12 patients either kidney or bladder stones were revealed. These patients have been referred for further treatment. Urinary dysfunction has severe consequences for morbidity, mortality and quality of life. So far about 2/3 of the patients have been converted from indwelling catheters to a more safe technique of bladder emptying. Results from cystometry give information about risk factors, need for medication as well as deciding on preferred method and frequency of bladder emptying.
Conclusion: Providing modern equipment and training for Syrian doctors and nurses in spinal cord injury, has been an effective way to establish a specialized clinic. A significant proportion of the patients will have an improved bladder management that prevents future complications in the kidneys and urinary tract. In war zones there may be a significant delay of follow-up, and thus a risk for irreversible complications by the time of examination. Easy access specialized clinics may prevent such an outcome.

UP.637
Adoption of the European Working Time Directive: Effects and Implications for Urology Training in Ireland
Considine S, Walsh A, Thomas A, Mc Dermott T, Lynch T, Manecksha R
St James's Hospital, Dublin, Ireland

Introduction and Objectives: The European Working Time Directive (EWTD) - 2003/88/EC - was transposed into Irish law by the European Communities (Organisation of Working Time) (Activities of Doctors in Training) Regulations 2004. However, to date there

has been minimal application of its principles to work practices in surgery. In the past year, following pressure from the European Commission, and industrial action by junior doctors, there has been renewed emphasis placed on the restructuring of rosters to align with EWTD requirements. Objectives: 1) To examine current working hours of Urology trainees in Ireland and assess adherence to EWTD. 2) To investigate how proposed strategies for adoption would aid in achieving compliance with Irish statutory requirements, while also safeguarding urological training.
Materials and Methods: Timesheets were reviewed from trainees on Higher Surgical Training and Basic Speciality Training in Urology. All urology training hospitals were included, with 2 trainees from each hospital (where applicable) assessed. Data recorded included weekly onsite hours (including on-call), off-site on-call hours and length of on-site shift.
Results: Timesheets from 15 trainees across 8 hospitals were reviewed. Mean weekly onsite working hours were 64.6 +/- 7.55. Median off site on call commitment was 16.375 hours (0 – 33.9). The average length of onsite shift was 12.47 +/- 2.36, falling just within directive limits. Mean weekly hours in excess of EWTD regulations were 16.585 +/- 7.56. The proposed quota of 6 "training hours" per week reduced this deviation to 10.58 +/- 7.56 hours. In all but two hospitals, on-call outside of working hours is provided on an off-site basis. Data was skewed by 2 hospitals with alternative on-call arrangements: one where the entire on-call shift is on-site and another where there is no out-of-working hours on-call cover.
Conclusion: The application of EWTD, even incorporating proposals such as dedicated training hours, will have a significant impact on the working practices of urology trainees in Ireland. It is imperative that we learn from the experiences of other countries, and ensure that the directive is adopted in such a way that we protect patient safety, but also safeguard the training of high quality urologists capable of independent practice.

UP.638
Performing a Pure Laparoscopic Right Heminephroureterectomy for Urothelial Carcinoma of Renal Pelvis in a Horseshoe Kidney
Ogasawara M[1], Iwabuchi I[1], Kawaguchi T[1], Tanaka T[1], Ohyama C[2]
[1]Aomori Prefectural Central Hospital, Aomori, Japan; [2]Hirosaki University, Aomori, Japan

Introduction and Objectives: There are few reports about the pure laparoscopic nephroureterectomy for pelvic cancer in a horseshoe kidney. This report is about a case in which we performed a pure laparoscopic heminephroureterectomy.
Materials and Methods: Rotating the 3DCT angiography image indicated an artery was branching out from the inferior mesenteric artery to the horseshoe kidney. A pure laparoscopic right heminephroureterectomy was performed under general anesthesia. Four ports were setup in the right abdominal region as the patient lied in the left lateral position. Since the vicinity of the isthmus was not clear, it was set aside and we started with the right kidney's hilus to obtain its mobility. Performing an ultrasonography during surgery revealed a strong arterial blood flow in the planned dissection area for the Isthmus. After carefully inspecting the branching of the inferior mesenteric artery, branching to the isthmus was identified. The isthmus was cut with LigaSure, and a continuous Vicryl suture was performed on the cut off section.
Results: Operation time: 296 minutes. Amount of bleeding: 100 ml. The day after the operation the patient could walk. Pathology: Urothelial carcinoma, grade 2. A year after the surgery, no tumor was recognized by CT. 3DCT angiography and US during surgery was useful in identifying the arteries. The structure around isthmus of horseshoe kidney is very complicated, but after cutting vessels and obtaining mobility, dissecting the isthmus could be easily completed.
Conclusion: Identifying the aberrant vessels to the isthmus is the key to success of completing a pure laparoscopic heminephroureterectomy for renal pelvic cancer in a horseshoe kidney.

UP.641
Impact of Non-Muscle-Invasive Bladder Tumor History in Patients with Upper Urinary Tract Urothelial Carcinoma
Milojevic B, Djokic M, Kajmakovic B, Pejcic T, Acimovic M, Milkovic B, Milenkovic Petronic D, Dzamic Z
Clinic of Urology, Clinical Center of Serbia, Belgrade, Serbia

Introduction and Objectives: To evaluate the prognostic factors for survival and disease recurrence in patients treated surgically for UTUC, focusing especially on the impact of history of non-muscle-invasive bladder cancer.
Materials and Methods: A single-center series of 221 consecutive patients who were treated surgically for UTUC was evaluated. Patients who had a history of bladder tumor at a higher stage than the upper tract disease, preoperative chemotherapy, or previous contralateral UTUC were excluded. In total, 183 patients (mean age 66 years, range 36–88) were then available for evaluation. Tumor multifocality was defined as the synchronous presence of 2 or more pathologically confirmed tumors in any upper urinary tract location. All patients were treated with either open radical nephroureterectomy (RNU) or open conservative surgery. Recurrence-free probabilities and cancer-specific survival were estimated using the Kaplan-Meier method and Cox regression analyses.
Results: Fifty-one patients (28%) had previous carcinoma not invading bladder muscle. Previous history of non-muscle-invasive bladder cancer was significantly associated with tumor multifocality ($P = 0.001$), concomitant bladder cancer ($P = 0.001$), higher tumor stage ($P = 0.020$), and lymphovascular invasion ($P = 0.026$). Using univariable analyses, history of non-muscle-invasive bladder cancer was significantly associated with an increased risk of both any recurrence (HR = 2.17; $P = 0.003$) and bladder-only recurrence (HR = 3.17; $P = 0.001$). Previous carcinoma not invading bladder muscle (HR = 2.58; $P = 0.042$) was an independent predictor of bladder-only recurrence in multivariable analyses. Overall 5-year disease recurrence-free (any recurrence and bladder-only recurrence) survival rates were 66.7% and 77%, respectively. Using multivariate analysis, pT classification (HR = 12.82; 95% CI = 3.49–47.06; $P = 0.001$) and lymph node status (HR = 6.02, 95% CI = 1.81–19.97; $P = 0.003$) were the only independent predictors associated with worse cancer-specific survival.
Conclusions: Patients with previous history of non-muscle-invasive bladder cancer had a higher risk of having multifocal and UTUC with higher tumor stages. History of bladder tumor was an independent predictor of bladder cancer recurrence but had no effect on non-bladder recurrence, and cancer-specific survival in patients who underwent surgical treatment of UTUC.

UP.642
Ureteroscopic Management of Upper Tract Urothelial Carcinoma (UTUC) from a Single Centre
Wadhwa V**, Abraham R**, Syed H
Heart of England NHS Foundation Trust, Birmingham, UK

Introduction and Objectives: Endoscopic management of UTUC is increasingly practised, but there are few published studies. We evaluated the outcome of flexible ureterorenoscopy (FURS) for UTUC in a single centre by one surgeon.
Materials and Methods: Between January 2008 and October 2013, 41 UTUC patients underwent retrograde FURS for diagnostic biopsy, treatment (Holmium:YAG vaporisation) and follow-up.
Results: Median age was 74 years (range 45-93; 76% male, 24% female). Indications included multiple comorbidities (22%) and solitary kidney (5%). Median eGFR was 59 ml/min (range 29-90). Previous TCC bladder was documented in 51%. Presentation included: haematuria & CTU (49%), tumour/abnormal area around UO on cystoscopy (27%), CTU

findings alone (17%), loin pain & CTU (7%). Bilateral disease was seen in 2%, unilateral right (44%) and left (54%). Tumour involved renal pelvis/calyceal (22%) and ureter (78%) (Of these: Prox 3%, Mid 25%, Distal 72%). Median tumour size was 10mm (range 4-30). Tumour biopsy stage was: pTa (59%), pT1 (12%), pT1CIS (7%) and insufficient for analysis (22%). Grade: G1 (41%), G2 (27%), G3 (10%) and insufficient for analysis (22%). Adjuvant MMC was given in 27% and BCG in 7%. Complications included urethral stricture (n=1) and haematuria (n=1). Over median follow-up of 31 months (m) (range 2-70), 24 Upper Tract (UT) recurrences occurred in 17 patients (41%): of these ipsilateral (88%) and contra-lateral (12%). Median (range) time to first (n=16) second (n=5), third (n=3) UT recurrence was 7m (3-18), 20m (12-30), 31m (13-43) respectively. UT recurrence rates stratified to grade: G1 (29%), G2 (22%), G3 (100%). Bladder recurrences were seen in 32%, median time 16m (8-43). Five patients required nephrouretectomy (two with Grade 2 and three with Grade 3 UTTCC). Four patients died, 2 of metastatic TCC (5%).

Conclusion: FURS can be used in selected cases (low grade and stage) of UTUC with close surveillance.

UP.643

Preoperative Prediction of Cancer-Specific Mortality after Nephroureterectomy for Patients with Upper Urinary Tract Urothelial Carcinoma: Preoperative Multivariate Model Incorporating C-Reactive Protein

Saito K[1], Ishioka J[1], **Fujii Y**[1], Matsuoka Y[1], Numao N[1], Koga F[2], Ohtsuka Y[3], Arisawa C[4], Kamata S[5], Nagahama K[6], Morimoto S[6], Tsujii T[7], Kitahara S[8], Noro A[9], Goto S[10], Kageyama Y[11], Yonese J[12], Kihara K[1]

[1]Dept. of Urology, Tokyo Medical and Dental University Graduate School, Tokyo, Japan; [2]Dept. of Urology, Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital, Tokyo, Japan; [3]Dept. of Urology, Omori Red Cross Hospital, Tokyo, Japan; [4]Dept. of Urology, Tobu Chiiki Hospital, Tokyo, Japan; [5]Dept. of Urology, Soka Municipal Hospital, Soka, Japan; [6]Dept. of Urology, Kohnodai Hospital, Ichikawa, Japan; [6]Dept. of Urology, Tsuchiura Kyodo General Hospital, Tsuchiura, Japan; [7]Dept. of Urology, Tokyo Metropolitan Ohtsuka Hospital, Tokyo, Japan; [8]Dept. of Urology, Tama Nanbu Chiiki Hospital, Tokyo, Japan; [9]Dept. of Urology, Saitama Red Cross Hospital, Saitama, Japan; [10]Dept. of Urology, Hamamatsu Medical Center, Hamamatsu, Japan; [11]Dept. of Urology, Saitama Cancer Center, Ina, Japan; [12]Dept. of Urology, The Cancer Institute Hospital of JFCR, Tokyo, Japan

Introduction and Objectives: Nephroureterectomy (NU) is the standard of care for upper urinary tract urothelial carcinoma (UTUC). However, perioperative multimodal approaches are needed to improve the outcome. Neoadjuvant systemic chemotherapy would be feasible because not all UTUC patients would be suitable for adjuvant treatment due to comorbidities and impaired renal function after NU. Preoperative estimation for an individual's probability of survival could lead to appropriate patient selection for the neoadjuvant treatment. We aimed to develop the preoperative multivariate model with C-reactive protein (CRP), which has been shown to have a significant prognostic factor, to predict the cancer-specific survival (CSS) for UTUC patients.

Materials and Methods: Among 1326 UTUC patients in our database, 1202 patients treated by NU without distant metastasis, whose all variables were available, constituted the current study cohort. Patients were randomly divided into two groups (training set: n = 801, validation set: n = 401). Along with CRP, preoperative valuables were analyzed for the prognostic significance. Nomogram for CSS was developed based on the results of a COX proportional hazard model. Its efficacy and clinical usefulness were evaluated using c-index and decision curve analysis.

Results: The follow-up period was a median of 39 months, and during this period, 251 patients (21%) died of disease. Age, BMI, CRP, cT and nodal status were independent predictors of CSS in a preoperative multivariate model. CRP improved the predictive accuracy of the multivariate model to 71% from 69% in the training set. The predictive accuracy of the preoperative nomogram was 74% in the validation set. The calibration plots for the validation set indicated a well-balanced and evenly distributed prediction. The decision curve analyses showed that the nomogram with CRP showed a higher net benefit, compared to a nomogram without CRP.

Conclusions: The preoperative nomogram incorporating CRP showed good predictive accuracy for survival in patients with UTUC treated by NU. The nomogram could allow better patient selection in determining the feasibility of using a neoadjuvant approach.

UP.646

Our Experience of Orthotopic Bladder Substitution with Gastric Flap

Komyakov B**, Fadeev V**, Novikov A, Sergeev A

North West Mechnikov's State Medical University, Saint Petersburg, Russia

Introduction and Objectives: We have evaluated long-term results of conventional and modified gastrocystoplasty in cystectomy patients.

Materials and Methods: Between September 2002 and August 2012, 24 patients underwent bladder substitution with gastric flap after cystectomy for bladder cancer, interstitial cystitis, severely contracted bladder and neurogenic bladder dysfunction. In 13 patients we have performed conventional Mitchell-Hauri gastrocystoplasty and in 11 - modified intervention.

Results: Long-term complications included stricture of uretero-neobladder anastomosis with hydronephrosis in 3 (12.5%) patients, progression of chronic renal failure in 1 (4.2%) patient, clinically significant neobladder-ureteral reflux in 2 (8.3%) patient, hematuria-dysuria syndrome in 4 (16.7%) patients. Asymptomatic bacteriuria was noted only in 2 (8.3%) patient, average urine pH varied between 5.5 and 6.5. Continence rate was better in group of modified gastroplasty due to larger gastric flap used for bladder substitution. Day time continence 1 year after surgery was estimated as 69.2% (9 of 13) and 90.9% (10 of 11) in patients after conventional and modified gastroplasty respectively. Night time continence was not very high – 30.8% (4 of 13) and 54.5% (6 of 11) respectively. Urinary tract urodynamics was better after modified intervention compared with conventional surgery – neobladder capacity 456.5±52.5 ml vs. 388.6±33.6 ml, neobladder pressure during first sensation and max capacity were 15.5±2.2 cm H2O and 38.5±8.8 cmH2O vs. 19.3±2.8 cmH2O and 43.6±5.2 cmH2O. No significant difference was seen in residual volume and maximum flow rate between these two groups of patients. We observed neither any serious gastric peristalsis disturbances, nor significant electrolyte and acid base imbalance.

Conclusion: Gastroplasty is a promising intervention with an acceptable complication rate that could be successfully implemented in carefully selected patients and serve as a good alternative to ileal bladder substitution. Modified gastroplasty could provide adequate urine storage and evacuation with satisfactory continence life quality.

UP.647

Urinary Retention Is a Potential Pitfall in Postoperative Renal Function Care of Patients with Ileal Neobladder Reconstruction

Luo H**, Chiang P**

Chang Gung Medical Center, Kaohsiung, Taiwan

Introduction and Objectives: Radical cystectomy is indicated for high risk non-muscle invasive or muscle invasive bladder cancer. Ileal conduit diversion (ICD) is currently the most popular procedure for urinary diversion; however, ileal neobladder (INB) reconstruction is a possibility for well-selected patients wishing to preserve a normal body image after cystectomy. This study is to assess the change in glomerular filtration rate (GFR) in patients undergoing ileal-based urinary reconstruction and the impact of factors related to diversion or non-diversion on renal function.

Materials and Methods: From 2005 to 2011, 216 patients underwent radical cystectomy at our institution. Sixty-three and 6 patients were excluded owing to concurrent nephroureterectomy and ureterocutaneostomy urinary diversion respectively. Finally, 147 patients were enrolled and underwent radical cystectomy and bilateral ureteroileal urinary diversions. ICD was performed on 101 patients and INB on 46 patients, after radical cystectomy. GFR was assessed by the modified Modification of Diet in Renal Disease formula.
Results: Patients receiving either ICD or INB experienced similar survival outcomes. However, postoperative decrease in GFR was higher in the INB group (p = 0.006); deterioration of renal function was mainly attributed to urinary retention. Renal function outcomes were not different between the groups (p = 0.122) except for urinary retention, which was related to major medical events.
Conclusions: Postoperative GFR decrease was more frequent in patients undergoing INB, as urinary retention is a potential complication of INB reconstruction. Patients should be counseled preoperatively about this possibility. Postoperative residual urine should be monitored closely to avoid renal function deterioration.

UP.648
Evaluation of a New Technique for Continent Cutaneous Urinary Diversion: The Embedded Nipple Technique
Atta M, Hashad M**, Elabbady A**, Hegazy H
Alexandria University, Alexandria, Egypt

Introduction and Objectives: Cutaneous urinary diversion (CUD) is the subject of surgical innovation to achieve optimum continence. This study aims at evaluation of the feasibility and efficacy of a new technique for continent CUD: "The embedded nipple technique" (ENT).
Materials and Methods: A prospective study was conducted on 20 patients prepared for continent urinary diversion using ENT. Continence is provided by nipple valve mechanism derived from the tubular resistance of the ileal segment as well as a dynamic mechanism resulting from embedment within the reservoir wall. Stability of the nipple depends on: embedding the nipple into the anterior wall of the pouch, fixation of the efferent limb to the external oblique aponeurosis and fixation of the anterior wall of the pouch to the posterior rectus sheath. The embedded nipple provides a supported straight channel for easy catheterization or endoscopy. Postoperatively, patients underwent imaging and urodynamic evaluation. Continence status and quality of life were assessed using a designed questionnaire (selected from QLQ-C30 and EORTC QLQ-BLM30 models).
Results: Sixteen males (75%) and four females (25%) underwent continent CUD using ENT. The main indication was diversion after radical cystectomy (75%). Postoperative period was uneventful. Mean postoperative follow-up time was 18.6±7.05 months. Mean maximal pouch capacity was 385.5±153.63 ml. The pouch pressure at maximal capacity was 31±6.52 cm/H_2O. Max closure pressure of the efferent limb was 68.2±11 cm/H_2O. Functional profile length of the efferent limb was 3.59±1.29 cm. Continence (diurnal and nocturnal) was achieved in 95% of patients by clean intermittent catheterization. Re-operation was required for a single incontinent stoma (5%) due to a short nipple. Quality of life questionnaire showed improvement in areas related to catheter use, body image, social functions and daily activities.
Conclusion: The embedded nipple technique is feasible and effective for continent CUD.

UP.649
The Assessment of the Degree of Renal Deterioration as well as Renal Failure in Patients with Ileal Conduit Urinary Diversion Dependent on the Type of Ureterointestinal Anastomosis
Kajmakovic B[1], Dzamic Z[1], Bogojevic B[1], Acimovic M[1], Hadzi Djokic J[2]
[1]Dept. of Urology, Clinical Center of Serbia, Belgrade, Serbia; [2]Serbian Academy of Sciences and Arts, Belgrade, Serbia

Introduction and Objectives: We review the degree of renal deterioration and renal failure dependent on the type of ureterointestinal anastomosis to determine the most appropriate type of ureterointestinal anastomosis.
Materials and Methods: The study was conducted on 193 patients from 2007 to 2011. Follow-up was 48 months. Assessment of the renal deterioration was made by ultrasound. For the assessment of the level of renal failure we analyzed biochemical parameters of renal function. All patients were classified into three groups established by the method of insertion of ureter.
Results: In a Wallac A group, no significant changes were noticed at right renal units. In more than half of the cases of left renal unit, a higher degree of renal deterioration has been detected. At Wallace B group, the degree of renal deterioration of right renal units remained approximately the same. The initial state of the left renal unit was initially a bit lower than in Wallace A group. The degree of renal deterioration of left renal units was significantly higher. Considering right renal units in Nesbit-Bricker group, the condition was unchanged. Similar results have also been demonstrated in left renal units. In group of patients with Nesbit-Bricker technique, a lesser degree of renal deterioration was noticed. RI was verified in 83 (74.1%) patients in Wallace A group. Thirty seven (44.6%) patients had some degree of RI preoperatively while in 46 (55.4%) patients this was not the case. RI was verified in 31 (62%) patients in Wallace B group; 16 (51.6%) patients had some degree of RI preoperatively while in 15 (48.4%) patients this was not the case. In Nesbit-Bricker group, RI was detected in 22 (71%) patients, 7 (31.8%) patients had also RI preoperatively while in 15 (68.2%) patients there was no preoperative RI.
Conclusions: All three techniques are equally successful and have similar complications. Comparison of different techniques, detected higher degree of deterioration on left renal units is less common in Nesbit-Bricker group of patients. Renal failure appears equally often. Quality of life is similar.

