JCU

Journal of Clinical Urology
2019, Vol. 12(1S) 9–89

DOI: 10.1177/2051415819846081
journals.sagepub.com/home/uro
SAGE

BAUS 2019 Abstract Book

ePoster Session 1:
Stones, Imaging and Upper Tract Disorders 1
Monday 24 June
10:00-11:30
Carron
Chairs: Richard Napier-Hemy, Sian Allen & Sotonye Tolofari

P1-1 Long-term follow-up and outcomes of percutaneous nephron-sparing surgery for suspected upper tract urothelial carcinoma

Mr Syed Ali Ehsanullah[2], Mr Piyush Sarmah[1], Mr Bhupendra Dev Sarmah[3]
[1]Queen's Hospital Burton, Burton-upon-Trent, United Kingdom, [2]Sandwell and West Birmingham Hospitals Trust, Birmingham, United Kingdom, [3]University Hospitals Birmingham, Birmingham, United Kingdom

Introduction: Upper tract urothelial carcinoma (UTUC) is uncommon, accounting for 5-10% of all urothelial carcinomas (UC), and current gold standard management consists of radical nephro-ureterectomy (RNU) leading to loss of half the patient's functioning nephrons. Percutaneous nephron-sparing surgery (PCNSS) is an alternative minimally-invasive approach in selected cases where nephron preservation is desired. The long-term outcomes of this procedure at a single centre are described.
Methods: All patients undergoing PCNSS, with the operation carried out by a single surgeon, were included. Equipment used was a standard 26Ch resectoscope through a 30Ch Amplatz sheath. Data for each patient was collected on the tumour size, location, grade and stage, and overall survival measured in years. Outcomes were compared to pre-existing literature on this particular technique.
Results: 15 patients in total underwent PCNSS, with follow-up ranging from 8-22 years (median 11.5 years). 13 patients were diagnosed with UTUC, with 1 proven to have benign disease histologically (leiomyoma). Overall survival at 5 and 10 years was 93.3% and 80% respectively, with disease-specific mortality at 10 years of 13.3% (2 patients who developed metastatic carcinoma). 33% of patients required subsequent RNU for recurrent ipsilateral UTUC. None of the patients had seeding of the percutaneous tract. These figures are comparable to published literature on this procedure.
Conclusion: PCNSS for UTUC is a feasible approach to consider in carefully selected patients who agree to intensive follow-up, even for higher grade tumours. Where recurrent UTUC occurs, further management options still exist for disease treatment.

P1-2 Genetic variants of calcium and vitamin D metabolism in renal stone disease

Dr Sarah Howles[1], Mr Akira Wiberg[1], Dr Michelle Goldsworthy[1], Dr Asha Bayliss[1], Mrs Emily Grout[1], Dr Chizu Tanikawa[2], Dr Yoichiro Kamatani[3], Dr Chikashi Terao[3], Dr Atsushi Takahashi[3], Dr Michiaki Kubo[3], Professor Koichi Matsuda[2], Professor Rajesh Thakker[1], Dr Benjamin Turney[1], Professor Dominic Furniss[1]
[1]University of Oxford, Oxford, United Kingdom, [2]University of Tokyo, Tokyo, Japan, [3]RIKEN Centre for Integrative Medical Sciences, Kanagawa, Japan

Background: Kidney stone disease (nephrolithiasis) is a major clinical and economic health burden with a multifactorial etiology and heritability of ~45-60%. To identify common genetic variants associated with nephrolithiasis we performed genome-wide association studies (GWAS) and meta-analysis in British and Japanese populations.
Methods: GWAS and trans-ethnic meta-analysis of 12,123 kidney stone cases and 416,928 controls was performed. Genotype-phenotype correlations were established in a validation cohort of kidney stone patients. Biological pathways were studied in vitro in HEK293 cells.
Results: Twenty loci associated with nephrolithiasis were identified, ten of which are novel. One such locus is associated with CYP24A1 and is predicted to affect vitamin D metabolism. Five loci, DGKD, DGKH, WDR72, GPIC1, and BCR, are predicted to influence calcium-sensing receptor (CaSR) signalling. The CYP24A1-associated locus correlated with serum calcium concentration and number of

kidney stone episodes in a validation cohort of nephrolithiasis patients. In addition, the DGKD-associated locus correlated with urinary calcium excretion in the validation cohort. Moreover, DGKD knockdown was shown to impair CaSR-signal transduction in vitro, an effect that was rectified by the calcimimetic cinacalcet, thereby supporting the role of DGKD in CaSR signaling.

Conclusions: Our study identified ten novel loci associated with kidney stone disease; six loci are predicted to influence calcium-sensing receptor and vitamin D metabolism pathways. These findings indicate that genotyping may help to inform risk of incident kidney stone disease prior to vitamin D supplementation and facilitate precision-medicine approaches, by targeting CaSR signaling or vitamin D activation pathways in patients with recurrent kidney stones.

P1-3 Cystine stones are often hard … are Hounsfield Units correspondingly high?

Miss Hannah Warren[1], Dr Kerushan Thomas[1], Dr Daniel Poon[1], Dr Rohit Srinivasan[1], Dr Giles Rottenberg[1], Mr Matthew Bultitude[1], Miss Kay Thomas[1]
[1]Guy's And St. Thomas's NHS Foundation Trust, London, United Kingdom

Cystine stones have traditionally been considered hard and difficult to treat. Hounsfield units (HU) are often used in other stone types to judge 'hardness' and treatments based on that finding.

A prospective database of cystinuria patients from a single centre was analysed. Demographic, genetic and follow up data was collected. Available CT imaging prior to stone intervention was assessed by two independent radiologists and HU measured by drawing a circular region of interest at the centre of the stone at its largest diameter. Inter-rater reliability was assessed using Cronbach's alpha reliability coefficient. 169 adult cystinuric patients (55% male) were reviewed; 112 had CT scans available; median follow up 31 months (IQR 10–62). Median age 41 years (range 18–79). Inter-rater reliability of measurements was good (Cronbach's alpha =0.88). Mean HU 618 (range 118-1453). 93% of values had HU$<$800 with only 2 patients having HU$>$1200. Genetic analysis available for 102/112(91%) patients with calculi on CT imaging demonstrated 70(69%) SLC3A1 mutation and 32(31%) SLC7A9 mutation (20 homozygous, 12 heterozygous). There was no difference in mean HU between SLC3A1 and SLC7A9 (p=0.77) or between SLC7A9 homo and heterozygous mutations (p=0.98). There was no difference in HU from one independent stone episode to another (p=0.97), and no association between mean HU and total laser energy required to break up stone at ureteroscopy.

Due to the variability of HU and the relatively low values, they are not useful in judging the relative hardness of cystine stones and should not be used to base treatment decisions.

P1-4 Which Microbiological Specimen Best Determines Treatment for Patients with an Infected Obstructed Kidney

Miss Catherine Miller[1], Dr Vyshnavi Sathish[1], Miss Elizabeth Bright[1]
[1]Royal Cornwall Hospital, Truro, United Kingdom

Aim: To determine the most appropriate microbiological specimen, urine culture (UC), blood culture (BC) or nephrostomy culture (NC), for guiding treatment in patients with an infected obstructed kidney receiving emergency nephrostomy placement.

Methods: Retrospective case-note review of patients undergoing nephrostomy insertion for an infected obstructive kidney, identifying microbiological specimen analysis, antibiotic therapy and time to resolution of sepsis.

Results: 44 consecutive patients (12 males, 32 females; mean age 66 years, range 18-93) underwent emergency nephrostomy insertion over 12 months. UC, BC and NC were taken in 75%, 72.7% and 65.9% of patients, respectively. The most commonly identified organism was E Coli. However, significant numbers of specimens (UC 77.4%, BC 42.3%, NC 53.6%) did not identify any causative organism. In only half of the patients were all three culture samples analysed, with BC revealing the greatest positivity for bacterial growth. Initial antibiotic prescription varied and was appropriate in only 13 patients. A gentamicin/amoxicillin combination was subsequently found to be an appropriate regimen in more than half of the group. Resolution of sepsis took an average of 10.4 days and was proportional to the number of cultures analysed (0 cultures 3.5 days vs 3 cultures 14.4 days). Resolution could not be attributed to solely responding to BC results but was quicker when adopting gentamicin/amoxicillin combination regimen (7.9 vs 13.6 days).

Discussion: No single culture specimen was universal in providing a causative organism. However, the wider the variety of samples sent for microbiological analysis, the higher the incidence of identifying an isolate. Preliminary gentamicin/amoxicillin combination regimen is appropriate whilst awaiting culture analysis.

P1-5 Do CT KUBs really expose patients to more radiation than plain abdominal radiographs?

Mr Bob Yang[1], Dr Noori Suhail[1], Mr Johan Marais[1], Mr Mohammed El-Saghir[1], Mr Alister Campbell[1], Ms Melissa Davies[1], Mr James Brewin[1]
[1]Salisbury District Hospital, Salisbury, United Kingdom

Introduction: Urolithiasis patients often require repeated and frequent urinary tract imaging, leading to high radiation exposure. CT Kidney-Ureter-Bladder (CT-KUB) is the gold standard in urolithiasis detection, however, is commonly

thought to harbour significant radiation load. Urologists have therefore utilised abdominal radiographs of the kidney-ureter-bladder (XR-KUB) as an alternative, though with significantly lower sensitivity and specificity.
Historical guidelines state the Effective-Dose of XR-KUBs at 0.8mSv. However, no UK data exists comparing the contemporary radiation Effective-Dose between XR-KUBs and CT-KUBs. We compared the radiation Effective-Dose (mSv) in patients who has recently had both an XR-KUB and CT-KUB.
Methods: 53 patients were retrospectively identified who underwent both a XR-KUB and a CT-KUB in 2018. Effective-Dose was measured by converting the recorded "Dose Area/Length Product" via the International Commission on Radiological Protection report 103 formulation.
Results: The average Effective-Dose for XR-KUBs was 5.10mSv [Range: 0.8 - 42.4]. The average Effective-Dose for CT-KUBs was 5.31mSv [Range: 1.4 – 30.5].
18/53 (34%) of patients underwent XR-KUBs with higher radiation Effective-Dose levels than their following CT-KUB. Patients with higher BMIs received greater doses for both XR-KUB and CT-KUB.
Conclusion: The Effective-Dose of XR-KUB was on average 5-fold higher than historically referenced. Furthermore, for 1-in-3 patients, the radiation Effective-Dose of CT-KUBs was less than that of the preceding XR-KUB.
Given the higher than expected radiation dose associated with XR-KUBs and its' limited sensitivity/specificity, other imaging modality such as Ultrasound-KUB and CT-KUB should be considered.

P1-6 Variability and quality of outcome reporting in clinical trials of interventions for renal calculi

Ms Helen Cui[1], Mr Benjamin Turney[1]
[1]Oxford Stone Group, University of Oxford, Oxford, United Kingdom

Purpose: To systematically review the quality and consistency of outcome reporting in clinical trials of interventions for renal calculi.
Methods: We searched the MEDLINE and Cochrane Library database for all full-text articles in English of randomised controlled trials (RCT) comparing two, or more, of either: shockwave lithotripsy, retrograde intrarenal surgery or percutaneous nephrolithotomy, for the treatment of renal calculi, from 2000. Demographic and outcomes data were extracted. Quality of outcome reporting was assessed based on both the clarity of the definition, and completeness of the results, of the primary outcome.
Results: 82 primary and secondary outcomes were analysed from 13 RCTs (1144 participants) that met the inclusion criteria. All studies which specified a primary outcome had complete reporting in the results that would allow inclusion in a meta-analysis. 4 studies (30%) had no clearly defined primary outcome measure. 12/13 studies used stone free rate (SFR) as the primary outcome, but every study had a different definition of SFR. 9 studies allowed residual fragments ranging from 2mm to 5mm, but with no description of a method of fragment quantification. Only 4 studies included quality of life as a secondary outcome measure.
Conclusion: Although descriptive statistics are reported well, there is variability in the selection and definition of study endpoints. Interpretation and comparison of the evidence for renal stone treatment relies on good quality outcome reporting with a clear definition of the primary and secondary outcomes. A core outcome set for trials in renal stone interventions would benefit future studies.

P1- 7 Minimising length of hospital stay after supine percutaneous nephrolithotomy

Mr Ali Tasleem[1], Mr Chandran Tanabalan[1], Mr Danny Vincent[1], Mr Andrew Ballaro[1]
[1]King George Hospital, Essex, United Kingdom

Introduction & objectives: Length of hospital stay (LOS) after percutaneous nephrolithotomy (PCNL) is a key quality indicator and is influenced by the method of post-operative renal drainage. Percutaneous drainage tubes may delay post-operative discharge and increase morbidity, however a completely tubeless approach may also lead to complications and ureteric drainage with no nephrostomy may be optimal. We present a series of supine PCNL with ureteric drainage only.
Materials & methods: We recorded peri-operative data of all 'maxi' PCNLS performed in our hospital between January 2015 and July 2018 by a single team making the PCNL tract under fluoroscopy guidance. The Boston Scientific Lingeman dilation set with Nephromax balloon dilator and 30Fr Amplatz sheath was used in all cases. No percutaneous nephrostomy drainage was used, and either an overnight ureteric catheter or ureteric stent, with a bladder catheter, were placed depending on the complexity of procedure. Bi-manual pressure was applied to the tract for 3-5 minutes, and Marcaine with adrenaline injected. One superficial skin suture was placed.
Results: 107 supine PCNLs were performed. The mean patient age was 62 years (27-89) with a mean stone size of 23.2mm (10-66mm). Stone complexity was 25% Guys 1, 37% Guys 2, 21% Guys 3 and 17% Guys 4. 89 patients had a ureteric stent and 18 had a ureteric catheter. All stents were removed within a mean 35 days post-operatively. The stone free rate (0-2mm) was 71% (76/107) with 13 patients requiring a follow-up procedure to clear clinically significant stones. The rate of complications directly attributable to renal puncture or drainage was 14% (15/107); with 8 cases of sepsis, 4/18 (22%) patients requiring retrograde stenting after ureteric catheter removal, and 3 patients requiring a 2 unit blood transfusion. The median length of stay was 1 day (mean 2.2 days, range 1-21) with 64% (68/107) going home the day after surgery.
Conclusion: Post PCNL nephrostomy tubes are generally used to aid blood drainage and to maintain renal access

should there be a requirement for a second-look procedure. Adversely, these drains stent open the renal wound delaying closure and haemostasis, can cause pain if large bore and may necessitate post-operative imaging or instrumentation. Although not a comparative study, this series suggests that avoiding percutaneous renal drainage after supine PCNL can be safe, is associated with acceptable complication rates and routinely facilitates discharge on the first post-operative day. The re-stenting rate associated with ureteric catheter use suggests a blanket approach of ureteric stenting might be preferable. Stenting does require a second hospital visit to remove the stent however this is funded and facilitates early review and in this series stent symptoms were well tolerated. The median LOS for PCNL in the U.K is 3 days [1]; we propose this could be significantly and safely reduced by more widespread use of this technique.