UP.650
Undiversion of the Urinary Tract
Volkmer B[1], Schwarz J[1], Kahlmeyer A[1], de Petriconi R[2], Hautmann R[2]
[1]Klinikum Kassel, Kassel, Germany; [2]University of Ulm, Ulm, Germany

Introduction and Objectives: Cystectomy patients sometimes need undiversion of their initial urinary diversion (UD) into another form of UD. This surgical procedure is influenced by the anatomic and oncologic situation, the renal function, and the experience of the surgeon. Our aim was to analyze our series of very individual cases of undiversion.
Materials and Methods: Between 01/86 and 03/09 a total number of 1616 UD were performed at one single institution. In this series we identified 48 patients with 51 undiversions of the urinary tract (Female: n=25, male: n=23). All epidemiological, functional and oncologic data were collected with a complete follow-up until death or until 03/09.
Results: The age at the time of initial UD was 2-81 (mean: 50) years, the age at the time of undiversion was 18-81 (mean: 56) years. The time from initial UD to undiversion was 0–286 (mean: 57) months. The reason for cystectomy was malignancy in 28 cases and benign disease in 23 cases. The undiversions were: continent to continent: n=14, incontinent to continent: n=14, continent to incontinent: n=13, incontinent to incontinent: n=10. 12 patients suffered from tumor recurrence affecting the initial urinary diversion: urethral: n=4, ureteral: n=3, local: n=3, other: n=2. All cases with an intestinal segment infiltrated by tumor had lymph node metastases in the mesentery requiring the complete resection of the diversion.
In 8 cases the reason for undiversion was an early (within 1 year) deterioration of the initial urinary diversion by abscess, infarction of the mesenterial artery, or radiogenic damage. In 6 patients progressive renal failure after continent UD required the undiversion to an incontinent diversion. In 25/51 cases parts of the initial UD

(intestinal segments with ureteral anastomoses) could be incorporated in the new diversion. One patient suffered from short bowel syndrome. All 6 patients with an undiversion to an orthotopic neobladder with previous closure of the membranous urethra later needed long-term CIC. Four out of 48 patients died within 90 days after undiversion from complications or tumor progression.

Conclusions: Undiversion of the urinary tract requires highest experience in reconstructive surgery. Selecting an individual strategy for each patient is important for obtaining good long-term results.

UP.651

Suprapubic Tube Placement after Orthotoptic Urinary Diversion: Is It Mandatory?

Swain S, Ali A, Kava B, Manoharan M, Satyanarayana R
Miller School of Medicine, Miami, USA

Introduction and Objectives: Various techniques of orthotopic urinary diversion have been described in the literature and it is thought that the placement of a suprapubic tube (SPT) would reduce the rate of orthotopic urinary diversion specific complication. In this study we will evaluate the need of SPT placement in orthotopic neobladder, and if it is indicated or not.

Materials and Methods: In a retrospective study, patients who underwent orthotopic urinary diversion at University of Miami between 1992 and 2010 were reviewed. The patients were divided into two groups: one with SPT insertion after orthotopic urinary diversion and another without. The characteristics of those two groups were recorded, in particular, their age, sex, pathological stage of the disease as well as their post-operative complications and number of post-operative visits (POVs). The results were compared and analysed.

Results: A total of 295 patients had cystectomy and neo-bladder. Thirty four patients had the placement of SPT at the procedure and 261 had no SPT. The two groups of patients matched well in terms of patient age, sex and pathological stage of urothelial cancer. Of the 34 patients who had SPT placement, post-operative neo-bladder specific complications included 3% anastomotic leakage (1 patient), 21% Urinary tract infection (UTI), 9% wound infection and 3% fistula formation. No neo-bladder perforation noted. Of the 261 patients who had no SPT placement, there was no anastomotic leakage, 17% UTI, 7% wound infection and 4% fistula formation. One patient experienced neo-bladder perforation (0.4%). The post-operative neo-bladder specific complication is similar between the two groups. Patients who had SPT insertion after orthotopic urinary diversion needed more post-operative visits (Table 1).

Conclusion: In conclusion, we believe the insertion of SPT after neo-bladder is not mandatory. The SPT insertion may require patients to have attended more post operative visit.

UP.651, Table 1. Demographics and complications with SPT versus patients with no SPT

	SPT N=34 (%)	No SPT N=261 (%)	p
Age Median (IQR)	62.0 (59.5-69.5)	65.0 (59.0-71.0)	0.98
BMI Median (IQR)	25.8 (24.3-30.4)	26.6 (23.8-29.8)	0.70
POVs Median (IQR)	3.0 (2.5-3.5)	2.0 (2.0-2.0)	<0.001
Gender Male Female	 33 (97) 1 (3)	 238 (91) 23 (9)	0.332
Neo-bladder Perforation	0	1 (0.4%)	1.0
UTI Yes No	 7 (20.5) 27 (79.5)	 45 (17) 216 (83)	0.63
Anastomotic leak Yes No	 1(3) 33 (97)	 0 (0) 261 (100)	1.0
Wound infection Yes No	 3 (9) 31 (91)	 18 (7) 243 (93)	0.72
Fistula formation Yes No	 3 (9) 31 (91)	 10 (4) 251 (96)	0.17
Pathologic stage Tis Ta T0 T1 T2 T3 T4	 5 (14.5) 0 2 (6) 2 (6) 11 (32.5) 12 (35) 2 (6)	 28 (11) 7 (2.5) 37 (14) 29 (11) 72 (27.5) 75 (29) 13 (5)	0.62

UP.652

Risk Factors and Implications of Parastomal Hernia in Patients Undergoing Radical Cystectomy and Ileal Conduit

Swain S, Ali A, Parekh D, Soloway M, Manoharan M
Miller School of Medicine, Miami, USA

Introduction and Objectives: Stomal complications are of a major concern that can alter the quality of life in patients undergoing radical cystectomy (RC) and ileal conduit (IC) urinary diversion. The incidence of parastomal hernia is between 3.9 to 25%. Our aim is to identify the risk factors for developing parastomal hernia and to describe the management of such complication.

Materials and Methods: We performed a retrospective analysis on patients who underwent RC and IC urinary diversion for bladder cancer between 1992 and 2011. Patients were divided into 2 groups based on whether or not they developed parastomal hernia. All relevant variables were collected and compared. Chi square test compared categorical variables and independent sample t test compared continuous ones.

Results: A total of 442 patients were included in the study. Forty five of them (10.2%) developed parastomal hernia. The mean age of patients who developed hernia was 73.3 (range 60-84). There was no significant difference in age, body mass index (BMI), Gender, and Pathological stage between the 2 groups. The administration of Neoadjuvant or adjuvant chemotherapy did not influence the development of parastomal hernia. However, patients who developed parastomal hernia had a significantly longer follow-up ($p < 0.001$) (Table1). Of the 45 patients with Parastomal hernia, only 1 patient had coexisting stomal stenosis. All parastomal hernia patients were managed conservatively with hernia belt except for one patient who required surgical repair.

Conclusion: The incidence of Parastomal hernia in our study population was 10.2%. There are no risk factors increasing the risk of parastomal hernia other than the longer

UP.652, Table 1. Demographics and disease criteria

	Parastomal Hernia		
	Present 45 (10.2%)	Absent 397 (89.8%)	P
Age Mean (Range)	73.3 (60-84)	72.3 (43- 91)	0.352
BMI Mean (Range)	26.4 (13.6 – 45.0)	27.1 (14.1 – 49.2)	0.411
Follow-up Mean (Range)	64.0 (2 – 206)	29.2 (0 – 198)	<0.001
Gender Male Female	27 (60.0) 18 (40.0)	288 (72.5) 109 (27.5)	0.084
pT T0 T1 T2 T3 T4 Ta Tis	10 (22.2) 2 (4.4) 12 (26.7) 11 (24.4) 4 (8.9) 3 (6.7) 3 (6.7)	39 (10.0) 25 (6.4) 87 (22.3) 121 (31.0) 66 (16.9) 9 (2.3) 43 (11.1)	0.071
NAC	6 (13.3)	65 (16.5)	0.675
AC	7 (15.6)	77 (19.4)	0.689
Stomal stenosis	1 (2.2)	1 (0.3)	0.193
Stomal retraction	0	2 (0.5)	1.000

pT; pathological stage, NAC; neoadjuvant chemotherapy, AC; adjuvant chemotherapy

follow-up after RC and IC urinary diversion. In our cohort, parastomal hernia was managed conservatively. Only one patient required surgical repair of parastomal hernia. Obesity did not seem to affect parastomal hernia development.

UP.653

What to Do When Ileal Conduit Bags Are No Longer Available

Browning A[1], **Williams G**[2]
[1]Selian Fistula Project, Arusha, Tanzania; [2]Bethal Teaching Hospital, Addis Ababa, Ethiopia

Introduction and Objectives: Most patients with an incurable obstetric fistula are left to spend the rest of their life incontinent. Some have had an ileal conduit performed by surgical tourists without realising that bags are not available or not affordable. In others the supply of bags ceases due to government import restrictions. We recently dealt with a lady who had an ileal conduit performed nine years ago but her supply of bags stopped five years ago. Since then she has attempted suicide on three occasions because of her incontinence and social isolation. We describe a new operation to reduce the ileal conduit and, make her continent and improve her quality of life.
Materials and Methods: Case study of a patient with an incurable obstetric fistula who had failed several operative attempts. She subsequently had an ileal conduit operation in rural Tanzania but was eventually left without a supply of any sort of collecting bag or device.
Results: The patient had been living with the ileal conduit for nine years and without a collection device for five. Her skin was excoriated, painful and odourous. She has been suicidal and was desperate for the conduit to be taken away. Her renal tract on ultrasound was normal, her renal function normal and she was able to hold 300ml or warm saline in her rectum for two hours without spillage. After planning, counseling and consenting, an operation was performed whereby the conduit was reduced and incorporated into the anterior wall of a Mainz II pouch. She made an uneventful recovery, was discharged home and followed up by mobile phone. She remained continent with a slight leakage at night at times. Her quality of life had improved and is no longer contemplating suicide.
Conclusions: This operation has not been previously described and should be considered in patients with a conduit and no bags.

UP.654

Mid-Long Term Complications of Deserosalized Muscle Layer Covering Method for Antirefluxing Ureteroenteric Anastomosis to Continent Urinary Diversion after Total Cystectomy

Shimbo M, Muraishi O, Endo F, Matsushita K, Kyono Y, Hishiki K, Hattori K
St. Luke's International Hospital, Tokyo, Japan

Introductions and Objectives: A recent trend of anastomosis of the ileal orthotopic neobladder is not to apply the antirefluxing technique. However, Eisenverg et al. showed that postoperative hydronephrosis, pyelonephritis and ureteroenteric stricture were modifiable risk factors to a decrease in long–term renal function (J Urol 2013). Shioji et al. developed new antirefluxing technique and reported the usefulness and feasibility of the procedure (J Urol 2002). We applied this technique and evaluated the complications in the mid-long term results.
Materials and Methods: From 2005 to 2012, 36 patients (4 woman and 32 men) who underwent continent urinary diversion with this technique following cystectomy were evaluated. Hautmann ileal neobladder and Mainz pouch were created for 32 and 4 cases, respectively. The ureters were implanted into the reservoir using the deserosalized muscle layer (DSML) covering method. We assessed the rate of stenosis at the ureteroileal anastomosis, pyelonephritis and new formation or worsening of hydronephrosis after this procedure. A follow-up in all patients included renal ultrasonography or abdominal computerized tomography and blood testing every 6 to 12 months.
Results: The median age was 60.8 years and median follow-up period was 57 months (9-110 months). Five patients (13.8%) experienced pyelonephritis; however there was no recuttent case after one time treatment. Six hydronephrosis (8.5% for 71 renoureteral units) were detected. Ureteral stricture at the ureteroileal anastomotic site was seen in only one unit (1.4%).
Conclusions: The DSML covering method provided equal or less complications than other ureteroileal anastomosis methods. This technique is especially useful for the continent cutaneous reservoir, which needs an antirefluxing system, and also appropriate for the ileal neobladder in consideration of long term renal function decrease due to ureteral reflux and following pyelonephritis.

UP.655

Uretero-Colonic Anastomosis of Dilated Ureters in Orthotopic Sigmoid Neobladder: A Novel Technique

Khalaf I, Mahmoud M, Saleh S, Eleweedy S
Al Azhar Faculty of Medicine, Cairo, Egypt

Introduction and Objectives: Ureteral anastomosis in orthotopic sigmoid neobladder after radical cystectomy is traditionally done by an antireflux submucous tunnel (as Leadbetter or Goodwin) to preserve renal integrity. Should the ureters be dilated and/ or thick, submucous tunnel may not be the optimal option. Herein, we describe a novel technique for ureterocolonic anastomosis suitable for normal as well as dilated ureters, in low pressure large capacity colonic bladder substitutes.
Materials and Methods: During formation

of orthotopic sigmoid neobladder after radical cystectomy, two longitudinal incisions are made along each side of 4-5 cm of teniae coli. Then the delineated segment is stripped off the sigmoid wall exposing colonic mucosa to create a bed or trough where each ureter is laid down without angulation or twisting. Using 3/0 vicryl sutures, mucosa to mucosa anastomosis is done between the spatulated distal end of the ureter and a button- hole in the colon created at the distal end of the teniectomy bed. Both sidewalls of the ureter are then fixed to the seromuscular layer of the colon. Patients were monitored at 3, 6 and 12 months for urine leakage, renal backpressure or reflux.

Results: This technique was applied in 15 patients (29 renal units) in whom cystectomy was carried out for invasive bladder carcinoma at Al Azhar University Hospital, Cairo, Egypt. No anastomotic urine leakage occurred while mild non-progressive degree of ureteral stenosis in one unit (3.4%), reflux in 4 units (13.7%) and two units of renal function deterioration were observed.

Conclusion: Uretero-colonic anastomosis in the bed of excised tunica is recommended for the dilated/ or thick ureter in low pressure high capacity colonic reservoir.

UP.656

Is Periurethral Injection of Macroplastique® a Viable Option for Patients with Post-Prostatectomy Urinary Incontinence?

DeLong J, McCammon K
Eastern Virginia Medical School, Norfolk, USA

Introduction and Objectives: Male stress urinary incontinence (SUI) has emerged as a significant morbidity following treatment for prostate cancer. Injectables have traditionally not been successful for treatment of SUI, but post robotic prostatectomy patients may represent a different population. We aimed to assess whether periurethral injection of Macroplastique® is effective for men with post-prostatectomy incontinence (PPI).

Materials and Methods: A retrospective chart review was performed, identifying men who underwent periurethral injection of Macroplastique® for bothersome PPI between May 2011 and December 2013 at our institution. Basic demographic information was collected. Pre and post-operative pad use was recorded, as well as pertinent perioperative data. Success was defined as at least 50% improvement in incontinence. All injections were performed by a single surgeon using standard surgical technique.

Results: Fourteen men were identified who underwent Macroplastique® injection. Only one patient underwent previous pelvic radiation in the cohort. Average patient age at intervention was 66 years. Twelve of the 14 patients (86%) underwent prior AdVance™ sling placement that failed to sufficiently improve their PPI. One patient had not undergone an anti-incontinence procedure previously. One patient underwent an AUS 8 years prior to injection. Median preoperative pad use per day was 2 (range 1-6). At a mean follow-up of 9 months, 9 of 14 men (65%) were considered a success, with greater than or equal to 50% improvement in pad use. Seven of those 9 (78%) were "cured" with zero to one pads per day used. Three patients went on to receive artificial urinary sphincters, and one to undergo AdVance™ placement. One patient underwent repeat Macroplastique® injection and is now dry. No major complications were noted; two patients required catheterization for a short period postoperatively, which resolved, and one patient was treated for a UTI.

Conclusions: Periurethral injection of Macroplastique® has favorable results with short-term follow-up for men with bothersome PPI. It is associated with low morbidity, and does not preclude successful surgical intervention in the future if needed. Larger studies with longer follow-up are needed to confirm these results.

UP.657

Preoperative Risk Factors of Failure after Mid-Urethral Sling Operation for Treating Women with Mixed Urinary Incontinence

Shim K, Seo Y, Heo J
Busan Veterans Hospital, Busan, South Korea

Introduction and Objectives: We evaluated risk factors for failure after mid-urethral sling (MUS) operation in patients with mixed urinary incontinence (MUI).

Materials and Methods: Eighty five women with MUI underwent MUS operation between June 2009 and October 2012 with at least 1-year follow-up. The following measures were recorded before MUS: age, number of delivery, body mass index, history of hysterectomy and hormone replacement, severity of incontinence, degree of cystocele, a disease-specific validated questionnaires, 1-hour pad test, maximal flow rate, postvoid residual urine volume, standardized stress test and urodynamic study. Urodynamic study included maximal urethral closure pressure, maximal cystometric capacity, involuntary detrusor contraction and Valsalva leak point pressure. Patients underwent retropubic (32/85, 37.6%) or trans-obturator (53/85, 62.4%) MUS operation. All patients were asked to visit clinic at 1, 3, 6 month and 1 year after surgery. Cure was defined as absence of any episodes of urine leakage. Improvement was defined subjectively as a significant reduction of urine leakage. All other outcomes were regarded as failure. Chi-square test was used to compare clinical operative results and subjective satisfaction. Univariate and multivariate logistic regression analysis was used to determine the risk factors of failure after MUS operation.

Results: At 1 year after surgery, 69.4% of patients were rated as "cured", 83.5% as "cured and improved", and 76.5% as "very satisfied and satisfied". We analyzed the pattern of post-operative persistent incontinence in improved and failed group (26 patients). Six patients (23.1%) were mixed incontinence type, 3 patients (11.5%) were stress type and 17 patients (65.4%) were urge type. Weight of 1-hour pad test, AUA Symptom Index-QoL score, maximal cystometric capacity (MCC), and involuntary detrusor contraction (IDC) were risk factors in univariate analysis, but only MCC (adjusted OR=1.2, 95% CI=0.720-1.071, p=0.032) and IDC (adjusted OR=2.4, 95% CI=1.047-4.045, p=0.041) were independent risk factors in multivariate analysis.

Conclusion: MCC and IDC, which indicate pathophysiologic condition of detrusor muscle itself, were important predictors of failure of MUS operation in patients with MUI.

UP.658

The Use of High-Frequency Micro-Ultrasound to Assess Urethral Function at Different Saline Infusion Rates in Female Rats

Hakim L[1], Callewaert G[2], M Soebadi D[3], Deprest J[2], De Ridder D[1], Albersen M[1], Van der Aa F[1]
[1]Laboratory of Experimental Urology, Dept. of Development and Regeneration, KU Leuven, Leuven, Belgium; [2]Laboratory of Experimental Gynecology, Dept. of Development and Regeneration, KU Leuven, Leuven, Belgium; [3]Dept. of Urology, Faculty of Medicine, Airlangga University/Dr. Soetomo General Hospital, Surabaya, Indonesia

Introduction and Objectives: Leak point pressure (LPP) test and electromyography of the external urethral sphincter (EUS EMG) are commonly used methods to assess urethral function in rodents, meanwhile adequate standardization of these techniques is lacking. Different saline infusion rates (between 2.4 ml/hr and 30 ml/hr) have been used in studies, resulting in different outcomes. We have previously shown that high-frequency micro-ultrasound (μUS) can be used as an objective method to assess urethral function in normal rats and vaginal distension (VD) model under vesical saline-infusion rate of 60mL/hr. We compare the pattern of EUS bursting using different vesical saline infusion rates by simultaneously combining μUS, EUS EMG and cystometrography (CMG).