[1] British Association of Urologists PCNL Database. https://www.baus.org.uk/patients/surgical_outcomes/pcnl/default.aspx

P1-8 Prospective Outcomes of Tubeless Mini-PCNL for Renal Stones > 20mm

Mr Sanjay Khadgi[1], Mr Maitrey Darrad[2], Mr Abdullatif Al-Terki[3], Professor Ahmed El-Nahas[3]
[1]Vayodha Hospital, Kathmandu, Nepal, [2]University Hospitals Birmingham, Birmingham, United Kingdom, [3]Al-Amiri Hospital, Kuwait City, Kuwait

Objectives: To evaluate the outcomes of tubeless mini-PCNL for patients with large renal stones greater than 20mm and develop a decision tree model to predict stone-free rates.
Method: In this prospective case series, we identified all patients who underwent tubeless mini-PCNL (16-20F) with non-contrast CT confirmed renal stones greater than 20mm in 2 reference centres between July 2015 – November 2018. Primary outcomes evaluated were stone free rates, surgical complications, length of stay, and need for blood transfusion.
Results: We identified 225 renal units from 218 adult patients. The average age was 42.9 years and 75% of patients were male. The mean stone size was 30.2mm, of which 63 patients had staghorn calculi. The overall stone free rate was 87.6% with complication rates of 8.4% (Clavien-Dindo I-II of 7.6%, III of 0.9%, IV-V of 0%). None of the patients required blood transfusion and the average length of postoperative hospital stay was 3 days. Cumulative stone size was the best predictor of the stone-free rate ($p < 0.001$). Other factors associated with the stone-free rates was the presence of staghorn calculi ($p=0.02$), multicalyceal stone locations ($p=0.007$), multiple stones ($p=0.014$) and Guy's stone score ($p=0.002$). Using these variables, a decision tree model of stone-free rates was developed with predictive accuracy (AUC 0.92).
Conclusions: Mini-PCNL is an effective treatment option for large renal stones with comparable stone free rates and lower complication rates compared to conventional PCNL. Stone-free rates can be predicted using preclinical and radiological data enabling appropriate case selection and patient counselling.

P1-9 Are the outcomes, or the patients, different between ureteroscopy procedures performed by consultants compared with those performed by trainees? An analysis of data from the British Association of Urological Surgeons Ureteroscopy database

Miss Samantha Conroy[1], Mr Marcus Cumberbatch[1], Mr Ibrahim Jubber[1], Mr Jonathan Manley[2], Mr Robert C Calvert[3], Mr Jacob Patterson[2]
[1]Academic Unit of Urology, University of Sheffield, Sheffield, United Kingdom, [2]Sheffield Teaching Hospitals, Sheffield, United Kingdom, [3]Royal Liverpool and Broadgreen University Hospitals, Liverpool, United Kingdom

Introduction: The British Association of Urological Surgeons encourages national evaluation of procedural outcomes, aiming to improve surgical standards and transparency for patients. This national audit compares outcomes of ureteroscopic stone surgery between consultants and trainees.
Methods: 4,891 ureteroscopies across 85 sites were evaluated (April 2012-July 2016). 154 were excluded from analysis due to missing/erroneous data. Stone size, number and site were assessed, in addition to stone clearance, length of stay, complications and mortality. Univariate and multivariate analysis were performed using SPSS Version 25 (with correction for co-variables of age, gender, stone size, stone site and number of stones on multivariate analysis).
Results: Analysis of outcomes from 4737 procedures (male-3177, female-1560) was performed. In 74% of ureteroscopies, a consultant was named primary surgeon. There was no significant difference in patient age, but consultants performed more female ureteroscopies ($p=0.043$), managed larger stones (8mm v 7mm, $p<0001$), more calyceal stones ($p<0.001$) and greater number of stones per ureteroscopy ($p<0.001$).
On univariate analysis, registrars had better surgical and radiological stone clearance ($p=0.002$ and $p<0.001$, respectively), and fewer unusual complications ($p=0.02$); these differences were not significant on multivariate analysis. No significant differences in length of stay, ureteric injuries, post-operative infections or mortality were identified.
Conclusions: The comparable outcomes between consultants and registrars provides confidence in the safety of training in contemporary UK practice. Consultants, however, appear to manage more complex cases (larger, more proximal and multiple stones). This study provides invaluable data on ureteroscopic outcomes to inform pre-operative patient counselling and case selection.

P1-10 Extracorporeal Shock wave Lithotripsy (ESWL) for Ureteric Stones: The New Gold Standard

Dr Mudit Matanhelia[1], Dr Su-Min Lee[1], Dr Mihai Dobra[2], Mr Anthony Timoney[1], Mr Joe Philip[1]
[1]Bristol Urological Institute, Bristol, United Kingdom, [2]Fundeni Clinical Institute, Bucharest, Romania

Introduction: Extracorporeal Shockwave Lithotripsy (ESWL) has good stone free rates and minimal complications. Conflicting results have been reported for the use of ESWL for radio-opaque ureteric stones. We review results for ureteric stone ESWL in one of the largest ESWL units in the United Kingdom.
Methods: The prospective database was interrogated for patients undergoing ESWL for ureteric stones. All patients were treated with fluoroscopic and/or ultrasound guidance, in a high-volume specialist stone unit with a fixed site lithotripter and dedicated staff. Outcomes included stone free rate (SFR), number of treatments, and need for adjunct procedures.
Results: Over a three-year period ending 2017, 399 patients underwent ESWL for ureteric stones. Mean age was 52 years (18 – 87 years), and male to female ratio was 3.5:1. Mean stone size was 7.3mm (3 – 20mm). Stones were located in the upper (48%), mid (7%), or lower ureter (45%). Overall SFR was 71%. Stones $<$10mm (n=328) had a SFR of 77%, compared to 41% for larger stones. Patients with ureteric stents had a lower SFR of 31% compared to 78% in stent-free patients. 60% (n=155) of patients required only one session to be stone free, with 95% stone free after two sessions.
Conclusion: ESWL offers a 78% SFR in patients with radio-opaque treatment naive ureteric stones. 60% of patients required only one session. Stones larger than 10mm had a 41% success rate. This study validates the call for larger centres to offer ureteric stone ESWL as the gold standard treatment choice.

P1-11 Effects of Silicone Hydrocoated Double Loop Ureteral Stent (DJ) on Symptoms, Quality of Life and encrustation in Patients undergoing F-URS for Kidney Stone: Final Results of a Prospective Randomized Multicentre Clinical Study

Mr Oliver Wiseman[1], Dr Julien Letendre[2], Dr Jonathan Cloutier[3], Dr Michel Daudon[4], Dr Francois Kleinclauss[5], Dr Steeve Doizi[6], Prof Olivier Traxer[6]
[1]Cambridge University Hospitals Nhs Trust, Cambridge, United Kingdom, [2]Hôpital Maisonneuve-Rosemont Montreal, Montreal, Canada, [3]CHU de Quebec, Quebec, Canada, [4]Tenon Hospital, Paris, France, [5]CHRU, Besancon, France, [6]Sorbonne University GRC urolithiasis #20-Hospital Tenon, Paris, France

Introduction: Silicone was one of the first materials to be used for DJ ureteral stents. In this ethically approved multicenter prospective study, we compared the hydrocoated silicone stent (Coloplast Imajin® hydro) to PercuflexTM Plus stent (Boston Scientific) in terms of patient comfort and encrustation after flexible ureteroscopy (FURS) for stone disease.
Methods: 141 patients treated for unilateral renal stones from 5 to 25 mm by F-URS were randomized, under a prospective, comparative, single blind, parallel groups protocol across 4 centres in France, UK and Canada. The primary endpoint was USSQ Body Pain Index recorded before stent removal at D20.
Ureteral stent encrustation and biofilm formation at removal were evaluated using a validated scoring scale and comparison was performed using ANOVA.
Results: Table 1 presents the intent-to-treat analysis results. No difference was noticed between the 2 groups regarding baseline characteristics. D20 USSQ Body Pain Index showed a statistically significant difference in favour of the Imajin hydro® silicone stents, as did USSQ for urinary symptoms at each time point during indwell duration.
119 stents were available after removal for analysis. There was significantly more mineral encrustation and biofilm (Table 2) on PercuflexTM Plus compared to silicone.
Conclusion: The primary results of this large sample prospective comparative randomized study comparing the Coloplast Imajin® hydro silicone stents to the Boston Scientific PercuflexTM Plus stent shows that silicone stents are associated with significantly less patient discomfort and encrustation and biofilm formation. We would recommend their use in patients who require stenting for stone disease.

P1-12 Introduction of a nurse led stent removal service using the single use ISIRIS in a tertiary referral stone unit and the effect on patient waiting times

Mrs Jane Collie[1], Dr Syed Shah[1], Mr Samih Al-Hayek[1], Mr Jordan Durrant[1], Mr Kasra Saeb-Parsy[1], Mr Oliver Wiseman[1]
[1]Cambridge University Hospitals NHS Trust, Addenbrookes Hospital, Cambridge, England, Cambridge, United Kingdom

Introduction: JJ stenting represents one of the most significant causes for patient discomfort and dissatisfaction following ureteroscopy. The 'Isiris α' (Coloplast) is a single use stent removal system with integrated grasper. We examine the feasibility and impact on waiting times of a nurse led stent removal service using this system.
Patients and Method: A specialist stone nurse undertook training in flexible cystoscopy approved by The British Association of Urological Surgeons (BAUS).
Prospective data collection, undertaken from April to October 2018, showed that 94 stent removals were

Table 1: Baseline data and USSQ results

Prospective Comparative Randomized Multicentre Clinical Study of Imajin® hydro silicone stent versus Percuflex plus®: results of principal criterion									
Mean +/- SD or %	Male %	Age years	BMI	Stone size mm	Pre-op pain VAS	Day 7 urinary symptoms	Day 20 urinary symptoms	D20 Body Pain Index Gp A: n=48 Gp B: n=56	D20 normalized Body Pain Index*
Group A Silicone Imajin hydro N = 68	55.9 %	53.8	27.03	10.4±4.1	1.2 ±1.9	28.0 ±6.4	26.4 ± 7.7	18.65 ± 11.42	19.21 ± 11.86
Group B Percuflex plus N = 73	63 %	51.3	25.92	10.5±4.5	1.1 ± 1.9	30.6 ±6.6	31.8 ±8.1	25.12 ± 14.19	26.02 ± 15.09
P	0.389	0.308	0.208	0.970	0.717	0.045	<0.001	0.015	0.013
* Normalized Body Pain Index takes into account the different scale levels between men (5 pain area) and women (4 pain area) in the USSQ questionnaire									

Table 2: Encrustation of Imajin® hydro silicone stent versus Percuflex plus® at removal.

Mineral encrustation of Double-J stents at explantation	Ext renal tip	Ext renal angle	Ext vesical tip	Ext vesical angle	Global Mineral encrustation (external & internal all sites)
Silicone Imajin hydro N=56	0.68±0.15	0.87±0.13	0.71±0.17	1.09±0.17	0.78 ± 0.11
Percuflex plus N=63	1.19±0.14	1.38±0.12	1.68±0.16	1.69±0.16	1.22 ± 0.10
P	0.0025	0.012	0.00006	0.0025	0.0048
Biofilm level on Double-J stents at explantation	Extern renal tip	Ext renal angle	Ext vesical tip	Ext vesical angle	Global Biofilm (external & internal all sites)
Silicone Imajin hydro N=56	0.91 ±0.12	1.23 ±0.12	0.66 ±0.12	1.02 ±0.11	0.93±0.09
Percuflex plus N=63	1.22 ±0.12	1.49 ±0.11	1.43 ±0.11	1.71 ±0.11	1.24 ± 0.8
P	0.02	0.05	0.000001	0.00003	0.0021

booked to the nurse led service (Gp A). In comparison data between July and December 2016 showed 54 stent removals completed by a doctor in the endoscopy department (Gp B). The delays in stent removal compared to the "ideal" stent removal date (plus or minus 3 days) were compared between the two pathways.

Results: 87 stent removals were undertaken in Gp A. 74 of 87 patients in Gp A had their stent removed on time, compared to 16 of 54 patients in Gp B ($p<0.0001$, Fischer's exact test).

Only 3% patients in Gp A had a delay of stent removal more than 21 days, but in Gp B this was 22%.

Conclusion: This study has shown that it is possible to introduce a nurse led stent removal service using the ISIRIS system, and this has led to a reduction in delays of stent removal. This is likely to translate into significant quality of life improvements for patients.

P1-13 A National Reference Level for Intraoperative Radiation. Results from FLASH, a multi-centre UK study

Mr Nick Simson[1], Mr Thomas Stonier[2], Miss Narin Suleyman[3], Dr Miriam Salib[4], Mr Julian Peacock[5], Mr Martin Connor[6], Miss Jane Hendry[7], Dr Oliver Jones[8], Dr James Schuster-Bruce[8], Mr Oliver Bottrell[6], Dr Louise English[5], Dr Heba Hamami[9], Dr Catherine Lovegrove[10], Dr Joseph Bagley[11], Dr Abdurahman Bareh[12], Dr Dominic Jaikaransingh[12], Dr Nusrat Mohamed[12], Dr Uchenna Ukwu[13], Dr Nimlan Shanmugathas[1], Mr Deepak Batura[9], Mr Charles Horn[14], Miss Jean McDonald[6], Mr Konstantinos Charitapoulos[10], Mr Paimaun Zakikhani[5], Dr Alison Graham[4], Mr Sanjeev Taneja[3], Mr Henry Sells[14], Mr Marco Bolgeri[12], Mr Oliver Wiseman[13], Mr John Bycroft[8], Mr Omar Aboumarzouk[7]

[1]Guy's Hospital, London, United Kingdom, [2]King's College Hospital, London, United Kingdom, [3]Luton & Dunstable Hospital, Luton, United Kingdom, [4]Charing Cross Hospital, London, United Kingdom, [5]Worthing Hospital, United Kingdom, [6]North Middlesex Hospital, United Kingdom, [7]Queen Elizabeth University Hospital, Glasgow, United Kingdom, [8]Lister Hospital, Stevenage, United Kingdom, [9]Northwick Park Hospital, United Kingdom, [10]West Middlesex Hospital, United Kingdom, [11]Bedford Hospital, United Kingdom, [12]St George's Hospital, United Kingdom, [13]Cambridge University Hospitals, United Kingdom, [14]Derriford Hospital, United Kingdom

Objectives: To define reference levels for intraoperative radiation during urological procedures, including stent procedures, ureteroscopy and percutaneous nephrolithotomy.
Methods: 3651 procedures were identified across twelve UK hospitals over a 1-year period. Radiation exposure was defined in terms of fluoroscopy time (FT) and dose-area-product (DAP). The 75th percentiles of median values for each hospital were used to define reference levels for stent insertion/replacement, ureteroscopy and PCNL. Variations between individual hospitals, between low and high-volume PCNL centres, and grade of lead surgeon were analysed as secondary outcomes.
Results: Reference levels: Ureteric stent insertion/replacement (2.3 Gy.cm2/49 seconds); Ureteroscopy (2.8 Gy.cm2/57 seconds); PCNL (24.1 Gycm2/431 seconds).
Significant variation in median DAP and fluoroscopy time was identified between individual centres for all procedures ($p<0.001$).
For PCNL, there was a statistically significant difference between DAP for low volume (<50 cases/annum) and high-volume centres (>50 cases/annum), median DAP 15.0 Gy.cm2 vs. 4.2 Gy.cm2 ($p<0.001$).
For stent procedures, the median DAP and FT differed significantly between grade of lead surgeon: Consultant (DAP 2.17 Gy.cm2 and FT 41s) vs. Registrar (DAP 1.38 Gy.cm2 and FT 26s, $p<0.001$).
Conclusion: This multi-centre study is the largest of its kind. It provides the first national reference level to guide fluoroscopy use in urological procedures, thereby adding a quantitative and objective value to complement the principles of keeping radiation exposure "as low as reasonably achievable". This snapshot of real time data demonstrates significant variation around the country, as well as between low and high-volume centres for PCNL, and grade of lead surgeon for stent procedures.