Materials and Methods: Simultaneous μUS and EUS EMG and CMG were performed in control-virgin sprague dawley-rats of 12 weeks old under urethane anesthesia. Different vesical saline infusion rates (5ml/hr, 10ml/hr and 60ml/hr) were applied. The Vevo 2100 US system with MS-400 transducer (30 MHz) was used. A 30G

bipolar concentric needle was placed adjacent to the mid-urethra and raw EMG signals were measured. The baseline (BP), threshold (TP) and peak pressures (PP) were measured. Intraburst analysis was performed during the 2nd phase of voiding cycle, and a 1-sec measurement was performed using interbursting interval (IBI) and length of bursting (LOB) parameters. The total length of bursting (TLB) and rate of bursting (ROB) were also compared.
Results: The BP, TP and PP at 60ml/hr infusion rate were significantly higher than others. The ROB were the same at 5ml/hr, 10ml/hr and 60ml/hr (5.4±0.24, 5.4±0.4 and 5.8±0.37 cycle/sec respectively; p=0.55). The TLB showed no significant differences using µUS and EMG EUS (4.37±0.36, 5.7±1.7 and 8.84±2.62 sec, p=0.19).The IBI (p=0.32) and LOB (p=0.34) based on EUS EMG showed no significant differences at different infusion rates. Similarly, the µUS showed also no significant differences of IBI (p=0.79) and LOB (p=0.07).
Conclusions: Our study shows that different vesical saline infusion rates do not induce differences of EUS bursting patterns as measured by µUS and EUS EMG. These results reveal that µUS and EUS EMG could be used at different saline-infusion rates with consistent results to measure urethral function.

UP.659

The Validation of High-Frequency Micro-Ultrasound with Electromyography as a Novel Method to Assess Urethral Function in Female Rats

Hakim L[1], Callewaert G[2], M Soebadi D[3], Deprest J[2], De Ridder D[1], Albersen M[1], Van der Aa F[1]
[1]Laboratory of Experimental Urology, Dept. of Development and Regeneration, KU Leuven, Leuven, Belgium; [2]Laboratory of Experimental Gynecology, Dept. of Development and Regeneration, KU Leuven, Leuven, Belgium; [3]Dept. of Urology, Faculty of Medicine, Airlangga University/Dr. Soetomo General Hospital, Surabaya, Indonesia

Introduction and Objectives: Leak point pressure (LPP) test and / or electromyography of the external urethral sphincter (EUS EMG) are commonly used methods to assess urethral function in female rodents. Since these methods are invasive, operator dependent and need high number of rats per experiment, a novel method that is less invasive, less operator dependent and reproducible requiring a minimum number of animals is essential. We have previously shown that high-frequency micro-ultrasound (µUS) is an objective method to assess the external urethral sphincter (EUS) bursting activity in normal rats and rats after vaginal distension (VD). In this study we validated the µUS with EUS EMG measurements in female rats by performing 1-second intraburst analysis at different transvesical saline-infusion rates.
Materials and Methods: Simultaneous µUS and EUS EMG were performed in control-virgin sprague dawley rats of 12 weeks old under urethane anesthesia (1.2gr/kg). Different vesical saline infusion rates (5ml/hr, 10ml/hr and 60ml/hr) were applied. The Vevo 2100 US system was used and equipped with MS-400 transducer (30 MHz). A 30G bipolar concentric needle was placed adjacent to the mid-urethra and raw EMG signals were measured The MP150 Biopac system. Intraburst analysis was performed during the 2nd phase of the normal voiding cycle, and a 1-sec measurement was performed using predetermined parameters: interbursting interval (IBI) and length of bursting (LOB). Both of these parameters were compared between µUS and EMG measurements. All data are presented as mean ± SEM and all statistical tests were considered significant if p<0.05.
Results: The IBI and LOB at 5ml/hr, 10ml/hr and 60ml/hr showed no significant differences if measured by EMG and µUS (p<0.05).
Conclusions: Both µUS and EUS EMG measurements allow adequate recordings of urethral function in female rats. We have shown no significant differences of IBI and LOB either at 5 ml/hr, 10ml/hr or 60 ml/hr saline-infusion rates when comparing both techniques. The µUS provides similar results to EUS EMG, with the advantages of being less-operator dependent and non-invasive. The µUS could be used to perform consecutive measurements in the same animal which in turn leads to less animals needed in experiments.

UP.660

Predictive Factor for Improving Urge Urinary Incontinence after the Trans-Obturator Tape Procedure in Mixed Urinary Incontinence Patients

Kim B, Jung W, Ha J**, Park C**, Kim C
Keimyung University, Daegu, South Korea

Introduction and Objectives: In mixed urinary incontinence, combination treatment of medication and surgery are usually used. But, some studies reported successful single surgical treatment outcome. We investigate predictive factor for improving urge urinary incontinence after the trans-obturator tape (TOT) surgery in mixed urinary incontinence.
Materials and Methods: From January 2008 to May 2013, of 113 patients who received TOT, 70 patients with urge incontinence symptom were analyzed. Medical history, physical examination, with diabetes mellitus and hypertension, preoperative anticholinergic usage, body mass index (BMI), parity, obstetric surgical history, menopausal status, cystocele, urodynamic study, post voiding residual urine volume, preoperative duration of symptoms and the postoperative urgency were analyzed retrospectively. Age and BMI was divided 60 years and 25kg/m^2 respectively.
Results: The mean age of the patients was 57.5 years, mean BMI was 25.28kg/m^2, the number of patients with symptom grade I (pad <2) was 11 (15.7%), grade II (2 <pad <5) was 50 (71.4%) and grade III (pad> 5) was 9 (12.9%). Mean parity was 2.67 times. The number of patients who had diabetes melitus was 5 (7.1%), hypertension was 30 (42.9%), cystocele was 35 (50%), history of hysterectomy in 14 (20%), postmenopausal status was 56 (80%). The mean preoperative maximum flow rate was 28.61ml/sec, the mean post-voiding residual urine volume was 5.43ml. Forty six patients were taking preoperative anticholinergics (65.7%), mean duration of preoperative symptom was 8.1 months. Of the 70 patients who received TOT surgery, 50 patients (71.4%) had improved symptoms of the urge incontinence after the surgery. In univariate analysis, the cases of younger age (p = 0.023), lower BMI (p = 0.035), never used anticholinergics preoperatively (p = 0.022) and absence of hypertension (p = 0.035) had significantly more symptom improvements. However, in multivariate analysis, age (95% CI, 0.047-0.869; p = 0.032) was the only statistically significant factor.
Conclusion: Elderly patients with mixed urinary incontinence would have persisting symptoms of urge incontinence after TOT surgery. Thus, the age should be considered when treating mixed SUI.

UP.661

Transurethral Plus Transvaginaly Periurethral Injection of Autologous Adipose Stem Cells to Periurethral Region for Treatment of Female Stress Urinary Incontinence

Arjmand B[1,2], Safavi M[1], Heydari R[1], Aghayan H[2], T. Bazargani S[1], Dehghani S[1], Goodarzi P[2], Mohammadi-Jahani F[2]**, Pourmand G**[1], Beladi L[1], Alizadeh F[1]
[1]Urology Research Center, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran; [2]Brain and Spinal Cord Injury Research Center, Tehran University of Medical Sciences, Tehran, Iran

Introduction and Objectives: Stress urinary incontinence is a common medical problem among women. The urethral closure complex and/or the support mechanisms are responsible for incontinence in the majority of patients. Several surgical procedures with different degrees of invasiveness and outcomes have been reported to treat the problem.
Materials and Methods: Ten women with symptoms of stress urinary incontinence treated by injections of autologous adipose-derived stem cells into the periurethral region via transurethral and transvaginal- under urethroscopic observation. This report presents the short-term outcomes of the patients. Patients' outcome was

evaluated by pad test results, ICIQ-SF scores and Qmax.
Results: The mean age of the participants was 45.8 ± 8.7 years. Urinary incontinence significantly decreased through the first two, 6 and 24 weeks after the injection therapy. The difference was significant in pad test results (p<0.001) and ICIQ-SF scores (p<0.001). Surprisingly, Qmax showed improvement after the study period (means 32.6 vs. 35.7; P=0.002).
Conclusions: This study showed that injection of the autologous adipose-derived stem cells to periurethral region is a safe and effective treatment option for stress urinary incontinence.

UP.662
Male Remeex System for Urinary Incontinence: Results after 7 Years of Follow-Up
Sousa A
Hospital Comarcal de Monforte, Monforte, Spain

Introduction and Objectives: Suburethral slings are gaining interest as first option treatment in male urinary incontinence. The aim of this study was to evaluate safety, efficacy and durability of the MRS including how many postoperative adjustments were required to achieve continence of a group of patients followed during 7 or more years.
Materials and Methods: Fifty male patients with moderate to severe UI were prospectively operated on using an adjustable sling (MRS®). The etiology of incontinence was status post radical prostatectomy in 45 cases, TURP in three cases, and open prostatectomy in two cases. Average follow-up was at 90 months. Long-term cure rates and number of adjustments were recorded.
Results: All 50 patients required an adjustment after surgery, which was performed under local anesthesia. Mean number of adjustment procedures during the whole follow-up was 4.3. The longest time interval from placement of the MRS to the adjust was 106 months. A total of 35 patients (70%) were considered continent (pad use 0-1). Eleven patients (22%) showed significant reduction of their pad use (>50%). Five case (8%) remained incontinent. Of these five patients, one suffered a CVA unrelated to the operation but was disqualified for further adjustments, and four patients were disqualified for further adjustments due to tumor progression. There was one mesh erosion and three varitensor seromas which lead us to retire it but leaving the threads and mesh in place remaining continent. In 20% cases, uneventful intraoperative bladder/urethral perforations occurred which required only new passage of the needles. Six mild perineal hematomas were reported and almost all patients reported perineal discomfort or pain which was successfully resolved with oral medications.
Conclusion: Mean follow-up data of 90 months showed a high success rates due to the possibility to adjust the tension of the device under local anesthesia at any moment during patients life. Postoperative complications were mild and transient.

UP.663
Body Mass Index as a Risk Factor of Sling Tension Readjustment for Recurrence of Stress Urinary Incontinence after the Remeex System
Lee S[1], Park D[1], Hong Y[1], Kim D[2]
[1]CHA Bundang Medical Center, CHA University, Seongnam, South Korea; [2]CHA Gangnam Medical Center, CHA University, Seoul, South Korea

Introduction and Objectives: We evaluated the risk factors that predict sling tension readjustment (STR) after the Remeex system in patients with recurrent stress urinary incontinence (SUI) or intrinsic sphincter deficiency (ISD).
Materials and Methods: We retrospectively reviewed the records of 32 patients who underwent the Remeex system for recurrent SUI or ISD between November 2010 and June 2012. Of these patients, one patient whose sling tension was reduced due to urinary obstruction was excluded. The need for STR was determined through the stress test and sling tension was increased under local anesthesia. Patients were divided into two groups according to the STR. Patient's clinical characteristics were evaluated as the risk factors for STR (Table 1).
Results: Among 31 patients, four patients (12.9%) underwent STR, and mean follow-up period was 23.9±5.7 months (range, 18-37 months). BMI was significantly higher in patients with STR than patients without STR (Table 1). There were also significant differences of hysterectomy history between the patients with and without STR (Table 1). Logistic regression analysis revealed that only BMI was a significant risk factor of STR after the Remeex system (OR=5.532, 95% CI=1.058-28.919, p=0.043) (Table 2).
Conclusion: BMI was a significant risk factor of STR after the Remeex system. Measurement of BMI may help to better predict the patients with high possibility of STR after the Remeex system.

UP.665
Acute Dose-Related Differential Effects of Methylphenidate on Murine Cystometric Parameters
Yoon S[1], Kim K[2], Park S[1], Lee T[1], Seong D[1], Cho S[3]
[1]Inha University, Incheon, South Korea; [2]Gachon University Gil Hospital, Incheon, South Korea; [3]Hallym University Kangnam Sacred Herat Hospital, Seoul, South Korea

UP.663, Table 1.

Table 1. Comparison between patients with and without sling tension readjustment after a REMEEX system [Means±SD, (range)].

Characteristics	Total	Readjustment (+)	Readjustment (-)	P Value*
Number of patients (%)	31	4 (12.9)	27 (87.1)	
Age (years)	61.3±10.4 (36-86)	59.8±7.9 (53-70)	61.5±10.8 (36-86)	0.558[1]
BMI (kg/m^2)	23.6±1.5 (21.5-27.8)	26.2±1.1 (25.3-27.8)	23.3±1.2 (21.5-26.8)	0.001[1]
Parity (number)	2.4±1.7 (0-7)	2.3±1.5 (1-4)	2.4±1.7 (0-7)	0.982[1]
VLPP (cm H_2O)	45.8±17.1 (7.0-96.0)	44.8±4.3 (42.0-51.0)	45.9±18.3 (7.0-96.0)	0.700[1]
MUCP (cm H_2O)	47.8±28.2 (7.0-122.0)	41.3±16.1 (27.0-58.0)	48.8±29.7 (7.0-122.0)	0.560[1]
MBC (ml)	307.5±30.4 (281-467)	301.8±0.5 (301-302)	308.3±32.6 (281-467)	0.351[1]
MFR (mL/s)	19.0±9.9 (7.4-39.2)	12.8±4.2 (8.5-16.5)	19.9±10.3 (7.4-39.2)	0.061[1]
Hypertension (Yes / No)	10 / 21	2 / 2	8 / 19	0.577[2]
Diabetes (Yes / No)	7 / 24	0 / 4	7 / 20	0.550[2]
Menopause (Yes / No)	25/ 6	3 / 1	22 / 5	1.000[2]
Previous sling op (Yes / No)	5 / 26	2 / 2	3 / 24	0.112[2]
Hysterectomy (Yes / No)	8 / 23	3 / 1	5 / 22	0.043[2]
Detrusor overactivity (Yes / No)	31 / 93	3 / 1	6 / 21	0.063[2]

SD = standard deviation; BMI = body mass index; VLPP= Valsalva leak point pressure; MUCP = maximum urethral closure pressure; MBC = maximum bladder capacity; MFR = postoperative maximum flow rate; [1] = Mann-Whitenay U test; [2] = Fisher's exact test
* p < .05 was considered statistically significant.

UP.663, Table 2.

Table 2. Logistic regression analysis for factors affecting postoperative sling tension readjustment after a REMEEX system.

Parameter	Univariate			Multivariate		
	P	OR	95% CI	P	OR	95% CI
BMI*	0.028	5.649	1.209-26.394	0.043	5.532	1.058-28.919
Hysterectomy	0.040	13.200	1.125-154.826	0.208	9.952	0.276-358.759

*Parameters were analyzed as a continuous variable per unit.
BMI, body mass index; OR, odds ratio; CI, confidence interval.

Introduction and Objectives: Methylphenidate is the most widely used central nervous system stimulant in patients with attention deficit hyperactivity disorder. However, few studies have assessed its effects on voiding. Various doses of methylphenidate were investigated for their effects on cystometric parameters in conscious mice.
Materials and Methods: Ten male C57BL/6 mice, weighing between 20 and 23 g, were used in this study. To compare the acute drug responses before and after the oral medication was administered in the awake condition, we injected the solution through a catheter inserted into the stomach. Methylphenidate (1.25, 2.5, and 5 mg/kg) in an injection volume of 0.05 mL was administered.
Results: Four mice that received high doses of methylphenidate (2.5 and 5 mg/kg) showed no voiding contraction, with urine leakage. Six mice that received a low dose of methylphenidate (1.25 mg/kg) showed typical micturition cycles before and after administration. The micturition pressure decreased and bladder capacity increased without an increased residual volume after administration.
Conclusion: Methylphenidate has differential, dose-dependent effects on the function of the lower urinary tract, due to the dependent relationship between the brain and lower urinary tract. Especially at higher doses, this drug may interfere with normal micturition. Therefore, more detailed clinical or experimental studies are warranted in the future.

UP.666
Anatomical and Clinical Aspects of Urinary Incontinence after Radical Retropubic Prostatectomy
Al-Khariri M, **Lukyanov I**, Lukianova A
Urology and Surgical Andrology Clinic, Russian Medical Academy of Postgraduate Education, Moscow, Russia

Introduction and Objectives: Identification of criteria for urinary continence after RPE
Materials and Methods: N=57 (Median: age=62 years; preoperative PSA=8.7 ng/ml; observation time after RPE=8 months)
MRI prior to RPE:
- Membranous urethral length
- Shape of the prostatic apex
MRI after RPE:
- Membranous urethral length
Shape of the prostatic apex on sagittal MRI:
- A: apex overlapping membranous urethra both anteriorly and posteriorly (n=12)
- B: apex overlapping membranous urethra anteriorly (n=13)
- C: apex overlapping membranous urethra posteriorly (n=15)
- D: no overlapping observed between apex and membranous urethra (n=17)

Results:
Preoperative membranous urethral length: Median – 14 mm (between 6 and 24 mm)
Postoperative membranous urethral length: Median – 13 mm (between 4 and 21 mm)
Complete urine continence – 42 patients (73.7%)
1 pad a day – 8 patients (14.0%)
2-3 pads a day – 2 patients (3.5%)
4 pads – 3 patients (5.3%)
Total urine incontinence – 2 patients (3.5%)
Conclusion: Taking into consideration anatomical patterns of the urethral sphincter visualized by modern imaging methods, retaining the maximal length of the membranous urethra and shape of the prostate apex, sparing neurovascular bundles during RPE significantly improves the probability of saving the urine continence function.

UP.667
Evaluation of the Transobturator Male Sling in the Treatment of Stress Urinary Incontinence after Prostate Surgery
Chavez Roa C, Resel Folkersma L, Parra Ayala F, Ciappara Paniagua M, Moreno Sierra J
Hospital Clinico San Carlos, Madrid, Spain

Introduction and Objectives: To evaluate the effectiveness of AdVance® transobturator sling in the treatment of stress urinary incontinence (SUI) after prostate surgery.
Materials and Methods: A prospective, non-randomized, before-after study was conducted in one single institution. Inclusion criteria: Patients undergoing placement of the AMS AdVance® transobturator sling for SUI after prostate surgery. The severity of SUI was assessed by 24 hours pad test, and the International Consultation on Incontinence Questionnaire, Short Form (ICIQ- SF). Conventional urodynamic studies, retrograde cystourethrogram and flexible cystoscopy was performed. "Cure" was defined as the absence of use of the diaper, and improvement was defined as the use of just one diaper at day. The variables studied were age, BMI, ICIQ -SF, urodynamic adverse conditions, prior radiation therapy and prior treatment of incontinence. Statistical analysis: Student t test and Pearson's chi-squared test. Software SPS 15.0.
Results: A total of 60 patients were included, 34 robotic, 9 laparoscopic, and 9 open radical prostatectomies, 6 by TURP, and other 2 by transcapsular adenomectomy. Five patients received salvage radiotherapy and 2 with previous surgery for SUI (ProACT). Their mean age was 69.56 years (SD 6.35). Mean BMI of 27.36 (SD 2.63). Median 24-hour pad test was 356g (range 40-825g). Twenty four patients had detrusor overactivity and 27 underactivity (6 with acontractile detrusor). Median follow-up was 23 months. The cure rate was 78.3%, and median ICIQ-SF improved significantly from 18 (range 11-21) to 2 (range 0-21). The failure rate was 8.3%. None of the patients with acontractile detrusor had post void residual. For patients receiving radiotherapy cure rate was 40%. There were no intraoperative complications, and postoperative complications appeared in 30% of cases (temporal acute urinary retention in 25%, and short temporal perineal pain in 6.6%). Statistical analysis showed that the severity of SUI was not associated with the success rate ($p = 0.068$), nor with the other parameters assessed.
Conclusion: The transobturator sling is a safe and effective procedure in patients with SUI after prostate surgery.