P1-14 Management of acute ureteric colic; a single unit experience and comparison to current BAUS guidelines

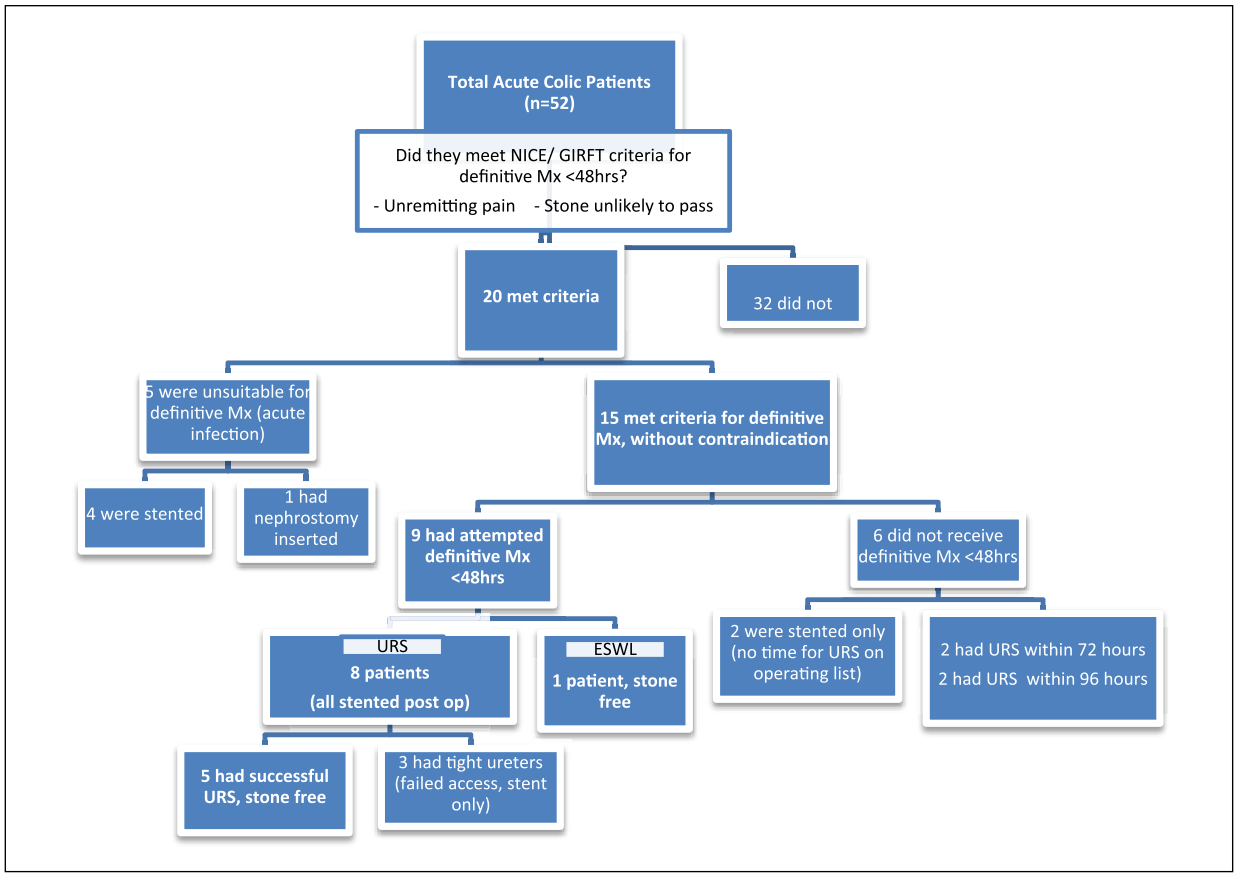
Mr John Fitzpatrick[1], Mr Sean Marshall-Kellie[1], Mr Alistair Rogers[1], Mr Rajan Veeratterapillay[1]
[1]Freeman Hospital, Newcastle-upon-Tyne, United Kingdom

Introduction: There is considerable pressure on units to deliver treatment of patients with acute ureteric colic in a timely fashion in accordance with current BAUS guidelines. We aim to audit our practice in line with these guidelines and look to improve our current acute stone service.
Patients and Methods: A prospective analysis of 219 patients admitted during a 6-month period (January to June 2018) with acute ureteric colic. Data was collected from electronic records.
Results: On average, 37 patients per month were admitted with acute ureteric colic. The average age was 53 years (18-94yr) and median stone size was 5mm (2-25mm). Stone locations were 108 distal-, 86 proximal-, 24 mid-ureteric and one renal pelvis. Patients with sepsis (17.3%) were managed with ureteric stent insertion. For non-septic patients, 76 (42%) underwent primary treatment (43 ureteroscopy, 28 ESWL), 74 (41%) conservative management and 31 (17%) ureteric stent/nephrostomy insertion. The median time to primary ureteroscopy was ⩽24 hours; primary ESWL was ⩽72 hours (target <48 hours). Median time from stent insertion to definitive ureteroscopy was 6.6 weeks (target <4 weeks). For patients managed conservatively, median time to outpatient review was 5.4 weeks (target <4 weeks). Where a ureteric stent was inserted, 89% were removed within two weeks (100% stent-on-strings, 75% cystoscopic removal).
Conclusions: Although our patients are receiving appropriate treatment, delivering this within the proposed timeframes is challenging. We have now looked at ways of optimising our acute stone service to achieve the targets recommended by BAUS.

P1-15 Are NICE and GIRFT recommendations for the management of acute ureteric colic achievable? A snap shot comparison of a tertiary referral versus district general hospital

Mr Hamid Abboudi[1], Miss Narin Suleyman[2], Mr Kelvin Adasonla[1], Mr Giuseppe Celentano[1], Mr Vimoshan Arumuham[1,2], Miss Siân Allen[1], Mr Daron Smith[1]
[1]Institute of Urology, University College Hospitals London, London, United Kingdom, [2]West Hertfordshire Hospitals NHS Trust, Watford, United Kingdom

Introduction: NICE and GIRFT have recommended improved management of ureteric colic through definitive treatment within 48 hours in patients with uncontrollable pain or stones deemed unlikely to pass. We aimed to determine how feasible this is to achieve.
Methods: Data was prospectively recorded for all acute colic presentations between 1st November–31st December 2018 in a tertiary referral unit and a DGH and evaluated against NICE 2019 and GIRFT recommendations.
Results: Overall, 20 of the 52 patients (38%) with acute colic at the tertiary centre were potentially eligible for 48-hour treatment. 25% (5/20) of these were septic and therefore drained (4 stented, 1 nephrostomy) leaving 75%