UP.668
Quality of Life after AUS Implantation Including Urinary, Sexual, and Bowel Functions
Veliev E, Golubtsova E, Tomilov A
Russian Medical Academy Postgraduate Education, Moscow, Russia

Introduction and Objectives: As urinary incontinence is not directly life threatening, the main goal of surgical treatment of incontinence is to improve the quality of life (QOL). In this study we evaluated health-related quality of life regarding urinary, sexual, and bowel function.
Materials and Methods: A total of 34 patients with severe stress urinary incontinence after prostatic surgery were treated with an AMS 800 artificial urinary sphincter between November 2004 and April 2013. For QOL assessment urinary, sexual, and bowel domains of PC-QOL questionnaire were used before and after AUS implantation. To determine differences between groups Wilcoxon signed-rank test was applied.
Results: The mean age was 67 years and the mean follow-up was 44 months. Urinary function domain answers sum median decreased from 54 points (IQR 51 to 61 points) to 35 points (IQR 30 to 39 points), $p<0.05$.There were no significant differences before and after implantation in term of sexual function. Bowel function domain answers sum median decreased from 15 points (IQR 13 to 21 points) to 14.5 points (IQR 13.5 to 18.5 points), $p<0.05$.
Conclusion: AUS implantation significantly improves not only the urinary function, but also bowel function.

UP.669
Preoperative Factors Affecting AUS Implantation Outcomes
Veliev E, Golubtsova E, Tomilov A
Russian Medical Academy Postgraduate Education, Moscow, Russia

Introduction and Objectives: Despite relatively high rate of complications, artificial urinary sphincter (AUS) implantation is still the best option in patients with severe stress urinary incontinence. The aim of the study was to analyze factors influencing the success of implantation.
Materials and Methods: A total of 34 patients

with severe stress urinary incontinence after prostatic surgery were treated with an AMS 800 artificial urinary sphincter between November 2004 and April 2013. Among them 20 (58.8%) required prior surgery due to posterior urethral stricture. In all patients the evaluation of urethral lumen, continence and quality of life was performed. In order to evaluate impact of various factors Spearman's rank correlation coefficient was calculated. The cure was defined as ≤ 1 pad per day, improvement as the reduction of incontinence of more than 50%, and success was defined as the sum of cure and improvement.

Results: The mean age was 67 years and the mean follow-up was 44 months. The mean time after prostatic surgery was 24 months. The cure and improvement rate were 93.6% and 3.1% respectively, thus success rate was 96.9%. There was strong correlation between presence of posterior urethral stricture and preoperative pad number (R=0.818, p<0.05). Also there was significant correlation between postoperative and preoperative pad number (R=0.583, p<0.05), postoperative pad number and age (R=0.655, p<0.05). Moreover, there was significant correlation between complications and time to urinary incontinence treatment (R=0.344, p<0.05).

Conclusions: Age, pad number and time to urinary incontinence treatment influence AUS implantation outcomes.

UP.670

Virtue® Male Sling for Stress Incontinence: Single Arm, Non-Randomized, Single-Center Clinical Study and 1-Year Follow-Up - A Series of 29 Patients

Bottero D[1], Ferro M[1], Matei D[1], Cioffi A[1], Musi G[1], Melegari S[1], Castaldo L[2], Hurle R[2], Graziotti P[2], de Cobelli O[1]

[1]Div. of Urology, European Institute of Oncology, Milan, Italy; [2]Div. of Urology, IRCCS-Humanitas, Milan, Italy

Introduction and Objectives: Male stress urinary incontinence (SUI) after radical prostatectomy (RP) varies throughout the literature ranging from 8-77%. A recent surgical device for treating postprostatectomy incontinence treatment option includes Virtue quadratic male sling, consisting of a large pore knitted monofilament polypropylene mesh with 2 pre-attached inferior (transobturator) extensions and 2 superior (prepubic) extensions. The aim of this study was to evaluate functional and anatomical outcomes as well as complications, 1 year after the implantation of this new device.

Materials and Methods: Between July 2012 and October 2012, 29 patients treated with Virtue® Male were included in this prospective non randomized study. All patients meeting the following preoperative criteria: history of prostate surgery, symptoms of low to moderate SUI assessed by clinical examination, urodynamic diagnosis, adequate trial of nonsurgical treatment by pelvic floor exercise or physiotherapy. Patients presenting severe incontinence or previous radiotherapy treatment were excluded from this evaluation. The primary end point of this study is to assess the efficacy and safety of the surgical procedure based on improvement after sling 1-year follow-up implantation in: 24-hour pad weight, daily pad use, PGI-I (Patient's Global Impression), Questionnaire-short form [ICIQSF] PAD 24 hours weight, ICIQ score were analyzed using a fixed effect multivariate analysis of variance for repeated measures taking into account the pre-op, 1 month, 3 months, 6 months and 12 months results as dependent variables and time as repeating factor. For PPD the analysis was performed using the general estimating equation method.

Results: Mean surgery time was 43.7 minutes. Significant improvement of 24-hour pad weight, ICIQ score, daily pad use, PGI-I were noted between baseline and last follow-up (P<.0001), Figures 1, 2, 3 and 4. No perineal pain or complications that required devices removal have been reported.

Conclusion: Virtue® Male Sling is an effective treatment option for low to moderate postprostatectomy incontinence evidenced by objective improvements in 24-hr pad count, pad weight and patient perceived success via validated questionnaires.

UP.671

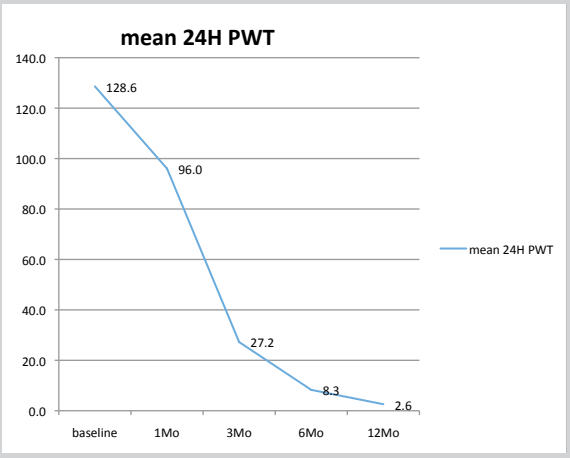
Association between Urethral Hyposensitivity and Development of Symptomatic Urge Incontinence in Patients with Detrusor Overactivity

Ichiyanagi O, Nagaoka A, Naito S, Ushijima M, Sakurai T, Yagi M, Takai S, Kawazoe H, Kato T, Tomita Y

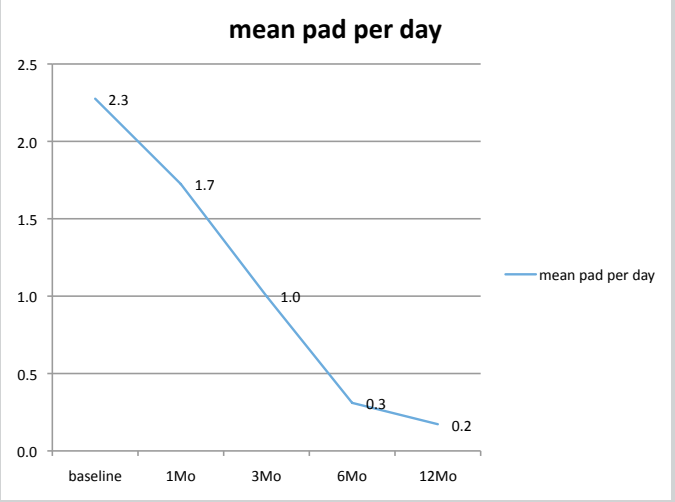
Yamagata University, Yamagata, Japan

Introduction and Objectives: Involuntary detrusor contractions mediated via c-fiber

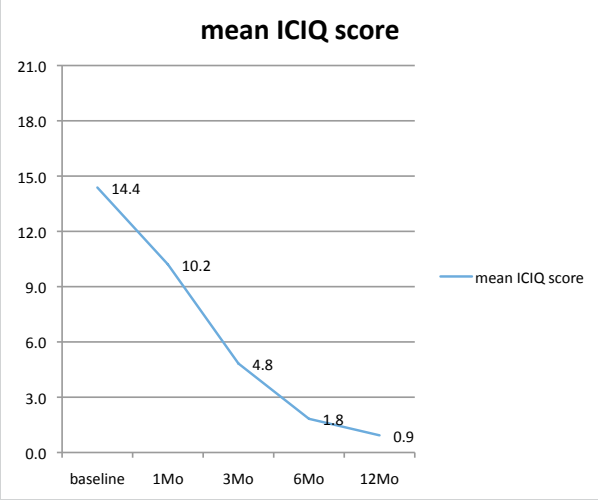
UP.670, Figure 1. Evolution of the pad weight



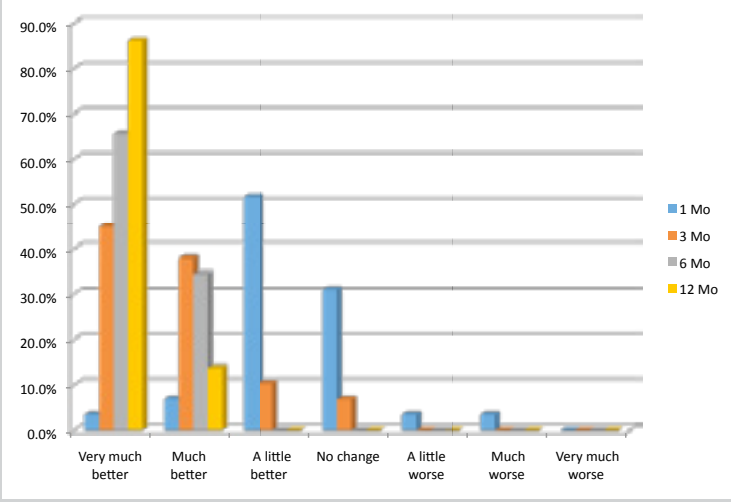
UP.670, Figure 2. Evolution of the number of pads



UP.670, Figure 3. Evolution of the ICIQSF score



UP.670, Figure 4. PGI-I (Patient's Global Impression)



afferents activated in pathological bladder condition would induce urinary urgency and incontinence, consequently leading to wet overactive bladder (wet OAB). However, a clinical role of urethral sensation remains not to be clearly defined in patients with wet OAB. The aim of the present study is to investigate relationships between urethral sensation and urge urinary incontinence (UUI) in patients with detrusor overactivity (DO) by measuring current perception threshold (CPT) in the distal urethra.

Materials and Methods: We retrospectively examined medical archives of a total of 56 consecutive patients with lower urinary tract symptoms (LUTS) who received filling cystometry (CMG) and urethral CPT measurement in our institution. Five patients with stress urinary incontinence only were excluded from the present study. Mucosal sensation of the distal urethra was evaluated as a least CPT of applied current intensity. Electrical stimulation was given mainly to activate c-fiber in 0.5 ms square pulses at 3 Hz, using a platinum electrode attached with the tip of a 14 Fr balloon catheter inserted transurethrally.

Results: A total of 51 patients met the present selection criteria, constituting 30 males and 21 females. Results of CMG categorized the study patients into three groups, neurogenic bladder with phasic or terminal DO (n=34), idiopathic DO (n=9) and normal CMG (n=8). Median urethral CPTs were 11.3mA, 5.0mA and 2.7mA, respectively, and were significantly different among the three groups (Kruskal-Wallis test, $p<0.05$). The urethral CPT values were not correlated with bladder capacity at first desire to void on CMG (Spearman's correlation coefficient: 0.25, $p=0.10$). Twenty of the 43 patients with DO had UUI as one of chief complaints (symptomatic UUI). None of the eight patients without DO complained of symptomatic UUI. Median CPT of the symptomatic UUI (12.4mA, n=20) patients was significantly higher statistically than in that of the patients without UUI (5.0mA, n=31, $p<0.05$, Mann-Whitney's U test).

Conclusion: The urethra may become hyposensitive independently of bladder sensation as the detrusor gets overactive with neurogenic backgrounds. Afferent disorders from the urethra via c-fiber, together with DO, may have synergic actions to the development of symptomatic UUI.

UP.672

How to Evaluate the Effectiveness of Combination High Dose Anticholnergic Treatment in the Management of Neurogenic Bladder after Spinal Cord Injury (SCI)

Suman D

Indian Spinal Injury Centre, Vasant Kunj, New Delhi, India

Introduction and Objectives: Clinical response in terms of leaks is used to define the adequacy of response to increasing dose or combination anticholinergic treatment of neurogenic detrusor overactivity after SCI. However, a large number of patients may not achieve safe storage pressures despite the treatment. We studied the role of IWT in the evaluation of such treatment.

Materials and Methods: Fifty patients of spinal cord injury with neurogenic detrusor overactivity (NDO) as documented on urodynamics, were put on combination high dose treatment with tolterodine LA 8 mg at bedtime and trospium chloride LA 60 mg. in the morning. After 1 month of treatment, clinical evaluation and IWT was done.

Results: Though leaks per week reduced from 32 to 4 per week, but IWT remained positive in up to 40% of cases suggestive of incomplete suppression of NDO. Interpretation of results: IWT at 1 month may be used as a marker to evaluate the effectiveness of a given treatment. Persistence of high storage pressures may be seen as incomplete response.

Conclusion: If IWT is still positive at 1 month of high dose combination anticholinergic treatment, it may indicate persistent high storage pressures and the need to pursue alternate forms of treatment such as intravesical botulinum toxin.

UP.673

Initial Experience with Botulinum-A Toxin in the Management of Neurogenic Detrusor Overactivity (NDO) in Spinal Cord Injured Patients: An Indian Experience

Suman D

Indian Spinal Injury Centre, Vasant Kunj, New Delhi, India

Introduction and Objectives: We reviewed our initial experience of the off-label use of intravesical botulinum-A toxin injection, in spinal cord

injured patients with refractory incontinence.
Materials and Methods: We studied the records of 50 patients, age range 20-55 years, including 40 male and 10 female patients, with traumatic spinal cord injury, using intermittent self-catheterization. These patients had documented severe NDO and had bothersome leaks despite a high dose of Tolterodine, LA, 8mg. All the patients had undergone cystoscopic intravesical injection of Botulinum toxin (300 units) under general anesthesia, at 30 sites on posterolateral walls, sparing the trigone. All patients had undergone follow-up for a period of one year. Evaluation records, including a three-day bladder diary and the urodynamic study, performed at baseline and at 1 year after the treatment, were reviewed.
Results: The procedure had been uneventful without any side effects. Bladder diary records of 45 patients (90%) showed 0-2 leaks per week at 1 year after treatment compared to 32 leaks per week at baseline. The leaks in the remaining five patients, though present, were also significantly reduced from 32 to 8 per week. Cystometric bladder capacity increased from 240ml at baseline to 420ml at 1year. Volume at first leakage increased from baseline 80ml to 260ml at 1 year. Maximum detrusor pressures of NDO observed at filling decreased from 100cm at baseline to 35cm at 1 year.
Conclusions: Botulinum-A toxin injections into the detrusor seem to be a safe and effective therapeutic option in spinal cord injured patients with refractory incontinence. A dose of 300 units of botulinum-A toxin seems adequate to manage refractory NDO for a period of one year.

UP.674
Indications and Timing of Revision Surgery in Patients Having Had Multiple Artificial Urinary Sphincters
Frost A, Bugeja S, Andrich D, Mundy A
University College London Hospital, London, UK

Introduction and Objectives: Many patients with an artificial urinary sphincter (AUS) go on to have one or more revisions/replacements over the course of their life. We carried out a retrospective study to evaluate how long the device lasts before it needs to be revised and whether this is reduced with each subsequent implant.
Method and Materials: A total of 469 patients underwent AUS implantation in a single unit between April 1982 and June 2013. There were 380 males and 89 females, (age 4.3-84.7 years). Those who went on to have more than one sphincter were identified and evaluated retrospectively.
Results: Of 469 patients, 211 (45%) had the AUS explanted after a mean of 68.4 months (range.0.5-365.9months). Malfunction was the main reason for removal (47%), followed by erosion (42%) and infection (11%). A hundred and forty nine patients (71%) went on to have a second device implanted. Thirty percent had it removed after a mean of 50.4 months (range 1-207.7months). In these, erosion was the commonest cause, occurring on average 47.7 months after implantation. Twenty five patients had a third sphincter inserted. Of these, 7 (28%) were explanted, most commonly due to malfunction (57%). In this group the mean time to explantation was 70.8 months however these results are skewed by one patient in whom the third sphincter lasted 254.4 months, significantly longer than the average. Six patients had a fourth device, of whom 2 were explanted after a mean of 22.8 months for malfunction and erosion respectively. One patient went on to have a fifth sphincter which was explanted following erosion at 22.8 months.
Conclusion: Replacement/revision AUS surgery is feasible. The complication rate associated with successive implantations is more or less similar, ranging between 28 and 33%. However, when complications do arise, they will occur earlier with each subsequent sphincter. This is important when counselling patients who have had multiple previous failed artificial sphincters and are being considered for even further revision surgery.

UP.675
Sacral Neuromodulation for the Treatment of Men with Detrusor Overactivity: A Prospective Evaluation
Gulamhusein A, Vyas L, Simmons R, Reid S
Royal Hallamshire Hospital, Sheffield, UK

Introduction and Objectives: Sacral Neuromodulation (SNM) is a well-established treatment option for patients with severe detrusor overactivity (DOA). DOA is more prevalent in women and its use has been well reported, however, little is known on the outcome results in men in whom it is approved by the National Institute for Health and Care Excellence (NICE). We set out to critically evaluate the success of SNM in male patients with refractory DOA in our centre.
Materials and Methods: The validated International Consultation on Incontinence Modular Questionnaire (ICIQ) was used pre and post-operatively (>3 months) to evaluate response. Overall lower urinary tract symptoms (ICIQ-MLUTS), urinary incontinence (ICIQ-UI), quality of life (ICIQ-LUTSQoL) and a bothersome score were elicited. Higher scores signified worse symptoms and QoL.
Results: Eight male patients have undergone peripheral nerve evaluation (PNE) in our centre. Seven patients proceeded to permanent implantation of the Interstim™ neurostimulator, with one not demonstrating improvement during PNE. Completed ICIQ forms were available for 6 patients as one is in the early post-operative period. Median pre-operative and post-operative scores illustrated in Table 1. Five patients demonstrated significant improvement in all domains including bothersome scores with one reporting no change.
Conclusion: Although only for select patients, SNM appears to be an efficacious treatment option in men with refractory DOA. Overall results in this small cohort of patients show significant improvement in a range of urinary symptoms with no reported surgical complications. Additional patient numbers and long term follow-up is required to evaluate this further.

UP.675, Table 1.

	ICIQ-MLUTS 0-52	ICIQ-LUTSQoL 19-76	ICIQ-UI 0-21
Pre-op	20	53.5	15.5
Post-op	10.5	29	5

UP.676
Urodynamic Characterization of Urinary Dysfunction in Adults with Cerebral Palsy
Kalyanaraman B[1,2], Nguyen A[1], Katorski J[2], **Elliott S**[1,2]
[1]Dept. of Urology, University of Minnesota, Minneapolis, USA; [2]Gillette Childrens Specialty Hospital, St. Paul, USA

Introduction and Objectives: Dysfunctional urinary elimination commonly occurs in patients with cerebral palsy (CP). Previous studies have investigated the urodynamic parameters in children with CP. In this study, we characterize the urodynamic findings in adults with CP.
Materials and Methods: This is a single-center, retrospective review of urodynamic studies (UDS) of subjects with CP between the ages of 17 and 40. Only patients who had multichannel urodynamic tracings for review were included. Patients who had undergone lower urinary tract reconstruction such as bladder augmentation and/or continent catheterizable channel creation were excluded. Patients were classified into 3 groups based on the nature of urinary dysfunction – retention (Ret), incontinence (Inc) and mixed retention and incontinence (RetInc) symptoms. Maximal cystometric capacity (MCC) and detrusor pressure (P_{det}) at MCC were derived from urodynamic tracings. From these values, compliance was calculated as the ratio of MCC to P_{det} at MCC. Impaired compliance was defined as any value less than 20 ml/cm H_2O.
Results: A total of 36 patients, 18 male and 18

female, were included (mean age 27). Thirty one (83%) had spastic quadriplegia (SQ), 4 had spastic diplegia (SD), 1 had spastic triplegia (ST) and 1 had mixed spastic and dystonic quadriplegia. Eighteen patients (50%) had Inc, 12 (33%) had Ret, and 6 (17%) had RetInc. Median MCC and range (ml) was 340 (59-1099), 552 (195-1007) and 789 (275-1291) in Inc, Ret and RetInc groups, respectively. Median compliance and range (ml/cm H2O) was 26 (2-350), 49 (3-504), and 22 (9-39) in Inc, Ret and RetInc groups, respectively. In all, 11 patients (5 in Inc and 3 each in Ret and RetInc groups) had impaired compliance.
Conclusion: CP comprises of a spectrum of motor and cognitive deficits. Urodynamic characterization based on symptoms reveals that patients with urinary incontinence have the lowest MCC. Patients with mixed symptoms tend to have high MCC and low compliance, suggesting that incontinence in this group is a result of overflow. Impaired compliance was seen in all 3 groups, thereby demonstrating the need for UDS to identify CP patients at high risk for upper tract injury so that adequate intervention can be instituted at an early stage.

UP.677
Urodynamic Evaluation before and Immediately after Robot-Assisted Radical Prostatectomy
Kadono Y, Ueno S, Yaegashi H, Izumi K, Kitagawa Y, Konaka H, Mizokami A, Namiki M
Dept. of Integrative Cancer Therapy and Urology, Kanazawa University Graduate School of Medical Science, Kanazawa, Japan

Introduction and Objectives: Systematic review and meta-analysis have shown improved recovery of urinary continence after robot-assisted radical prostatectomy (RARP). However, no previous studies have performed urodynamic evaluation of continence status immediately after RARP. We evaluated continence status immediately after RARP, changes in urodynamic parameters before and after RARP, and prognostic factors for postoperative continence status.
Materials and Methods A total of 87 patients with localized prostate cancer who underwent RARP were included. Filling cystometry, urethral pressure profilometry, and abdominal leak point pressure (ALPP) tests were performed before and immediately after RARP. The micturition volumes (MVs) and weight of urine loss (UL) in the pads were measured separately for 24 h on the day of urodynamic evaluation. Urine loss ratio (ULR) was calculated by dividing the total urine volume (UL + MV) by MV.
Results: The mean ULR after RARP was 17.8%. ULR and an early continence within 3 months of surgery rate was statistically significant ($r = -0.468$, $P < 0.001$). Nerve-sparing (NS) surgery significantly affected ULR compared with non-NS surgery. In the comparison between preoperative and postoperative results, the mean maximal cystometric capacity (MCC) and maximal closure urethral pressure (MUCP) decreased from 341 mL and 84.6 cmH_2O to 250 mL and 35.6 cmH_2O, respectively. No urine leakage was observed in ALPP test preoperatively: however, urine leakage was observed postoperatively in 75 patients (86%) with a mean ALPP of 47.7 cmH_2O. Multivariate analysis revealed that, MCC, MUCP, and ALPP after RARP were predictive factors for URL. Linear correlations were found between ULR and MUCP and between ULR and the ALPP after RARP. NS status and MUCP after RARP ($r = 0.247$, $P = 0.021$) and the ALPP ($r = 0.254$, $P = 0.018$) were significantly correlated.
Conclusion: In urodynamic evaluation immediately after RARP, MCC, MUCP, and ALPP were found to predictive factors for urinary incontinence. The NS procedure contributed to continence status after RARP. Urodynamic evaluations after RP can objectively evaluate urinary continence status.

UP.678
Electromiographic Selective Study of Periurethral Sphincter for Presurgical Prediction of Success on Male Stress Urinary Incontinence Surgery with Suburethral Slings
Useros Rodriguez E[1], Resel Folkersma L[2], Salinas Casado J[2], Hernando Arteche A[1], Garde Garcia H[1], Moreno Sierra J[2], Garcia Murga J[1]
[1]Hospital Central de la Defensa Gomez Ulla, Madrid, Spain; [2]Hospital Clinico San Carlos, Madrid, Spain

Introduction and Objectives: Transobturator slings that places bulbar urethra back in its natural, intrapelvic position, has been a revolution in the treatment of stress male urinary incontinence. A good function of periurethral sphincter seems to be important for the success of the intervention. The aim of this study was to evaluate the utility of selective electromyography of periurethral sphincter (EPS) as a tool to predict success or failure of the male stress incontinence surgical correction with transobturator slings.
Materials and Methods: Forty seven patients with stress urinary incontinence after prostate surgery were selected between 2004 and 2013. Pre-operative EPS, ICIQ-SF, urethroscopy, pad-test (grams) and body mass index (BMI) were performed in all cases. In EPS potentials morphology, reflect sphincteric response and voluntary control of the sphincter were measured. Sphincter contractility was assessed in urethroscopy. Subjective satisfaction and ICIQ-SF were performed postoperatively. Cure rate was defined as no pad use, improvement as use ≤ 1 pad per day. Success rate was compared in terms of the parameters of EPS and urethroscopy, using the chi-square. Correlation between EPS and cystoscopy findings was calculated with Kappa correlation index.
Results: Mean age was 68.28 years (SD 5.44), and median BMI of patients was 26.69 (23.7-33.2). Median pad-test weight was 310 (50-626) grams. Mean ICIQ-SF score was 19.68 preoperatively, while postoperatively, it turned to a mean of 2.89. Cure rate was 79% (23/29 patients), with a 10.5% failure rate (3/29) and 10.5% (3/29) of patients whose ICIQ-SF was reduced significantly. No significant correlation was observed for any of the parameters of the EPS relative to the outcome of intervention. Neither did we observe statistical relationship between EPS results and urethroscopy findings. No correlation was observed between endoscopic findings and EPS parameters (Kappa<0.20).
Conclusions: Selective electromyography of periurethral sphincter didn't show to be useful as a tool to predict success on surgical correction of male stress urinary incontinence with suburethral slings.

UP.679
Urodynamic's Role in Mixed Female Urinary Incontinence
Tavares da Silva E, Marques V, Castelo D, Simões P, Rolo F, Mota A
Coimbra's Hospital and University Centre, Coimbra, Portugal

Introduction and Objectives: About one third of women with urinary incontinence have the mixed type. Treatment is generally directed to the predominant component, which may vary depending on how it is determined - clinical or urodynamically. It is important to know the correlation between clinical and urodynamic findings. This work aims to characterize urodynamic's role in the diagnosis of female mixed urinary incontinence (MUI).
Materials and Methods: Retrospective study by consulting processes of female patients who underwent urodynamic study between December 2011 and March 2014 with a clinical diagnosis of MUI.
Results: Our population included 137 women with a mean age of 60.2 years. Regarding clinical predominance, in 43 cases was stress urinary incontinence (SUI), in 45 was urge urinary incontinence (UUI) and in 48 cases there wasn't a clear predominance. Urodynamic's were accordant with clinical in 41 cases, while the remaining were reclassified. There was no statistical correlation between the clinical predominance and the urodynamic study result (p=0.188). Patients with urethral hypermobility had SUI in the urodynamic study more often (p=0.007). Regarding vaginal wall prolapses, the same relationship could not be established (p=0.101). Patients with UUI in

the urodynamic study were significantly older (p=0.035) and had smaller cystometric capacity (p<0.001), first sensation volume (p=0.002) and Qmax (p=0.026).
Conclusion: In patients with clinical MUI the correlation between the predominant symptoms and the results of urodynamic studies is low. Clinical data, such as physical examination or voiding diary, may help the diagnostic process. However, when uncertainty exists, urodynamics is a helpful tool.

UP.680
Can the Degree of Bladder Trabeculation Be Used as a Predictor of Detrusor Pressure?
Hidas G[1], Wehbi E[2], Soltani T[2], Pribish, M[2], Watts, B[2], McAleer I[2], McLorie, G[2], **Khoury A**[2]
[1]Pediatric Urology Hadassah, Hebrew University Medical Center, Jerusalem, Israel; [2]University of California Irvine, Children Hospital Orange County, Orange, USA

Introduction and Objectives: Bladder trabeculation is a common finding in neurogenic bladder with hostile intravesical pressures and compliance. The exact relationship between the degree of bladder trabeculation (BT) and detrusor pressures is yet to be defined.
Materials and Methods: Spina bifida patients with neurogenic bladder who underwent video urodynamic (VUDS) were studied. Detrusor pressures (Pdet) as well as BT grade were determined for each patient at cystometric capacity. Degree of BT was defined in a 0, 1, 2 scale as previously described and validated. Patients were divided into three groups according to the degree of BT. Median and range of Pdet as well as the proportion of patients with hostile bladder pressures (defined as Pdet >30cmH_2O) were calculated for each group.
Results: The cohort consists of 31 patients, mean age 7.4(±4.4) all patients were treated with anticholinergic and clean intermittent catheterization. Twelve patients had no trabeculation (grade 0) median Pdet was 12.5 (range 0-28). Among the patients, 0% had a hostile bladder (p<0.001 when compare to Group 1 and 2). Fourteen patients had mild to moderate trabeculation (Grade1) median Pdet was 30 (range 5-53). Twenty eight percent of patients had a hostile bladder. Five patients had severe trabeculation (Grade 2) median Pdet was 30 (range 0-45). Forty percent of patients had a hostile bladder.
Conclusion: Smooth wall bladder without BT is a good predictor of safe bladder pressures. In this small cohort we couldn't find association between detrusor pressures and the degree of BT.

UP.681
Bladder Diameter Ratio as Predictive Instrument in Children with Spina Bifida and Neurogenic Bladder
Hidas G[1], Wehbi E[2], Soltani T[2], Pribish M[2], Watts B[2], McAleer I[2], McLorie G[2], **Khoury A**[2]
[1]Pediatric Urology, Hadassah and Hebrew University Medical Center, Jerusalem, Israel; [2]University of California Irvine, Children Hospital Orange County, Orange, USA

Introduction and Objectives: Elongation of the bladder is a common finding in children with a trabeculated neurogenic bladder with elevated intravesical pressures and reduced compliance. We studied the relationship between the degree of bladder elongation and detrusor pressures to determine if this ratio could possibly reliably be used in lieu of urodynamics in the future.
Materials and Methods: Patients with Spina Bifida (SB) and a neurogenic bladder (NB) who underwent video urodynamic (VUDS) were included in the study. We characterized the degree of bladder elongation as the Bladder Diameter Ratio (BDR). BDR was defined as the ratio of maximal bladder length to width as measured on cystography at its cystometric capacity. We evaluated BDR measurement with estimated elevated bladder pressures (defined as Pdet >30cmH_2O at cystometric capacity) using receiver operator curve (ROC) analysis. Sensitivity and specificity of BDR were also calculated using ROC analysis.
Results: Thirty one SB patients, all on oral anticholinergics and clean intermittent catheterization, were included in the study. The area under the receiver operating characteristic curve (AUROC) was 0.71 for the probability estimate. BDR below 0.7 gave a sensitivity of 0.8 and specificity of 0.5 for a prediction of Pdet over 30cmH_2O.
Conclusion: Bladder diameter ratio is a reasonable predictive instrument for estimating high detrusor pressures in SB children with NB. Further studies are underway to validate the role of BDR using bladder ultrasound images to estimate SB patients' response to treatment and reduce the need for frequent urodynamic studies.

UP.682
The Significance of Urodynamic After-Contractions
Coates J[1], Drinnan M[1], Leonard A[2], **Pickard R**[1], Harding C[2]
[1]Newcastle University, Newcastle-upon-Tyne, UK; [2]Freeman Hospital, Newcastle-upon-Tyne, UK

Introduction and Objectives: After-contractions (AC) are a poorly understood, urodynamic phenomenon involving a post-micturition detrusor contraction following the complete cessation of urine flow. Much of the existing literature regarding ACs is largely contradictory especially when examining for their possible clinical significance. Many series comprise small numbers and involve selected populations so opinion remains divided regarding the true relevance of ACs. The aim of this study is to assess the clinical significance of after-contractions from ambulatory urodynamic recordings in symptomatic adult female patients.
Materials and Methods: Ambulatory urodynamic recordings were obtained from symptomatic adult female patients over the period 1998-2014. Patient-reported urological symptoms such as urinary urgency or urine leakage were recorded. Urodynamic measurement of maximum urine flow rate (Q_{max}), voided volume (VV), end-filling detrusor pressure, opening detrusor pressure, maximum detrusor pressure ($P_{det.max}$) and detrusor pressure at maximum flow ($P_{det.Qmax}$) were made and recorded in a database. Gross urodynamic features such as after-contractions, Detrusor Overactivity (DO) and Urodynamic Stress Incontinence (USI) were also noted. The primary objective was to determine the relationship of ACs with any of the commonly measured urodynamic variables, specifically concentrating on clinical correlations between after-contractions and other urodynamic measurements or diagnoses.
Results: A total of 331 consecutive females aged from 16-82 years, with a median age of 50 years were included. We found that after-contractions were exhibited in 122 (37%) patients. Spearman's Rank and Chi-Squared tests have primarily shown a link between DO and ACs (p = 0.004). Predictive values of ACs for DO reveal PPV =61% and NPV = 56%. Further results using Mann-Whitney U tests have shown that ACs are also significantly linked with $P_{det.Qmax}$ (p = 0.02) and VV (p < 0.001). Specifically increases in $P_{det.Qmax}$ and decreases in VV are associated with increased probability of ACs.
Conclusion: We conclude that after-contractions are associated with several urodynamic variables. Many of these variables will be features of the clinical syndrome of Overactive Bladder (OAB). We therefore suggest a link between after-contractions and OAB. Further prospective studies are necessary to confirm this suggested relationship, but this large retrospective analysis from ambulatory urodynamics deliberately chosen to reproduce normal physiological conditions supports previous smaller studies with similar results.

UP.683
Is There Any Association between Urodynamic Findings and Bladder Capacity in Women with Urinary Incontinence?
Yucetas U, Erkan, **Kadihasanoglu M**, Karsiyakali N, Cekmen A, Mansuroglu B, Toktas M
Istanbul Training and Research Hospital, Istanbul, Turkey

Introduction and Objectives: To evaluate the association between urodynamic findings and bladder capacity in women suffer from urinary incontinence.
Materials and Methods: Between 2009 and 2013, 704 women who had undergone urodynamic investigation due to urinary incontinence were included into this analysis and divided into four groups according to urodynamic findings: Group-1 (n=200): detrusor overactivity, Group-2 (n=427): urodynamic stress urinary incontinence, Group-3 (n=26) detrusor overactivity with urodynamic stress urinary incontinence and Group-4 (n=51) normal. All the groups were statistically compared for age, patient symptoms, functional and cystometric bladder capacity. Chi-square and Kruskal-Wallis tests were used for statistical comparisons and p<0.05 was considered as significant.
Results: The comparison of the groups regarding to patients symptoms is provided in Table 1. No statistically significant difference was found among the groups regarding patients symptoms (p=0.276) and age (p=0.637). However, functional and cystometric bladder capacity in Group 1 were significantly lower (p <0.0001) (Table 2).
Conclusion: The analysis of the findings of urodynamic studies demonstrated that patients with detrusor overactivity have less bladder capacity.

UP.684

One-Stage, Dorsal Onlay Urethroplasty with Clamshell Ventral Flap in Adults with a History of Hypospadias Repair

Gor R, Brennan M, Diorio G**, Metro M**
Einstein Medical Center, Philadelphia, USA

Introduction and Objectives: Complications from corrected congenital hypospadias often result in devastating, long-term sequelae. Urethral stricture disease (USD) is the most common, and often most severe, lingering complication of hypospadias repair. Duckett pioneered the island onlay flap urethroplasty for hypospadias that many urologists caring for these patients utilize when appropriate. While its efficacy is validated, complications, including USD, are inherent. Endoscopic management is a temporizing effort. Often, staged procedures are required, prolonging convalescence. We describe our technique and preliminary experience with one-stage urethroplasty utilizing a dorsal buccal mucosa graft (BMG) onlay, with "clamshell" ventral flap in patients with refractory USD and history of island onlay hypospadias repair.
Materials and Methods: We reviewed records of four men with island onlay hypospadias repair. All patients underwent the titled procedure where the existing island onlay was lifted off its dorsal attachments and reflected ventrally, with effort taken to preserve its blood supply. An appropriately sized BMG was fixed to the attenuated dorsal plate. The mobilized flap was then enveloped over a 14 Fr catheter and three point closure involving flap, BMG, and corporal body was performed. Need for subsequent procedures were recorded. Pre-op and post-op urine flow rates (Qmax) were recorded. Additionally, we assessed two-year post-op comparative voiding-related QOL.
Results: Mean age and latency to repair were 43 and 36 years respectively. Mean follow-up was 33 months. Mean stricture length was 4.9cm. All patients had multiple prior dilations and urethrotomies. One patient developed obstructive voiding symptoms necessitating transient self-catheterization and balloon dilation. No surgical revisions were required. Mean pre-op, and two, and 24-month post-op Qmax were 5.75, 17.75, and 20.25 ml/sec respectively (Table 1).
Conclusion: We meld the advantages of a pedicled-flap and BMG tissue-transfer urethral reconstruction in a reproducible, one-stage procedure in a difficult to treat population. We report favourable preliminary outcomes. Longer follow-up and larger cohort studies are needed.

UP.683, Table 1.

	Group 1	Group 2	Group 3	Group 4
Urge incontinence (n=118)	90%	0%	0%	10%
Stress incontinence (n=389)	0%	93%	2%	5%
Mix type incontinence (n=197)	48%	33%	10%	9%

UP.683, Table 2.

	Group 1 (n=200)	Group 2 (n=427)	Group 3 (n=26)	Group 4 (n=51)	p
Age (years)	51.99±17.74	52.14±11.73	53.27±14.87	49.98±14.13	0.6378
Functional bladder capacity (ml)	175.6±96.86	316.8±109.8	237.4±120.7	302,6±134.5	**<0.0001**
Cystometric bladder capacity (ml)	243.5±121.3	445.3±123.1	319.8±126.7	397.5±157	**<0.0001**
Kruskal-WallisTest					

UP.684, Table 1. Outcome Variables

Patient No	Complications	Revision	Pre-op Qmax (mL/sec)	2-month post-op Qmax (mL/sec)	2-year post-op Qmax (mL/sec)	2-year post-op relative QOL (poor, fair, good, great)
1	Bulbar stricture requiring anastomotic urethroplasty	No	6	26	18	Great
2	None	No	8	24	28	Great
3	None	No	3	13	21	Great
4	Balloon dilation	No	6	13	12 (18 post dilation)	Good
Mean				5.75	17.75	20.25

UP.685

Multi-Institutional Experience with Pediatric Laparoendoscopic Single Site Surgery

Gor R[1], Long C[2], Shukla A[2], Kirsch A[3], Perez-Brayfield M[4], Srinivasan A[2]

[1]Einstein Healthcare Network, Philadelphia, USA; [2]The John W. Duckett Center for Pediatric Urology at the Children's Hospital of Philadelphia, Philadelphia, USA; [3]Children's Healthcare of Atlanta, Atlanta, USA; [4]University of Puerto Rico, San Juan, Puerto Rico

Introduction and Objectives: laparoendoscopic single-site (LESS) surgery modifies conventional laparoscopy (CL) by utilizing a single umbilical incision where all working instruments are placed and specimens are removed. Several small pediatric series describe acceptable outcomes for LESS. While data is conflicting regarding pain, estimated blood loss (EBL), and length of stay (LOS), established benefits of LESS are at this point, cosmetic. The present study was designed to review periprocedural outcomes from a relatively large, multi-institutional series of pediatric urology patients treated with LESS.

Materials and Methods: All LESS cases from three freestanding pediatric referral centers were reviewed. Four fellowship trained pediatric urologists performed all LESS cases between January 2011 and January 2014. Compiled data included age, sex, operative (OR) time, blood loss (EBL), length of stay (LOS), and complications according to the modified Clavien-Dindo classification. Open, Hasson technique was used for peritoneal entry and standard pediatric laparoscopic instruments were used.