(15/20) suitable for active treatment of whom 60% (9/15) received definitive treatment within 48 hours (8 URS, 1 ESWL). Complete stone clearance was achieved in 66% (1 ESWL and 5/8URS cases); the other 3 URS cases were young men with failed access due to tight ureters. Of the 6 patients not treated within 48 hours, 4 underwent primary URS the following Monday. Lack of theatre time meant 2 patients had a temporising stent. By contrast 11 DGH patients were eligible for 48-hour management: 100% received an emergency stent and were still waiting for definitive management at the date of abstract submission.
Conclusion: Treatment within 48 hours is ambitious but provides a good outcome. The weekend effect is problematic, but 72-hour management is more realistic and seems acceptable. Dedicated theatre time and expertise (including over weekends) will be needed to meet the NICE and GIRFT recommendations.

ePoster Session 2: Bladder Cancer Diagnosis and Treatment Monday 24 June 12:00-13:00 Carron Chairs: Mark Johnson, Angela Smith & Meghana Kulkarni

P2-1 IDENTIFY: The Investigation and DEtection of urological Neoplasia in paTIents reFerred with suspected urinarY tract cancer: A multicentre analysis

Mr Sinan Khadhouri[1], Mr Kevin M Gallagher[2], Mr Kenneth R Mackenzie[3], Mr Taimur T Shah[4], Dr Chuanyu Gao[5], Dr Sacha Moore[6], Ms Eleanor Zimmermann[7], Mr Eric Edison[8], Mr Matthew Jefferies[9], Mr Arjun Nambiar[3], Mr John S McGrath[10], Mr Veeru Kasivisvananthan[11], The IDENTIFY Study Group
[1]Aberdeen Royal Infirmary, Aberdeen, United Kingdom, [2]Western General Hospital, Edinburgh, United Kingdom, [3]Freeman Hospital, Newcastle, United Kingdom, [4]Charing Cross Hospital, London, United Kingdom, [5]Peterborough City Hospital, Peterborough, United Kingdom, [6]Wrexham Maelor Hospital, Wrexham, United Kingdom, [7]Weston General Hospital, Weston-super-Mare, United Kingdom, [8]North Middlesex Hospital, London, United Kingdom, [9]Morriston Hospital, Swansea, United Kingdom, [10]University of Exeter Medical School, Exeter, United Kingdom, [11]West Hertfordshire NHS Trust, London, United Kingdom

Aims: To determine contemporary urinary tract cancer rates and diagnostic test performance in patients referred to secondary care with suspected urothelial cancer.
Materials & Methods: IDENTIFY is the largest ever prospective, international study of patients referred to

Table 1. Test characteristics of US and CT in diagnosis of BC and UTUC for tests that were deemed adequately conducted.

	Imaging modality	Sensitivity	Specificity	Positive Predictive Value	Negative Predictive Value
Bladder cancer	US	77.8% (95% CI 74.4%-81.0%)	93.5% (95% CI 92.7%-94.3%)	67.8% (95% CI 64.9%-70.5%)	96.0% (95% CI 95.5%-96.6%)
	Contrast CT	80.5% (95% CI 77.3%-83.4%)	92.3% (95% CI 91.3%-93.3%)	71.5% (95% CI 68.7%-74.1%)	95.2% (95% CI 94.4%-95.9%)
UTUC	US	42.5% (95% CI 27.0%-59.1%)	97.7% (95% CI 97.3%-98.1%)	12.7% (95% CI 12.4%-27.7%)	99.5% (95% CI 99.4%-99.7%)
	CT Urogram	95.7% (95% CI 88.0%-99.1%)	94.4% (95% CI 93.5%-95.2%)	26.8% (95% CI 24.0%-29.8%)	99.9% (95% CI 99.7%-99.97%)

secondary care with haematuria. Extensive data on patient demographics, presenting features and diagnostic test results were recorded.

Results: 11,130 patient records were collected from 111 hospitals in 28 countries (Dec 2017 - Dec 2018). The prevalence of bladder cancer [BC] overall was 14.2%; 18.1% in VH, 3.7% in NVH. Upper tract urothelial cancer [UTUC] prevalence was 1% overall, renal cell carcinoma [RCC] 0.9% and prostate cancer 1.2%.

Variables significantly associated with BC included type of haematuria, age, smoking history, anticoagulation, storage urinary tract symptoms and having had >1 episode of VH (25.5%) vs. only 1 (17.9%). UTUC was significantly associated with type of haematuria, age, smoking and anticoagulation. The rate of BC found in those with culture proven urinary tract infection [UTIs] was 7.0%, which was significantly lower than in those without UTI (19.7%). The diagnostic performance of ultrasound [US] and Computed Tomography [CT] is given in Table 1.

Conclusions: IDENTIFY provides contemporary cancer detection rates in a global population alongside extensive predictive data and diagnostic test performance for each cancer type. The detailed data will allow complex interactions between predictive variables to be appreciated and develop a personalised approach to haematuria investigations. This should improve shared decision-making and optimise cancer detection whilst minimising investigative burden.

P2-2 Development and validation of a haematuria cancer risk score to identify patients at risk of harbouring cancer

Mr Wei Shen Tan[1,2], Dr Amar Ahmad[3], Dr Andrew Feber[1], Dr Hugh Mostafid[4], Dr Jo Cresswell[5], Dr Christian Fankhauser[6], Dr Sharon Waisbrod[6], Dr Thomas Hermanns[6], Prof Peter Sasieni[7], Prof John Kelly[1]

[1]University College London, London, UK, [2]Imperial College Healthcare, London, UK, [3]Cancer Research UK, London, UK, [4]Royal Surrey County Hospital, Guildford, UK, [5]James Cook University Hospital, Middlesbrough, UK, [6]University Hospital Zurich, Zurich, Switzerland, [7]King's College London, London, UK

Background: A lack of consensus exists among national guidelines regarding who should be investigated for haematuria. Current guidelines utilise type of haematuria and age specific thresholds to guide referral for investigation of haematuria. We reported the development and external validation of the haematuria cancer risk score (HCRS) to improve patient selection for investigation of haematuria.

Methods: Development cohort comprise of 3,539 prospectively recruited patients recruited at 40 UK hospitals (DETECT 1; ClinicalTrials.gov: NCT02676180) and validation cohort comprise of 656 Swiss patients. All patients were aged >18 years and referred to hospital for the evaluation of visible (VH) and non-visible haematuria (NVH). Sensitivity and specificity of the HCRS in the validation cohort was derived from a cut-off identified from the discovery cohort.

Results: Patient age, gender, type of haematuria and smoking history were used to develop the HCRS. HCRS validation achieves good discrimination (AUC 0.835; 95% CI: 0.789–0.880) and calibration (calibration slope=1.215) with no significant overfitting (p=0.151). The HCRS detected 11.4% (n=8) more cancers which would be missed by UK National Institute for Health and Clinical Excellence guidelines. The American Urological Association guidelines would identify all cancers with a specificity of 12.6% compared to 30.5% achieved by the HCRS. All patients with upper tract cancers would have been identified.

Conclusion: The HCRS offers good discriminatory accuracy which is superior to existing guidelines. The simplicity of the model would facilitate adoption and improve patient and physician decision making.

P2-3 Common somatic mutations in urothelial bladder cancer: frequency across grades & stages, prognostic value and detection in urinary cell pellet and cell-free DNA

Dr Douglas Ward[1], Ms Naheema Gordon[1], Ms Rebecca Boucher[1], Ms Sarah Pirrie[1], Dr Laura Baxter[2], Dr Sascha Ott[2], Dr Andrew Beggs[1], Prof Michael Griffiths[1], Prof Nicholas James[1], Prof Maurice Zeegers[1], Prof KK Cheng[1], Dr Richard Bryan[1]

[1]University of Birmingham, Birmingham, United Kingdom, [2]University of Warwick, Coventry, United Kingdom

Background: Urothelial bladder cancer (UBC) associated genomic alterations can be detected in urinary DNA and may represent clinically-useful biomarkers.
Objective: To develop a panel of somatic mutations (SMs) present in the majority of UBCs and to define their frequency across grades and stages, their prognostic utility and their ability to identify UBC from urinary cell pellet (cp) DNA and urinary cell-free (cf) DNA.
Design, Setting & Participants: A panel of SMs was validated by targeted deep-sequencing of tumour DNA from 956 UBC patients. Amplicon and capture-based targeted sequencing measured mutant allele frequencies (MAFs) of SMs in 314 urine cpDNAs and 153 urine cfDNAs.
Outcome Measurements & Statistical Analysis: The association of SMs with grade, stage, and clinical outcomes was investigated by univariate and multivariate Cox models. Concordance between SMs detected in tumour tissue and cpDNA and cfDNA was assessed.
Results & Limitations: The panel comprised SMs in 23 genes, with 92.3-100% of UBCs of all grades and stages harbouring ⩾1 SM. RAS mutations were associated with better overall survival (p=0.04). MAFs in urinary cfDNA and cpDNA were highly correlated. Using a capture-based approach, >94% of tumour SMs were detected in both cp and cfDNA; cpDNA yields were 10-fold higher than for cfDNA.
Conclusions: SMs can be reliably detected in both urinary cpDNA and cfDNA and could be used to non-invasively diagnose UBCs whilst also providing additional prognostic information. Capture-based approaches offer increased sensitivity for both cpDNA and cfDNA. cfDNA may be useful to corroborate cpDNA results or if cpDNA yields are insufficient.

P2-4 The use of selenium and vitamin E supplementation to prevent recurrence of non-muscle-invasive bladder cancer: results of the SELENIB trial

Mr Richard Bryan[1], Dr Sarah Pirrie[1], Dr Ben Abbotts[1], Mr Vinnie During[2], Dr Carolyn Langford[3], Dr Margaret Grant[1], Ms Deborah Bird[1], Dr Adam Devall[1], Dr Gareth Bicknell[1], Mr DMA Wallace[4], Professor Nicholas James[1,4], Professor Lucinda Billingham[1], Professor Maurice Zeegers[5], Professor KK Cheng[1]

[1]University of Birmingham, Birmingham, United Kingdom, [2]Royal Wolverhampton NHS Trust, Wolverhampton, United Kingdom, [3]Royal Orthopaedic Hospital NHS Foundation Trust, Birmingham, United Kingdom, [4]University Hospitals Birmingham NHS Foundation Trust, Birmingham, United Kingdom, [5]NUTRIM School for Nutrition and Translational Research in Metabolism & CAPHRI Care and Public Health Research Institute, Maastricht, The Netherlands

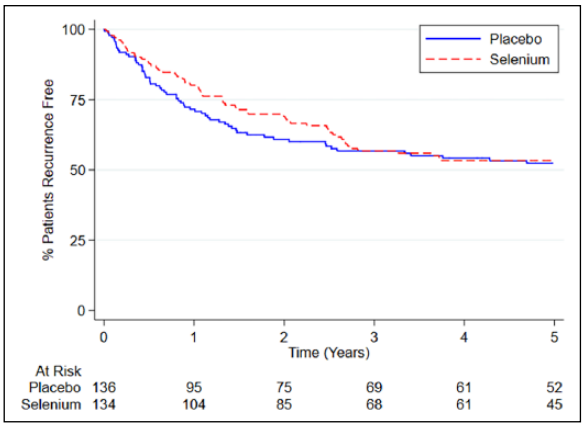


Figure 1. Kaplan-Meier survival curves showing recurrence-free intervals for selenium versus no selenium.

Background: The SELENIB trial aimed to determine whether selenium or vitamin E could prevent recurrence in non-muscle-invasive bladder cancer (NMIBC) patients.
Methods: A double-blind randomized placebo-controlled 2x2 factorial trial aimed to recruit 515 newly-diagnosed NMIBC patients between 17/07/2007 and 10/10/2011 (REC approval 06/MRE04/65). Eligibility included a new diagnosis of NMIBC; randomisation within 12months of initial transurethral resection was required. Four possible interventions were oral selenium (200mcg/day high-selenium yeast) and vitamin E placebo, vitamin E (200IU/day d-alpha-tocopherol) and selenium placebo, selenium and vitamin E, or placebo and placebo for 5 years. Patients were otherwise treated according to contemporaneous guidelines. Primary outcome was recurrence-free interval. Secondary outcomes included progression-free interval and overall survival. A stratified log rank test was performed for comparing each supplement to placebo while stratifying for the other; hazard ratios were obtained using Cox's regression model.
Results: We recruited 270 patients, with median follow-up of 5.4yrs and median duration of treatment of 1.5yrs. For selenium versus no selenium, no statistically significant difference in recurrence-free interval was observed, HR 0.92 (95% CI 0.65, 1.32, p=0.655). For vitamin E versus no vitamin E, vitamin E was associated with a statistically significant increase in risk of recurrence, HR 1.46 (95% CI

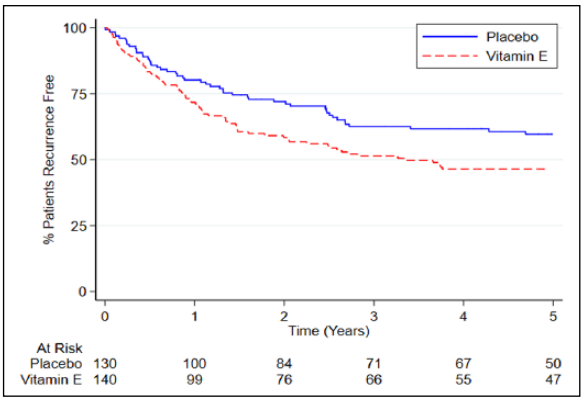


Figure 2. Kaplan-Meier survival curves showing recurrence-free intervals for vitamin E versus no vitamin E.

1.02, 2.09, p=0.039). No significant differences were observed for progression-free interval or overall survival with either supplement.

Conclusion: Selenium supplementation did not influence recurrence, progression or survival. Vitamin E supplementation was associated with an increased risk of recurrence in NMIBC patients but did not influence progression or overall survival.

P2-5 Novel Methylation Biomarkers Predict Tumour Recurrence/Progression at Initial Diagnosis of High-risk Non-Muscle Invasive Bladder Cancer

Mark Kitchen[1], Miss Helen Thursby[1,2], Mr Richard Bryan[3], Professor Richard Emes[4], Mr Christopher Luscombe[1], Professor KK Cheng[3], Professor Maurice Zeegers[5,6,7], Professor Nicholas James[3,8], Mr Lyndon Gommersall[1,2], Professor Anthony Fryer[1,2]

[1]University Hospitals Of North Midlands NHS Trust, Stoke-on-trent, United Kingdom, [2]Institute for Science and Technology in Medicine, Keele University, Stoke On Trent, United Kingdom, [3]Institute of Cancer and Genomic Sciences, University of Birmingham, Birmingham, United Kingdom, [4]Advanced Data Analysis Centre, University of Nottingham, Nottingham, United Kingdom, [5]Department of Complex Genetics, Maastricht University Medical Centre, Maastricht, The Netherlands, [6]NUTRIM School of Nutrition and Translational Research in Metabolism, Maastricht University Medical Centre, Maastricht, The Netherlands, [7]CAPHRI School for Public Health and Primary Care, Maastricht University Medical Centre, The Netherlands, [8]Cancer Research Centre, University of Warwick, Coventry, United Kingdom

Introduction: High-risk non-muscle invasive bladder cancer (HR-NMIBC) is a clinically unpredictable disease. Despite risk estimation tools, many patients are under-treated with intra-vesical therapies alone, whereas others may be over-treated with early radical surgery.