Results: Fifty-four patients (mean age 8.4 years, range 4 months to 17 years) underwent 60 procedures: 28 nephrectomies, 7 nephroureterectomies, 3 bilateral nephrectomies, 5 heminephrectomies, 5 renal cyst decortications, 3 bilateral gonadectomies, 1 Malone antegrade continence enema (MACE), 1 calyceal diverticulectomy, and 1 ovarian detorsion with cystectomy. Mean OR times for all cases were comparable to available, published literature. Right nephrectomies compared with left had higher EBL (p=0.015). Overall mean LOS was 36.2 hours. One patient developed port site hernia requiring surgical repair (Clavien IIIb). One patient developed a superficial port site infection that resolved with a short antibiotic course. One patient required accessory port due to an overlapping liver; we considered this conversion to CL. Cosmetic outcomes were well received by patients and their parents.

Conclusion: The evolution of LESS technology has allowed for a wide variety of cases to be performed with outcomes comparable to CL in the hands of surgeons with laparoscopic experience. We highlight success in patients as young as 3 months of age along with application in areas not previously described such as cyst decortication, MACE, and calyceal diverticulectomy. With continued technologic innovation, we believe the future of LESS is bright.

UP.686

Single-Institution Comparative Study on the Outcomes of Salvage Cryotherapy versus Prostatectomy for Radio-Resistant Prostate Cancer

Vora A, Nething J, Marchalik D, Calafell J, Jawed A, Vaish S, Ercole B, Shrivastava A**, Muruve N**

Dept. of Urology, Cleveland Clinic Florida, Weston, USA

Introduction and Objectives: Although primary treatment of localized prostate cancer provides excellent oncologic control, some men who chose radiotherapy experience a recurrence of disease. Currently, there is no consensus on the most appropriate management of these patients after radiotherapy failure. Curative treatments after radiotherapy failure also pose significant morbidity, including urethral stricture, rectal injury, and urinary fistulae. In this single-institution review, we compare our oncologic outcome and toxicity between salvage prostatectomy and cryotherapy treatments here at Cleveland Clinic Florida.

Materials and Methods: From January 2004 to June 2013, a total of 23 salvage procedures were performed. Six of those patients underwent salvage robotic prostatectomy (AS) while 17 underwent salvage cryotherapy (NM) by two of our high volume fellowship trained urologists. Patients who were being considered for salvage therapy had localized disease at presentation, a prostate-specific antigen < 10 at recurrence, life expectancy >10 years at recurrence, and a negative metastatic workup. Patients were followed postoperatively to observe for cancer progression, and any toxicity of treatment or complications.

Results: With a mean follow-up of 14.1 and 7.2 months, the incidence of disease progression was 23.5 % and 16.7% after salvage cryotherapy and prostatectomy respectively. The overall complication rate was also 23.5 % vs. 16.7 % with the most frequent complication after salvage cryotherapy being urethral stricture and after salvage prostatectomy being severe urinary incontinence. There were no rectal injuries with salvage prostatectomy and only one recto-urethral fistula in the cohort after salvage cryotherapy. Patients who underwent salvage cryotherapy were statistically older with a higher incidence of hypertension than our salvage prostatectomy cohort.

Conclusion: While recurrences from primary radiotherapy for prostate cancer do occur, there is no consensus on its management. In our experience, salvage procedures were generally safe and effective. Both salvage cryotherapy and salvage prostatectomy allow for adequate cancer control with minimal toxicity. Our cancer free rates and overall complication rates were lower with robotic salvage prostatectomy. The authors feel that with the advantages of visualization and precision of robotic surgery, in conjunction with the extensive experience of our surgeons here at Cleveland Clinic Florida, robotic salvage prostatectomy may give better outcomes for patients who have radiotherapy failure.

UP.687

Experience of Complication in 800 Cases of Robotic-Assisted Radical Prostatectomy by a Single Surgeon

Ou Y

Taichung Veterans General Hospital, Taiwan

Introduction and Objectives: To report the complications of 800 cases of robotic-assisted laparoscopic radical prostatectomy (RALP) performed by a single surgeon in Taiwan.

Materials and Methods: Complication (Clavien system) rates were prospectively assessed in 800 consecutive patients undergoing RALP (Group I: cases 1-200; II: 201-400; III: 401-600 and IV: 601-800). Clinical pathway was described below: Patients were allowed to have water and then resumed regular diet on POD 1-2. The drainage tube was removed and intravenous fluid discontinued on POD 1-3. Urine leakage was defined as urine drainage > 100 ml at POD 4. Ileus was defined as inability to resume normal diet at POD 4.

Results: Significantly less blood loss occurred after every 200 cases of RALP (Group I 180 ml, II 119 ml, III 92 ml, IV 91ml, p<0.05). Blood transfusion (BT) incidence was 3.5%, 0.5%, 1% and 0% in Groups I, II, III and IV, respectively. The total complication was 6.75% (54/800) (surgical/medical: 5.25% / 1.5%). Complication rate was 12%, 5.5%, 6% and 3% in Groups I, II, III and IV respectively. Major complications (grade III-IV) were 2.5%, 1.5%, 2% and 0.5% in Groups I, II, III and IV, respectively. The most complication was BT (10/800=1.25%).

Conclusions: Learning curve for every 200 cases of RALP showed significantly less blood loss and BT rate. The keys to prevent complication was pre-operation evaluation meticulously and a dedicated robotic team to do RALP intraoperatively. Early diagnosis and management of complication is paramount in patients have any deviation from the normal postoperative course and clinical care pathway.

UP.688

The Outcome of Pentafecta in 212 Cases of Robotic-Assisted Radical Prostatectomy with Bilateral Neurovascular Bundle Preservation

Ou Y

Taichung Veterans General Hospital, Taiwan

Introduction and Objectives: To analyze the pentafecta outcome [free complication, continence, potency, negative surgical margin

and free biochemical recurrence (BCR)] of 212 cases of robotic-assisted laparoscopic radical prostatectomy (RALP) with bilateral neurovascular (NVB) preservation performed by a single surgeon in Taiwan.

Materials and Methods: A prospective assessment of outcomes in 212 patients who underwent RALP with bilateral NVB and were followed-up for more than one year. Those patients were classified: low risk: 113 cases, intermediate risk: 74 cases and high risk: 25 cases. We evaluated the perioperative complication, continence and potency function and cancer control with negative surgical margin and free biochemical recurrence). Continence was defined as the use of 'no pads'. Potency was defined as the ability to achieve and maintain satisfactory erections firm enough for sexual intercourse with/without the use of oral PDE5 inhibitors. Positive surgical margin (PSM) was defined as the presence of tumour tissue on the inked surface of the specimen. BCR was defined as two consecutive PSA levels of >0.2 ng/mL after RALP.

Results: Mean age of patient was 60.8 years and mean PSA level was 7.8 ng/ml. The free complication rate was 94.34% (200/212). The continence rate was 98.58% (209/212), potency 86.79% (184/212), negative surgical margin 77.83% (165/212) and free-BCR 92.92% (197/212). The trifecta rate (continence, potency and free BCR) was 80.18% (170/212). The pentafecta rate was 65.09% (138/212).

Conclusions: The pentafecta is a new-standard of outcome for robotic-assisted laparoscopic radical prostatectomy with bilateral NVB. The key to best pentafecta outcome is learning curve and patient selection.

UP.689

Active Surveillance for Prostate Cancer: A Comparison of Japan and the Netherlands

Bokhorst L[1], **Alberts A**[1], Kakehi Y[2], Sugimoto M[2], Hirama H[2], Venderbos L[1], Bangma C[1], Roobol M[1]

[1]Dept. of Urology, Erasmus University Medical Center, Rotterdam, The Netherlands; [2]Dept. of Urology, Kagawa University Faculty of Medicine, Kagawa, Japan

Introduction and Objectives: Low risk prostate cancer (PCa) is less commonly diagnosed among Japanese men, mainly because of low PSA screening rates. Japanese men with PCa on active surveillance (AS) could therefore be different form Dutch men.

Objective: To compare baseline characteristics and outcome at first repeat biopsy of Japanese and Dutch men with PCa on AS.

Materials and Methods: 380 Japanese and 1590 Dutch men with low-risk PCa were included in the ongoing prospective Prostate cancer Research International: Active Surveillance (PRIAS) study until October 2013. Men were regularly examined using PSA, DRE, and repeat biopsy and advised to switch to definitive treatment if progression occurred (clinical stage >=T3, Gleason score (GS) >3+3, >2 cores with PCa at repeat biopsy, PSA-doubling time (PSADT) <=3 yr (only after 5 PSA values were available)). Main outcome was GS and number of cores positive at first repeat biopsy (1 yr after diagnosis).

Results: At diagnosis Japanese men had lower prostate volume, lower PSA, more often clinical stage T1c, more biopsy cores taken, and less often 2 cores positive with PCa (Table 1). At first repeat biopsy, Japanese men more often presented a GS >=7 (18.4% versus 10.5%, p-value 0.006) (Table 1). At Multivariable analysis (correction for PSA at diagnosis, prostate volume at diagnosis, positive cores at diagnosis and total cores taken at repeat biopsy) being Japanese was not a statistically significant predictor for GS >=7 (odds ratio 1.57; 95% confidence interval 0.93-2.65). Number of cores positive with PCa did not differ significantly between Japanese and Dutch men.

Conclusion: Japanese men on AS more often had GS upgrading at first repeat biopsy compared with Dutch men. After correction for clinical characteristics being Japanese was not a statistically significant predictor of GS upgrading.

UP.689, Table 1. Characteristics at Diagnosis and at First Repeat Biopsy

	Netherlands	Japan	P-value*
Characteristics at diagnosis			
Age (median)	66.1	67.9	<0.001
PSA (median)	6.1	5.2	<0.001
Prostate volume (median)	46.0	37.7	<0.001
PSA density (median)	0.131	0.148	<0.001
cT-stage (%)			<0.001
T1c	1279 (80.4)	349 (91.8)	
T2	311 (19.6)	31 (8.2)	
Number of cores taken (%)			<0.001
<10	792 (49.8)	34 (8.9)	
10-12	733 (46.1)	259 (68.2)	
>12	65 (4.1)	87 (22.9)	
Cores positive (%)			.026
1	1065 (67)	277 (72.9)	
2	525 (33)	103 (27.1)	
Total (%)	1590 (100)	380 (100)	
Characteristics at first repeat biopsy			
PSA (median)	6.1	6.0	0.895
Number of cores taken (%)			<0.001
<10	379 (40.1)	8 (4)	
10-12	511 (54.1)	139 (69.2)	
>12	55 (5.8)	54 (26.9)	
Cores positive (%)			0.512
0	345 (36.5)	70 (34.8)	
1	239 (25.3)	47 (23.4)	
2	171 (18.1)	34 (16.9)	
>2	190 (20.1)	50 (24.9)	
Gleason score (%)			0.006
No prostate cancer	345 (36.5)	70 (34.8)	
<=6	501 (53)	94 (46.7)	
>=7	99 (10.5)	37 (18.4)	
Total (%)	945 (100)	201 (100)	

*Univariate analysis (Mann-Whitney U/ Chi-Square)

UP.690

Biopsy Rates after PSA Testing at the General Practitioner Are Low, Even at High PSA Values

Bokhorst L, Roobol M
Dept. of Urology, Erasmus MC, Rotterdam, The Netherlands

Introduction and Objectives: Different cutoff values of PSA are used to trigger a prostate biopsy. General practitioners (GP) might however be more reticent to refer men for prostate biopsy and use higher cutoff values. Our objective is to study the rates of men referred for prostate biopsy by the general practitioner per PSA range.

Material and Methods: Men included in the European Randomized study of Screening for Prostate Cancer (ERSPC) Rotterdam were studied (n=42376). Data on all PSA tests done by the GP were collected by linkage to the central GP laboratory from 1997 to 2011. PSA tests after the diagnosis of prostate cancer were excluded. A subsequent prostate biopsy (within 1 year) after every PSA test was determined by linkage to the nationwide network and registry of histopathology and cytopathology in the Netherlands (PALGA [Pathologisch-Anatomisch Landelijk Geautomatiseerd Archief]). Biopsy rates were studied in pre-defined PSA and age groups.

Results: In total, 37931 PSA tests were performed in 14198 men during follow-up (1997-2011); 2190 PSA tests (5.8%) were followed by a subsequent prostate biopsy. Biopsy rates were relatively low in men with a PSA of 4-10ng/ml (17.7%) and even men with a PSA >=10ng/ml (35.0%) (Table 1 and Figure 1). A substantial part of PSA tests (9.7%) were done in men aged 80 or above, of which 2.9% received a subsequent prostate biopsy.

Conclusion: PSA testing at the GP is not uncommon. Interpretation of the PSA value seems to differ from urological practice with only 1/3 of men with a PSA value >=10ng/ml receiving a subsequent prostate biopsy. Men with such high PSA values are at increased risk of having (high-risk) prostate cancer and might require further diagnostics more often.

UP.691

Rule-Based versus Probabilistic Selection for Active Surveillance for Prostate Cancer

Venderbos L[1,2], Roobol M[1], Bangma C[1], van den Bergh R[1], Bokhorst L[1], Godtman R[3], Hugosson J[3], Steyerberg E[2]
[1]Dept. of Urology, Erasmus University Medical Center, Rotterdam, The Netherlands; [2]Dept. of Public Health, Erasmus University Medical Center, Rotterdam, The Netherlands; [3]Dept. of Urology, Sahlgrenska Academy at Göteborg University, Göteborg, Sweden

Introduction and Objectives: Inclusion criteria for active surveillance (AS) for prostate cancer (PC) intend to select men who have histopathological insignificant disease. We explored the effect of applying various sets of rule-based criteria for AS and of using probabilistic selection through a nomogram on the frequency of indolent PC at radical prostatectomy (RP).

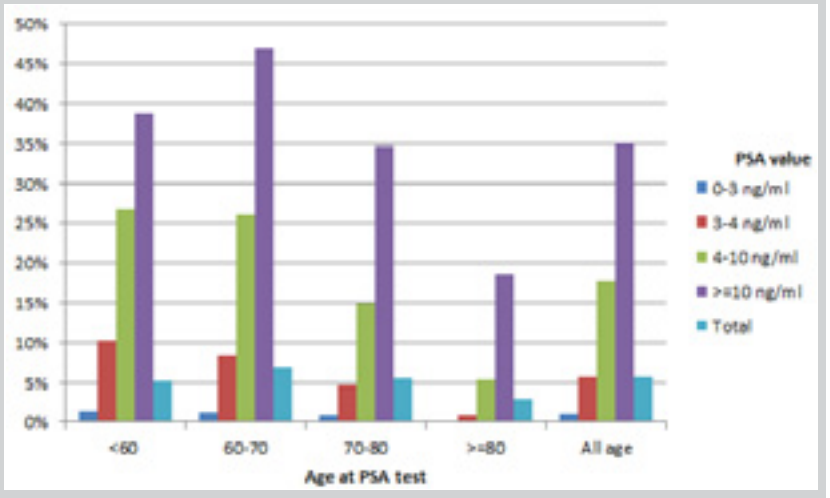
Materials and Methods: We studied Dutch and Swedish patients participating in the European Randomized study of Screening for Prostate Cancer (ERSPC) and assessed indolent PCa (defined as < 0.5 ml) and biochemical progression (BCP) during follow-up in men with T1-T2, Gleason 6 (Gleason pattern ≤3) disease at diagnosis. Men not fulfilling these indolent criteria were marked as having significant PCa. In the various sets of rule-based and nomogram-based AS criteria, we explored whom met our indolent/significant PCa definition and whom experienced BCP. Performancesof the Prostate cancer Research International: Active Surveillance (PRIAS), Klotz, Johns Hopkins criteria, and the Steyerberg nomogram are compared.

Results: Our study cohort consisted of 864 men of whom 619 men were eligible for analyses. The median follow-up amounts to 8.9 years after diagnosis. A total of 37% had indolent PC at RP. Criteria for suitability for AS (PRIAS, Klotz and Johns Hopkins) and for the nomogram increased this number to 51%, 38%, 61% and 42% respectively with 45%, 69%, 22% and 58% of men remaining suitable. Stricter rule-based criteria and higher thresholds of the risk of indolent disease resulted in a higher frequency of indolent disease that was included, but at the cost of a decrease in the number of men suitable for AS (Table 1). These refinements in selection did not have a significant effect on BCP rates (> 0.05) (Figure 1).

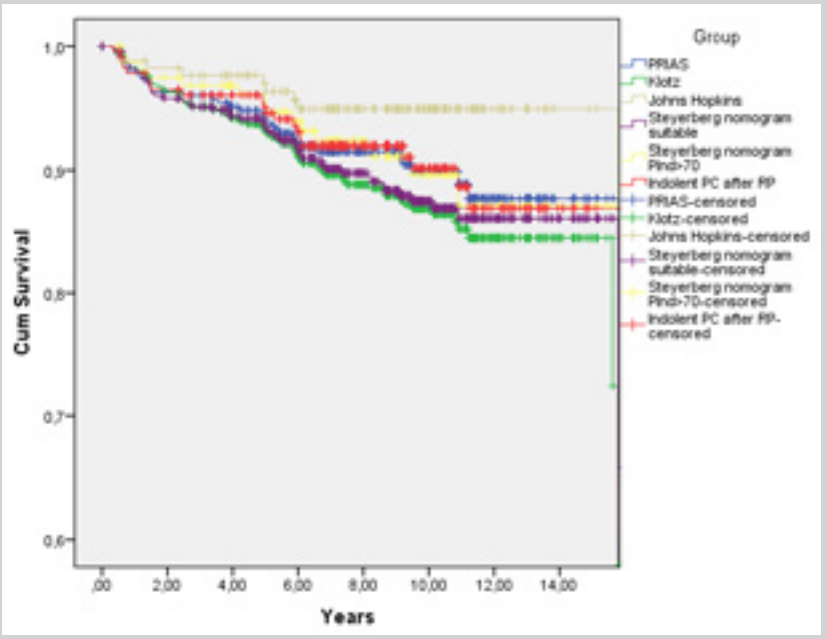
UP.690, Table 1. Number of PSA Tests and Subsequent Biopsy Rates per Age and PSA Value

Age, years	<60		60-70		70-80		>=80		All age	
PSA, ng/ml	PSA (% of total	Subsequent biopsy (% of PSA)	PSA (% of total)	Subsequent biopsy (% of PSA)	PSA (% of total)	Subsequent biopsy (% of PSA)	PSA (% of total)	Subsequent biopsy (% of PSA)	PSA (% of total)	Subsequent biopsy (% of PSA)
0-3	1055 (81.9)	14 (1.3)	11103 (74.6)	139 (1.3)	11856 (65.6)	102 (0.9)	2239 (60.6)	4 (0.2)	26253 (69.2)	259 (1)
3-4	69 (5.4)	7 (10.1)	1164 (7.8)	99 (8.5)	1756 (9.7)	81 (4.6)	362 (9.8)	3 (0.8)	3351 (8.8)	190 (5.7)
4-10	146 (11.3)	39 (26.7)	2186 (14.7)	571 (26.1)	3657 (20.2)	547 (15)	791 (21.4)	43 (5.4)	6780 (17.9)	1200 (17.7)
>=10	18 (1.4)	7 (38.9)	435 (2.9)	204 (46.9)	792 (4.4)	274 (34.6)	302 (8.2)	56 (18.5)	1547 (4.1)	541 (35)
Total	1288 (100)	67 (5.2)	14888 (100)	1013 (6.8)	18061 (100)	1004 (5.6)	3694 (100)	106 (2.9)	37931 (100)	2190 (5.8)

UP.690, Figure 1. Biopsy Rates after PSA Testing Depicted by Age and PSA Value



UP.691, Figure 1. Time to Biochemical Progression (> 0.2 ng/ml) after Radical Prostatectomy in Men with PC Fitting the PRIAS AS Criteria, Klotz AS Criteria, Johns Hopkins Criteria or a Nomogram Application



UP.691, Table 1. The Effect of Applying Different Sets of Diagnostic AS Criteria and the Use of a Nomogram for Selecting Indolent PC at RP

	Suitable (%)	Indolent included (%)	Sens.	Significant included (%)	Spec.	BCP (%)
Total	619 (100)	229 (37)		390 (63)		82 (13)
PRIAS criteria	354 (57)	180 (51)	79%	174 (49)	55%	34 (10)
Klotz criteria	537 (87)	207 (39)	90%	330 (61)	15%	66 (12)
Hopkins criteria	171 (28)	104 (61)	45%	67 (39)	82%	9 (5)
Nomogram	455 (74)	193 (42)	84%	262 (58)	33%	51 (11)
Nomogram Plnd > 70	161 (26)	94 (58)	41%	67 (42)	83%	14 (9)

Conclusion: Above results show that even when applying the most stringent criteria for both methods (rule-based vs. nomogram) men with histopathologically significant PC are included. We should focus however, on searching for easy to handle AS inclusion criteria with favorable sensitivity/specificity ratios. On the basis of current available evidence, it is thought that MRI might play a substantial role here.

UP.692

Is Scrotal Ultrasound Scan Necessary in Patients with Clinically Suspected Benign Testis Pathology?

Wardak S, Masood K
Dept. of Urology, University Hospitals of Leicester, Leicester General Hospital, Gwendolen Road, Leicester, UK

Introduction and Objectives: Testes lesions are a common occurrence with the vast majority being of benign pathology. Scrotal Ultrasound scans (SUSS) are routinely performed to exclude an underlying malignant pathology. However, to determine whether this is necessary in the absence of clinical suspicion, we performed a retrospective study examining SUSS reports at our Institution.

Materials and Methods: Between January 2012 and December 2013, a total of 3298 men with a median age of 37 years (range: 16-60 years) underwent a SUSS performed by a mixture of radiographers and radiologists. Of these, 1552/3298 (47%) with a median age of 36 years (range: 16-60 years) were included in our study; 1746 (53%) were excluded, as they were thought to have an infective, malignant or traumatic testis.

Results: Twenty seven out of 1552 (1.7%) had a sinister SUSS and were referred to Urology MDT. Of these, 18/27 (67%) with a median age of 32 years (range: 19-59 years) were still regarded as having a malignant pathology and underwent an orchidectomy. Histology revealed a malignant pathology in 15/18 (83%). Overall, 18/1552 (1.2%) had an unexpected suspicious SUSS supported at MDT with 15/1552 (1%) having a confirmed malignant pathology.

Conclusion: Our large retrospective study has demonstrated that 1% of men with clinically benign testis lesion will actually have an underlying unsuspected malignant pathology. Therefore, SUSS should be considered in all men presenting with a testis lesion.

UP.693

Post-Percutaneous Nephrolithotomy Infectious Complications: A Prospective Analysis of Risk Factors

Bozkurt I, Degirmenci T, Yonguc T, Arslan B, Kozacioglu Z, Gunlusoy B, Minareci S
Dept. of Urology, Izmir Bozyaka Training and Research Hospital, Izmir, Turkey

Introduction and Objectives: We prospectively analyzed the preoperative and intraoperative risk factors for infectious complications after percutaneous nephrolithotomy (PCNL).

Materials and Methods: Between January 2011 and November 2013, a total of 303 patients underwent PCNL. The demographic data and perioperative variables were prospectively recorded. The preoperative urine culture (UC), intraoperative stone culture (SC) and renal pelvic urine culture (RPUC) were obtained from all patients. All patients were followed for signs of systemic inflammatory response syndrome (SIRS) and sepsis.

Results: Of all 303 patients, 87 had recurrent urinary tract infection history, 21 had preoperative nephrostomy and 80 had past ipsilateral renal surgery. Mean stone burden was 609 mm^2 (range 150 to 2400). In 39 (12.9%) of the patients ≥2 tracts were required whereas in 264 (87.1%) only one. Mean operative time was 119 minutes (range 40 to 240). After PCNL residual fragments were detected in

UP.693, Table 1. Patients' Characteristics and Perioperative Variables

	SIRS (-) n=220	SIRS (+) n=83	P vaule
Age (years)	46.9 ±12.1	45.2 ±13.7	0.18*
Body mass index (kg/m^2)	27.4 ±5.1	25.9 ±4.7	0.523*
Stone burden (mm^2)	568.1 ± 357.4	720.9 ±438.9	0.001*
Operation time (min)	113.2 ±38.7	135.2 ±35.9	0.000*
Fluoroscopy time (min)	93.4 ±62.1	104.6 ±71.2	0.464*
Previous ipsilateral renal surgery (n)	87	34	0.822**
Preoperative nephrostomy (n)	15	6	0.9**
Recurrent urinary tract infection (n)	53	35	0.002**
Tract number ≥2 (n)	36	24	0.014**
Transfüzyon (n)	15	15	0.003**
Residual stone (n)	76	36	0.156**
Struvite stone (n)	2	12	0.000***
Positive preoperative culture (+) (n)	21	12	0.221**
Positive renal pelvic culture (+) (n)	15	7	0.629**
Positive stone culture (+) (n)	27	10	0.958**

* t-test
** chi-square
*** Fischer's exact test

112 patients (37%). After the procedure, 31 patients (10.2%) needed blood transfusion. In 83 patients (27.4%) SIRS was developed, and of these patients, 23 (7.6%) were diagnosed as sepsis. At univariate analysis stone burden, operation time, recurrent urinary tract infection history, multiple tract, struvite stone, blood transfusion were found to be predictors of SIRS. Additional to these factors sepsis was found to be associated with fluoroscopy duration, past ipsilateral renal surgery, residual stones and positive preoperative urine culture. By multivariate analysis, presence of infection stone (p=0.01), stone burden (p=0.009) and recurrent urinary tract infection (p=0.04) were associated with SIRS development.
Conclusion: Number of tracts, receipt of blood transfusion, stone size, operation time, recurrent urinary tract infection history and struvite stones are identified as the key risk factors for SIRS after PCNL.

UP.694

The Administration of Any Additional Bacillus Calmette-Guérin beyond Induction Therapy Improves Overall Survival in High-Grade T1 Bladder Cancer

Smith Z[1], Jayarajan S[2], Sterling M[1], Canter D[3], Issa M[3], Dobbs R[3], Malkowicz S[1], Guzzo T[1]
[1]Div. of Urology, Hospital of the University of Pennsylvania, Philadelphia, USA; [2]Dept. of Surgery, Temple University Hospital, Philadelphia, USA; [3]Dept. of Urology, Atlanta Veterans' Affairs Medical Center and Emory University School of Medicine, Atlanta, USA

Introduction and Objective: High-grade T1 (HGT1) bladder cancer (BCa) represents a challenge for clinicians in that the risk of disease progression must be weighed against the morbidity of early radical cystectomy. Intravesical Bacillus Calmette-Guérin (BCG) has proven the most effective treatment in preventing recurrence and progression of high-risk non-muscle-invasive bladder cancer (NMIBC). The addition of BCG maintenance therapy is associated with further benefit. While a full BCG maintenance course is often difficult for patients to complete, we sought to describe the impact of any BCG administration beyond induction therapy on the survival of patients with an initial presentation of HGT1 BCa.
Materials and Methods: We queried the NMIBC databases that have been established independently at the Atlanta Veterans Affairs Medical Center and the Hospital of the University of Pennsylvania to identify patients who presented with HGT1 as their initial BCa diagnosis. Demographic, clinical, and pathologic variables as well as overall survival (OS), recurrence-free survival (RFS), and progression-free survival (PFS) were examined. Categorical variables were analyzed using Fisher's exact and Pearson's chi-squared tests. Survival analyses were performed by Kaplan-Meier via Logrank test.
Results: A total of 224 patients were identified; 199 (88.8%) and 201 (89.7%) were male and non-African American, respectively. Mean patient age was 66.5 years. Also, 203 (90.6%) of the patients presented with isolated HGT1 disease while 21 (9.4%) patients presented with HGT1 and concomitant carcinoma in-situ. Induction BCG was utilized in 174 (77.7%) patients, with 110 (63.2%) of these patients receiving some degree of BCG maintenance therapy. The 5-year and 10-year OS for patients who received only an induction course of BCG (58.5% and 48.7%) were poorer than those that received induction therapy plus any degree of maintenance therapy (84.8% and 74.0%) (p=0.0234). Differences in RFS and PFS were not significant between groups.
Conclusions: In our large cohort of patients with primary HGT1 BCa, we found that the administration of any additional BCG after induction therapy yields a significant impact on OS. This study reaffirms the importance of continuing with additional BCG after completion of induction therapy.

UP.695

The Relationship between Lower Urinary Tract Symptom and Depressive Symptom

Moon H[1], Lee J[1], Park S[1], Nam J[2], Kim S[2], Choi B[2]
[1]Dept. of Urology, College of Medicine, Hanyang University, Seoul, South Korea; [2]Dept. of Preventive Medicine, College of Medicine, Hanyang University, Seoul, South Korea

Introduction and Objectives: Depression disorder is a representative psychological disease, with a high prevalence in the world. Depressive symptom is often accompanied by other chronic diseases. Recent research results showed depressive symptoms may affect symptoms of benign prostatic hyperplasia. This investigation was conducted a community based cross-sectional study to evaluate the correlation between LUTS and depressive symptom.
Materials and Methods: The survey was carried out during 4 periods, August 2009, August 2010, August 2011, and August 2012 in a rural community area. Two validated questionnaires were used to examine the LUTS and depression symptoms, the International Prostate Symptom Score/Quality of Life (IPSS/QoL) and Korean version of Center for epidemiological studies-depression scale (CES-D-K). All participants were over 40 years old, and completed the IPSS/QoL and CES-D-K. If CES-D-K scores were over 16 points, then the patients were classified to the depressive symptom group. There were also interviewed about socio demographic and behavioral factors.
Results: A total of 711 men were included in the study, and a total 35 cases (4.92%) were classified as a depressive symptom. Classifying in accordance to the LUTS severity, there was a significant increase in depressive symptom prevalence rate as LUTS became severe (p=0.002) (Table 1). All of 7 IPSS factors showed a significant correlation with a depressive symptom. Among the factors, the urgency factor (OR=1.308, 95% CI: 1.114-1,536)

UP.695, Table 1. Prevalence of Depressive Symptoms According to Lower Urinary Tract Symptom

	DEP (n=35)		non-DEP (n=676)		*P*-value	*P* for trend
LUTS severity						
Mild (0-8)	13	(2.8)	455	(97.2)	0.002	<0.001
Moderate (8-19)	15	(8.2)	168	(91.8)		
Severe (20-35)	7	(11.7)	53	(88.3)		

Abbreviation; DEP: depressive symptom, LUTS: lower urinary tract symptom.
Value is expressed as %.
Result is adjusted for age.
P-value and *P* for trend were calculated using Cochran-Mantel-Haenszel test for categorical variables.

and straining factor (OR=1.309, 95% CI: 1.115-1.537) showed relatively high risk on depressive symptom, respectively significant. However, QOL factor (OR=0.997, 95% CI: 0.771-1.288) was not significant statistically. Categorized into voiding symptom and storage symptom within LUTS, the severity of voiding symptom was closely related to the cause of depressive symptom (OR 2.661, 95% CI: 1.267-5.588). In contrast, no significant relationship could be found between storage symptom and depressive symptom.

Conclusion: Men with severe LUTS have a higher risk of suffering from depressive symptom. Especially in the case of LUTS, the severity of voiding symptom aggravates depressive symptom. Therefore, such patients showing more voiding symptom, should be treated more actively.

UP.696

Preoperative, Postoperative Renal Function Test Using TC 99m-DTPA following Laparoscopic and Robot-Assisted Partial Nephrectomy at Short Warm Ischemic Time

Kim J[1], Hong S[1], Kim K[1], Choi Y[1], Bae W[1], Cho H[1], Lee J[1], Kim S[1], Hwang T[1], Park H[2]
[1]Dept. of Urology, College of Medicine, The Catholic University of Korea, Seoul, South Korea; [2]Dept. of Urology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, South Korea

Introduction and Objectives: Nephron sparing surgery is considered the standard of treatment for most patients with renal mass. We evaluate preoperative, postoperative glomerular filtration rate (GFR) of patient undergoing laparoscopic partial nephrectomy (LPN) and robot-assisted partial nephrectomy (RAPN) at short warm ischemic time (WIT).

Materials and Methods: We included 42 patients of short WIT (<30 min) who underwent LPN (n=34) and RAPN (n=8) from November 2011 to February 2013. Technetium Tc 99m-diethylenetriaminepentaacetic acid (TC99m-DTPA) to determine GFR was performed before and 3 month after operation. We analyzed TC 99m-DTPA scintigraphy GFR both operated kidney and contralateral kidney. GFR was normalized by body surface area (BSA) and the GFR using serum creatinine was also estimated a modified Cockcfort-Gault formula adjust for BSA (CG-GFR).

Results: Median WIT was 23.1±5 minutes. Preoperative, postoperative serum creatinine level did not show a difference (0.9±0.2mg/ vs. 0.9±0.3mg P=0.521). Reduction in GFR of operated kidney and increasing GFR of contralateral kidney showed a significant difference (54.3±13ml/min/1.73m^2 vs. 43.7±13.8ml/min/1.73m^2 P=0.000, 50.17±8.1 ml/min/1.73m^2 VS 59.2±14.7 ml/min/1.73m^2 P=0.001 respectively). Preoperative and postoperative GFR of total kidney showed difference (109.4±21.9ml/min1.73m^2 vs. 102.2±24.8ml/ min1.73m^2 P=0.026), but preoperative and postoperative CG-GFR of total kidney was increased but not show statistical difference (88.6±20.2ml/min/1.73m^2 vs. 93.2±26ml/ min/1.73m^2 P=0.073).

Conclusions: Our result showed that short WIT cannot prevent decreasing renal function of operated kidney, and contralateral kidney compensates decreasing renal function of operated kidney. Because of declining postoperative GFR of total kidney, possible to preserve the kidney is considered better. We identified that partial nephrectomy has an important role in preserving the renal function measure by TC 99m-DTPA. But the limitation of this study was the small enrolled numbers and short follow-up periods.

UP.697

Enzalutamide in Patients with Metastatic Castration Resistant Prostate Cancer Previously Managed with Docetaxel and Abiraterone: A Multi-Center Analysis

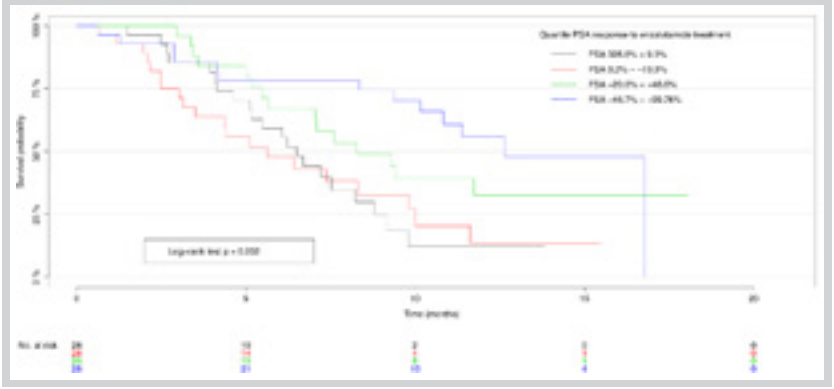
Brasso K[1], Thomsen F[1], **Røder M**[1], Schrader A[2], Schmid S[3], Lorente D[4], Retz M[3], Merseburger A[5], von Klot C[5], Boegemann M[6], de Bono J[4]
[1]Dept. of Urology, Copenhagen Prostate Cancer Center, Rigshospitalet, University of Copenhagen, Denmark; [2]Dept. of Urology, Ulm University Medical Center, Ulm, Germany; [3]Urologische Klinik und Poliklinik, Technische Universität München, Munich, Germany; [4]Royal Marsden NHS Foundation Trust and The Institute of Cancer Research, Sutton, UK; [5]Dept. of Urology and Urological Oncology, Hannover Medical School, Germany; [6]Dept. of Urology, Muenster University Medical Center, Muenster, Germany

Introduction and Objectives: The anti-tumour activity of enzalutamide in post-chemo metastatic CRPC patients following progression on abiraterone is still at debate. We examine the effect of enzalutamide in patients progressing following taxane-based chemotherapy and abiraterone.

Materials and Methods: Post-chemo mCRPC patients who participated in four European compassionate use programs of enzalutamide were included. The primary endpoint was overall survival (OS). Secondary endpoints were association between OS and PSA response, patient characteristics, and progression free survival (PFS), respectively. Kaplan-Meier survival analysis and Cox proportional hazard analysis were performed.

Results: The study includes 137 patients, who prior to enzalutamide had progressed following a median of 8 cycles of docetaxel and 7 courses of abiraterone. Median time on enzalutamide was 3.2 months. Median overall survival from commencing enzalutamide was 8.3 months (95% CI 6.8-9.8). Only 45 (38%) and 22 (18%) of the patients had a PSA decline greater than 30%

UP.697, Figure 1.



and 50%, respectively. Survival was significantly higher in the patients responding with the top 25% PSA response. Patients with a 30% PSA decline or higher had a significantly improved survival compared to patients with a PSA response <30% (11.4 months vs. 7.1 months, p=0.001, respectively) Likewise, a PSA response >50% was associated with an improved survival (12.6 vs. 7.4 months, p=0.007, respectively). Poor performance status and low hemoglobin associated negatively with overall survival. The major limitations of this study include the retrospective design, and lack of standardized imaging follow-up.
Conclusion: Enzalutamide exert a modest biochemical response in post-chemotherapy mCRPC patients previously treated with abiraterone. A PSA response during enzalutamide treatment seems to be associated with longer survival probability.

UP.698
Isolated Tuberculous Epididymo-Orchitis Mimicking Testicular Cancer: Review of Six Cases
Yonguc T**, Bozkurt I**, Yarimoglu S, Degirmenci T, Kozacioglu Z, Gunlusov B
Dept. of Urology, Izmir Bozyaka Training and Research Hospital, Izmir, Turkey

Introduction and Objectives: To review the isolated tubeculous epididymo-orchitis in 6 cases that underwent radical inguinal orchiectomy (RIO) procedure because testicular cancer was suspected.
Materials and Methods: Between 2008 and 2014, 79 patients with scrotal mass were treated by RIO. Histopathological diagnoses of the 6 patients among 79 patients were granulamotous epididymo-orchitis. The age range was 47-73 years. The most common symptom of these patients was acute enlargement of the hemiscrotum. There were no signs of inflammation so they were assumed to be solid scrotal masses. None of them had a medical history of tuberculosis. Location was right scrotum in 4 patients and left scrotum in 2 patients. Physical examination of the 6 patients was similar; the scrotal contents were enlarged with loss of definition between the epididymis and testis. Palpation of the testis was painful in 4 patients and painless in 2 patients. Color doppler ultrasonography of the scrotum revealed homogeneous or heterogeneous hypoechoic lesions and could not differentiate them from testicular cancer. Tumor markers such as alpha-fetoprotein and beta-human chorionic were all within normal limits. Routine blood tests, including hemoglobin, hematocrit, liver function tests and coagulation studies were within normal limits. Human immunodeficiency virus (HIV) serology was negative on patients. No pulmonary evidence of tuberculosis on the chest radiograph. Also Fluorescent microscopic examination of urine was negative for acid-fast bacilli.
Results: Surgical exploration was performed through an inguinal incision on all patients. After clamping the spermatic cord, scrotal contents were palpated through the incision but could not differentiate from testicular cancer. Inguinal orchiectomy was proposed and implemented with the consent of patients. And testes samples were sent to pathological examination and Lowenstein-Jensen culture. Later mycobacterium tuberculosis was grown on Lowenstein-Jensen culture from the testes samples after eight weeks on the six patients.
Conclusion: The correct diagnosis of the isolated tuberculous epididymo-orchitis is difficult in general urological clinics. Surgical procedures can be necessary for the differential diagnosis from testicular cancer.

UP.699
Simple Renal Cyst Sclerotherapy with Aethoxysklerol: A 5-year Experience of a Single Institution
Yonguc T**, Bozkurt I**, Yarimoglu S, Degirmenci T, Kozacioglu Z, Gunlusov B
Dept. of Urology, Izmir Bozyaka Training and Research Hospital, Izmir, Turkey

Introduction and Objectives: To evaluate the efficacy and safety of aethoxysklerol sclerotherapy in the treatment of simple renal cysts.
Materials and Methods: Between 2008 and 2013, 86 patients (44 men, 42 women) with 89 Bosniak type-1 simple cysts were treated by ultrasonography (US)-guided percutaneous aspiration and injection of aethoxysklerol solution. Mean age was 67.2 (range, 42-82) years. The follow-up period was between 12-76 months. The symptoms related to renal cyst were flank pain in 37 (43%), hematuria in 6 (6.9%) and a palpable mass in 4 patients (4.6%). The remaining renal cysts were found incidentally on abdominal imaging. The sites of the cysts were; left in 45 (50.5%), right in 41 (46%) and both left and right in 3 patients (3.4%). Location of the cyst upper, middle and lower were 43 (48.3%), 14 (15.7%) and 34 (38.2%) respectively. Mean cyst size was 8.3 cm (range, 5-14), and the mean volume on presclerotherapy images was 240 ml (range, 60-1370). US and/or CT scan was obtained from all patients. Puncture site was infiltrated with lidocaine; 18 G puncture needle under US guidance was used for initial cyst puncture. The first 10 ml of aspirate was sent for cytological and biochemical examination. Subsequently, all fluid was aspirated and 2 ml aethoxysklerol 1% per 100 ml of cystic fluid was administered. Patients were evaluated at 3rd month after procedure and annually afterwards. Success was defined as complete or partial when there was > 90% reduction or between 50-90% reduction in cyst size, respectively. Failure was defined < 50% reduction.
Results: The cytology examination was negative for neoplastic cells in all patients, and biochemical analysis was similar to the plasma. The mean volume of aspirated cyst fluid was 220 ml (range, 40-1150). The complete success was found in 39 cysts (43.8%), partial in 18 cysts (20.2%) and failure in 32 cysts (35.9%). Minor complications such as nausea, pain, microscopic hematuria were observed in 7 patients (8.1%). There was no major complication.
Conclusion: The aethoxysklerol sclerotherapy in the treatment of simple renal cysts effective and safe.

UP.700
Forgotten DJ Stent: A Nagging Problem
Gupta R[1], Mahajan A1, Gupta S[2]
[1]Dept. of Urology, Goverment Medical College, J&K, India; [2]ASCOMS, J&K, India

Introduction and Objectives: Ureteral stents have become integral part of urology practice. With its wide spread use by urologists and general surgeons there is always a probability of forgotten stent. This stent encrustation can be a cause of significant morbidity. The forceful removal of the encrusted stent can result into stent fragmentation, ureteral tears, and rarely, ureteral avulsion. We review our experience and algorithm of tackling such stents safely.
Methods and Material: Between Jan 2009 until Dec 2013, 35 forgotten DJ stents were tackled at our unit. Patient with forgotten stent was defined as one who did not follow-up for the stent removal within the stipulated period and presented once they were symptomatic or had urinary sepsis. Prior to the definitive management, all patients were subjected to, biochemistry, radiological investigations and a urine culture sensitivity so as to assess degree of encrustations and active infection.
Results: Average age of presentation was 39.8 ± 4.3 years. Eighty five percent of the patients were male (30/35) and average indwelling time was 11 ± 5.5 months. Stents were retrieved endourologically in 33/35 patients. Seventeen patients required only CPE, seven patients required PCNL (for proximal renal calculus), and ureteroscopy with pneumatic lithotripsy was done for six patients (stent encrustation) and three patients required cystolithotrity (distal end calculus). Two patient required nephrectomy as there renal unit had become nonfunctional.
Conclusions: DJ stent should be used judiciously as forgotten stents are a reality even today. Detailed preoperative assessment and prompt management goes a long way in reducing the morbidity of forgotten stent.

UP.701
Initial Results of Surgeon Tailored Mesh for Stress Urinary Incontinence
Bajramovic S, Junuzovic D

Clinical Centre University Sarajevo, Bosnia and Herzegovina

Introduction and Objectives: To evaluate the operative costs, surgical efficacy and adverse events associated with surgeon-tailored polypropylene mesh (STPM) in the treatment of stress urinary incontinence (SUI).
Materials and Methods: Between 2011-2013, we have done 30 midurethral slings (TOT) for stress urinary incontinence by self tailored polypropylene mesh. Concomitant surgeries were excluded. Sucess rate was measured in terms of overall urinary incontinence, which required a negative pad test, no urinary incontinence, a negative cough and Valsava stress test, no self reported symptoms, no retreatment for the condition. We have also asseses postoperative urge incontinence, voiding dysfunction, and adverse events.
Results: Mean follow-up was 18±3 months. Objective cure rate was 82.6%. The mean operative time was 45 min (range 30-55 min), mainly due to tailoring the mesh. No bladder or urethral injuries and no vascular or neurological complications were encountered.
Conclusion: STPM may represent a cost-effective alternative option for stress urinary incontinence treatment. Initial results show safe, efficacious, and economic surgical procedure for SUI.

UP.702
Use of Firefly Fluorescence Imaging Technology for Robotic Assisted Partial Cystectomy and Ureteral Reconstruction
Rodriguez A
Samaritan Medical Center, Watertown, USA

Introduction and Objectives: Firefly fluorescence imaging technology has been used during robotic assisted urological procedures, specifically for partial nephrectomies. We report on the use of this technology for robotic assisted partial cystectomy for bladder tumors and ureteral reconstructive procedures.
Materials and Methods: Firefly fluorescence imaging technology has been used since November 2012 at our institution. It has been used most commonly for robotic assisted partial nephrectomies. We have applied this technology during partial cystectomies and ureteral reconstructive procedures. During these procedures we either do a flexible cystoscopy (for a partial cystectomy) or a flexible ureteroscopy (for a ureteral reconstruction). Once the lesion is identified, we point at it endourologically, and turn-on the Firefly technology on the robotic console. This technique allows us to visualize the endoscopic light in green color, and identify the exact point were the lesion is situated. Patient demographics, peri-operative outcomes and complications were analyzed.
Results: Two patients were performed using this technique. In one case, the patient (61-year old male, BMI of 31) had a double right ureteral stricture above the iliac vessels that had been dilated and stented multiple times. A flexible ureteroscopy was used to identify the areas of stricture. Firefly technology was used to define where the resection of the ureter was going to be performed. For this case, a robotic assisted boari flap was performed. Robotic console time was 170 min, estimated blood loss was 50 cc, hospital stay was 3 days, and JP drain time was 2 days. In the second case, the patient had a bladder tumor in the dome compatible with either a bladder adenocarcinoma versus a urachal cyst remnant. A flexible cystoscopy was performed during the robotic assisted partial cystectomy plus urachal resection. Robotic console time was 80 min, estimated blood loss was 25 cc, hospital stay was 2 days, and JP drain was 2 days. Clear-cut borders of resection were identified during both procedures. At 3 months (mean time) follow-up, there were no complications.
Conclusions: Firefly fluorescence imaging technology to assist in localizing a lesion in the bladder or the ureter, proofed to be effective during both the robotic assisted partial cystectomy and the ureteral reconstruction.

UP.703
Desire for Fertility among Cancer Patients using Tyrosine Kinase Inhibitors (TKIs)
Hussein A[1,2], Lishko P[3], Katz P[4], Smith J[1,4,5]
[1]Dept. of Urology, University of California, San Francisco, USA; [2]Dept. of Urology, Cairo University, Egypt; [3]Dept. of Molecular and Cellular Biology, University of California, Berkeley, USA; [4]Philip R. Lee Institute for Health Policy Studies, San Francisco, USA; [5]Dept. of Obstetrics, Gynecology, and Reproductive Sciences, University of California, San Francisco, USA

Introduction and Objectives: The introduction of tyrosine kinase inhibitors (TKIs) has revolutionized the treatment of many malignant conditions. Little is known about the exact effects of TKIs on male fertility. While there is no sufficient evidence to support the effect of TKIs on male fertility and pregnancy outcome, the risk of infertility should be considered and the current recommendation is to use contraception while on treatment. We sought to evaluate the fertility expectations of male patients on TKIs, assess if healthcare providers counseled them about the possible effects of TKIs on their fertility, and discussed fertility preservation options prior to initiation of the treatment.
Materials and Methods: Men receiving TKIs as anticancer treatment in the University of California, San Francisco, completed an online survey. Cancer history, consultation with treating physician about the possible effects on fertility, obstacles to fertility preservation methods and satisfaction with treatment decisions were addressed.
Results: Fifteen men completed the survey. Fourteen patients had CML and 1 had RCC, mean age was 41 years. About 2/3 of men were married or in a relationship. Ten out of 16 (63%) patients expressed their desire to have ≥1 child at the time of diagnosis. Most patients (13/15, 87%) believed that TKI therapy would not affect their ability to father children. Half of the patients mentioned that they were not warned about the possible reproductive effects of TKIs on their fertility. Consultation with a fertility specialist was not offered to the majority of patients (12/15, 80%). Two patients (15%) considered fertility preservation while none of them attempted it. Only half of the patients (8/15) were satisfied with their decisions and said that they would go for the same choice if they had to do it again.
Conclusions: Patients may not be aware of the potential reproductive effects of TKIs. It is prudent to refer patients to a fertility specialist for shared decision-making, where fertility preservation options can be discussed and obstacles can be addressed.

UP.704
A Computer Based Questionnaire Assessment of Doctors Prescribing Practice of Mirabegron for the Treatment of Overactive Bladder (OAB)
Basra R**, Ridout A**, Malde S, Kelleher C
Guys & St Thomas' NHS Foundation Trust, London, UK

Introduction and Objectives: Mirabegron provides a new option for treating OAB. The only other widely used drug treatments for OAB are AM which cause variable degrees of side effects, limiting treatment efficacy. Prescribing practices of doctors are dictated by clinical guidelines, cost, reimbursement, and response to initial prescribing. The aims of this study were to investigate how physicians position the prescription of Mirabegron for real world clinical management of OAB.
Materials and Methods: A 14 item web-based survey was designed in order to determine physicians prescribing practices for OAB before and after the introduction of Mirabegron. The survey was circulated nationally and internationally to a randomly selected number of practicing clinicians within the IUGA membership.
Results: The survey had 245 visits: 113 complete (46%) and 22 partial responses (9%). The choice of treatment for OAB is determined primarily by the local hospital formulary. Safety and side effects were the least important determining factors in selecting 1st line treatment for OAB. Since the introduction of Mirabegron, 62% of clinicians would prescribe 2 AMs prior to considering treatment with Mirabegron if the 1st line AM failed due to tolerability issues. Despite the published safety data for

Mirabegron; a number of potential concerns regarding Mirabegron that would prevent its prescription were expressed. The prohibitive cost of treatment was a major concern. Twenty percent of clinicians were worried about lack of personal experience with Mirabegron and efficacy/tolerability data from clinical practice. Of the potential side effects from treatment, cardiac and hypertensive disease were the most concerning (reported by 22% of clinicians).
Conclusions: More information about the cardiovascular profile of Mirabegron would reassure clinicians about its safety in older patients who may already have cardiovascular disease or risk factors. These individuals constitute the largest population of OAB patients, and are potentially most prone to AM side effects. Increasingly, pressure to prescribe Mirabegron will increase for patients who experience tolerability issues with AM, and it is likely that both patients and physicians may lobby to influence current clinical guidelines.

UP.705
Open versus Robotic-assisted Partial Nephrectomy with DaVinci Si FullHD Robot: Perioperative Results and Complications
Grad L, Dobrota F, **Hodor T**, Crisan N, Manea C, Manescu R, Coman I
Clinical Municipal Hospital Cluj Napoca, Romania

Introduction and Objectives: The comparison of surgical results, morbidity and positive surgical margins rate for patients undergoing robotic partial nephrectomy (RPN) versus open partial nephrectomy (OPN). The recent progress in minimal invasive surgery and the development of new conservative surgical tehniques lead to the concept of renal parenchima preservation when treating stage T1-T2 renal cancer.
Materials and Methods: This is an observational between January 2009 and January 2014. All clinical, surgical, and pathological variables of patients treated with OPN or RPN for renal tumors were gathered in a prospectively maintained database. Tumor nephrometry was measured with PADUA score. Intraoperatively were noted the overall operating time, warm ischemia time, blood loss and complications. Postoperatively, we recorded the recovery time, creatinin and hemoglobin seric values and complications.
Results: A total of 71 patients were enrolled in OPN and RPN group. From the total of 71 partial nephrectomies, 50 were performed using open surgery, with retroperitoneal approach, and 21 using robotic-assisted laparoscopy, out of which 4 with retroperitoneal approach and 17 with transperitoneal approach. The mean warm ischaemia time (WIT) was shorter in the OPN group than in the RAPN group 12 (0-26) minutes vs. 16 (0-32) minutes. The estimated blood loss (EBL) was 340 (250-580) ml in the OPN group and of 290 (190-520) ml in the RAPN group. In terms of oncological results, all patients with classic approach had negative resection margins and 20 out of 21 patients with robotic surgery had negative resection margins.
Conclusion: In the present series, RPN was associated with a significant reduction of blood loss, surgical complications and postoperative bleeding, and with a shorter hospitalization. Long-term results should be evaluated for both techniques, with a close postoperative follow-up.

UP.706
"TURis-plasma Vaporization" as Hyphenated Technique in BPH Therapy
Hodor T, Grad L, Stanca D, Boc A, Prunduș P, Coman I
Clinical Municipal Hospital Cluj Napoca, Romania

Introduction and Objectives: Transurethral resection is considered the standard treatment for benign prostatic obstruction (BPO). The objective of our study was to assess the efficacy and safety of transurethral resection in saline (TURis) followed by plasma vaporization for the symptomatic bladder outlet obstructions secondary to the benign prostatic hyperplasia (HBP).
Materials and Methods: Between January 2012 and December 2013, a total of 215 transurethral resections of the prostate in saline has been performed. We recorded the age distribution of patients, hospitalization time, operating time and the necessity of blood transfusion. We also evaluated the medium-term efficiency of the treatment using telephonic interview (IPSS score and QoL) one year after the intervention.
Results: The mean age of the studied group was 67 years (47-84) and the mean operating time 75 minutes (20-150). Most of the patients were discharged after 24 (26%), respectively 36 hours (51%). The longest hospital stay was 96 hours (6.5%). The catheterization period was 7 days. During hospitalization 9 (4.2%) patients, all with HBP over 100 ml, needed blood transfusion, without other noted significant complications. The rate of late complications (urinary incontinence, urinary obstruction due to bladder neck sclerosis) was low.
Conclusions: Transurethral resection in saline (TURis) followed by plasma vaporization is a safe and feasible technique for the treatment of symptomatic bladder outlet obstruction due to the benign prostate hyperplasia (BPH), with short time hospitalization and low rates of complications. This technique performed by the hyphenation of the two procedures has good functional outcomes and fast recovery of the patient.

UP.707
Pharmacotherapy Does Not Remove the Obstruction Caused by Benign Prostatic Hyperplasia: A Randomised Study
Granfors T, Hawas B
Dept. of Urology, Vastmanland Hospital, Sweden

Introduction and Objectives: Pharmacotherapy is a widely used alternative to transurethral surgery to reduce lower urinary tract obstruction caused by benign prostatic hyperplasia.
Materials and Methods: Using Abrams-Griffiths pressure-flow diagram, we identified and randomised 36 patients with infravesical obstruction. Patients with catheter, neurogenic bladder, or prostate cancer were excluded. Seventeen patients were randomised to pharmacotherapy with alfuzosin 10 mg x 1 for prostates smaller than 40 ml and finasteride 5 mg x 1 for larger prostates. Two patients with large prostates combined both drugs. Nineteen patients were treated surgically with green light laser photovaporisation of the prostate (PVP). Before randomisation the patients were examined with transrectal ultrasound, cystometry and pressure-flow measurements, IPSS, and blood chemistry including serum PSA. All examinations including urodynamics were repeated after six months and two years.
Results: Before treatment there was no difference between the two treatment arms considering age, BMI, bladder capacity, residual volume, prostate volume, detrusor pressure at maximal flow, bladder outlet obstruction index, IPSS, and PSA. PVP was more favourable than pharmacotherapy. Six months from start we noticed no difference in residual urine volumes ($p = 0.61$), but clear differences for prostate volume ($p < 0.001$), detrusor pressure at maximal flow ($p < 0.001$), bladder outlet obstruction index ($p = 0.001$), IPSS ($p < 0.001$), and PSA ($p = 0.02$) There was no difference for bladder capacity ($p = 0.89$). At the 2-year follow-up there was no difference in residual urine volume ($p = 0.25$) or PSA ($p = 0.24$). For the other parameters PVP remained advantageous, for prostate volume ($p = 0.003$), detrusor pressure at maximal flow ($p < 0.001$), bladder outlet obstruction index ($p < 0.001$), and IPSS ($p < 0.001$). After six months on pharmacotherapy 15/17 patients (88%) were still obstructed. At two years five of the patients in this arm had underwent transurethral surgery and the rest 12/17 were urodynamically obstructed.
Conclusion: PVP removed the obstruction caused by benign prostatic hyperplasia. Patients randomised to pharmacological treatment with alfuzosin or finasteride were still obstructed both six months and two years after the start of treatment.

UP.708

Visceral Obesity Is an Independent Predictor of Better Prognosis in Patients with Advanced Renal Cell Carcinoma Undergoing Nephrectomy

Jeon H, Lee H, Choi D, Lee S, Sung H, Jeong B, Seo S, Jeon S, Lee H, Choi H
Dept. of Urology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, South Korea

Introduction and Objectives: Visceral adiposity affects tumorigenesis and cancer metastasis by producing growth factors and cytokines. However, the prognostic impact of visceral fat in advanced renal cell carcinoma (RCC) is still conflicting. The aim of this study was to determine the effect of visceral obesity at the time of surgery on prognosis of advanced RCC patients undergoing nephrectomy.
Materials and Methods: We reviewed clinicopathologic data of 2,187 patients who underwent nephrectomy for RCC at our institution. The visceral fat area (VFA) and subcutaneous fat area (SFA) were determined at the level of the umbilicus on patients' computed tomograms (CT) obtained before surgery. Patients were categorized as either viscerally obese (VFA ≥130 cm^2 in males and ≥90 cm^2 in females, n=1,280; VFA to SFA ratio (V/S) ≥0.4, n=1,875) or non-obese. Associations linking visceral obesity and cancer-specific survival (CSS) or overall survival (OS) were evaluated by Kaplan-Meier analysis, the log-rank test and Cox proportional hazard regression model.
Results: Although elevated VFA was associated with longer CSS (p=0.017) or OS (p=0.027), there was no significant difference in survival outcomes between the high and low V/S group. Low VFA was an independent predictor of cancer-specific death (p=0.005, hazard ratio = 1.654), as well as old age (p=0.009), advanced state (p<0.001), high tumor grade (p<0.001) and sarcomatoid differentiation (p<0.001). In subgroup analysis, the association between VFA-obesity and better prognosis was even more pronounced only in advanced state patients (CSS, p=0.001; OS, p<0.001). Study limitations were the retrospective design, single-center patient recruitment and limited follow-up duration.
Conclusion: High VFA was an independent predictor of better prognosis in advanced RCCs after surgery and it was more useful than V/S.

Astellas is a Global Category Leader in the field of Urology, committed to urologists – through education and research – and dedicated to the delivery of accurate, balanced medical information. We continue to focus on areas of high unmet medical need in Urology through our extensive research and development programmes.

Astellas is dedicated to improving the lives of people around the world through the introduction of innovative and reliable pharmaceutical products.

Visit Astellas at Stand #20 at the 34th Congress of the Société Internationale d'Urologie (SIU).

www.astellas.com

VSO/14/0052/EU
Date of preparation: July 2014

UROLOGY
ONCOLOGY
TRANSPLANTATION
DERMATOLOGY
ANTI-INFECTIVES
PAIN MANAGEMENT

astellas
Leading Light for Life


ELSEVIER
SIU
SOCIÉTÉ INTERNATIONALE D'UROLOGIE