DNA methylation is reported as predictive of tumour/patient outcomes in numerous solid organ and haematological malignancies; however, there are few reports in HR-NMIBC and none using genome-wide array assessment. We therefore sought to identify novel DNA methylation markers of HR-NMIBC that predict tumour behaviour at initial diagnosis to help guide patient management.

Patients/methods: 21 primary initial diagnosis HR-NMIBC tumours (from the Birmingham BCPP cohort) were analysed by Illumina HumanMethylation450 BeadChip arrays, and subsequently bisulphite Pyrosequencing™. Seven had not recurred at one year after resection and 14 had recurred and/or progressed, despite intra-vesical BCG. A further independent cohort of 32 HR-NMIBC tumours (17 no recurrence and 15 recurrence and/or progression despite BCG) were also assessed by bisulphite Pyrosequencing™.

Results: Array analyses identified 206 CpG loci that segregated non-recurrent HR-NMIBC tumours from clinically more aggressive recurrence/progression tumours. Pyrosequencing™ validation across the 53 tumours showed hypermethylation of CpG cg11850659 and hypomethylation of CpG cg01149192 in combination predicted HR-NMIBC recurrence and/or progression within one year of diagnosis with 83% sensitivity, 79% specificity, and 83% positive and 79% negative predictive values.

Conclusions: This is the first genome-wide DNA methylation analysis of a unique HR-NMIBC tumour cohort encompassing known one-year clinical outcomes. Our analyses identified potential novel epigenetic markers that could help guide individual patient management in this clinically unpredictable disease.

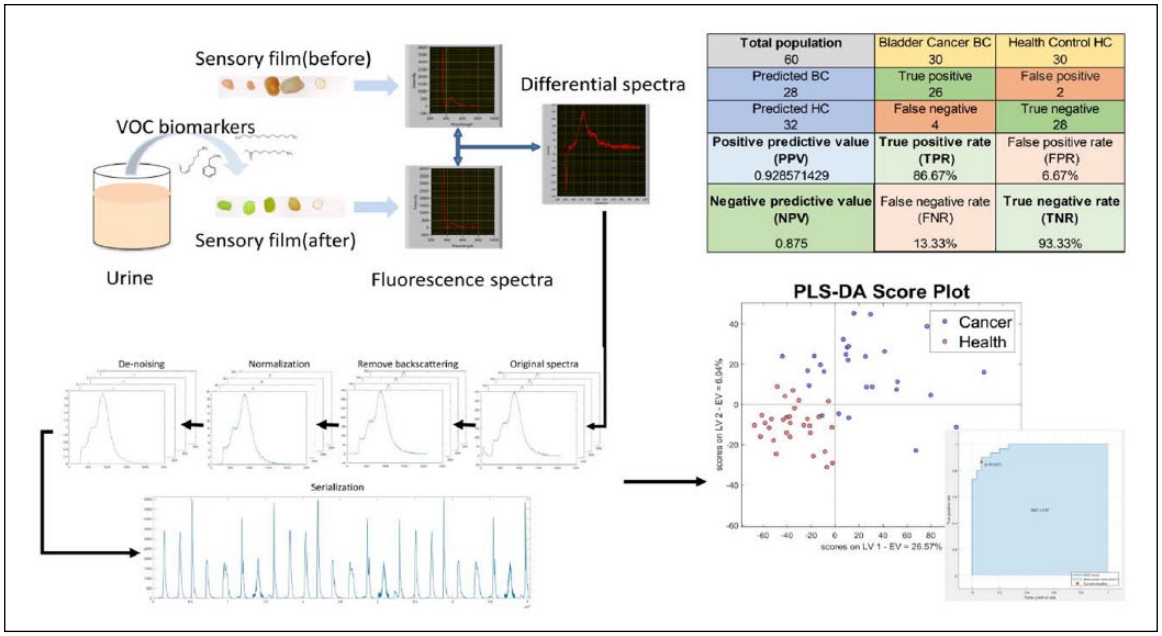
P2-6 Fluorescence sensory arrays for the detection of urinary bladder cancer related volatile organic compounds (VOCs): A prospective study

Mr Simian Zhu[1], Professor Ghulam Nabi[1]

[1]Division of Imaging Science and Technology, School of Medicine, University of Dundee, Dundee, United Kingdom

Introduction and objectives: The chemical signatures of volatile organic compounds (VOCs) in cancers has a huge potential for the development of point-of-care (POC) diagnostics. This study describes development of novel diagnostic system based on optical sensor technology and subsequent use in a prospective study in patients with urinary bladder cancer.

Methods: A novel in-house system based on optical sensor technology was developed. This was subsequently tested in 30 newly diagnosed bladder cancer patients and 30 age and gender matched controls. The study received ethical approval from East of Scotland Research Ethics Service (REC: 17/ES/0003). Urine samples from study participants were tested with a 24 elements fluorescence sensory array and the responds of the sensory array to the urine vapour were recorded. A Partial Least Squares-discriminant analysis



Total population 60	Bladder Cancer BC 30	Health Control HC 30
Predicted BC 28	True positive 26	False positive 2
Predicted HC 32	False negative 4	True negative 28
Positive predictive value (PPV) 0.928571429	**True positive rate (TPR)** 86.67%	False positive rate (FPR) 6.67%
Negative predictive value (NPV) 0.875	False negative rate (FNR) 13.33%	**True negative rate (TNR)** 93.33%

(PLS-DA) prediction model was employed based on the sensory array's responds.

Results: The PLS-DA model successfully identified 54 of 60 urine samples, achieved 86.67% sensitivity and 93.33% specificity. The prediction model also shows ability in classification of high-grade and low-grade cancer group.

Conclusions: A novel diagnostic system based on urinary VOCs fluorescence sensory array detection was developed and successfully implemented in a prospective study with high sensitivity and specificity in the detection of urinary bladder cancer.

P2-7 The prognostic value of the neutrophil-to-lymphocyte ratio in patients with muscle-invasive bladder cancer treated with neoadjuvant chemotherapy and radical cystectomy

Mr Alexander Hampson[1], Mr Nikhil Vasdev[1,18], Dr Anna L Black[2], Dr Homayoun Homayoun Zargar[2,3], Dr Kamran Zargar-Shoshtari[4,5], Dr Adrian S Fairey[6,7], Dr Laura S Mertens[8,9], Dr Colin P Dinney[10], Dr Maria C Mir[10,11], Dr Laura-Maria Krabbe[12,13], Dr Michael S Cookson[14], Dr Niels-Erik Jacobsen[7], Mr Nilay Gandhi[15], Dr Joshua Griffin[16], Dr Jeffrey S Montgomery[17], Dr Evan Y Yu[19], Dr Evanguelos Xylinas[20,21], Dr Nicholas J Campain[22], Dr Wassim Kassouf[23], Dr Marc A Dall'Era[24], Dr Jo-An Seah[25], Dr Cesar E Ercole[10], Dr Simon Horenblas[8], Mr Jonathan S McGrath[22], Mr Jonathan Aining[22,26], Dr Shahrokh F Shariat[20,27], Dr Jonathan L Wright[28], Dr Todd M Morgan[17], Mr Andrew C Thorpe[18], Dr Jeff M Holzbeierlein[16], Dr Trinity J Bivalacqua[15], Dr Scott North[29], Dr Daniel Barocos[30], Dr Yari Lotan[12], Dr Pertros Grivas[19,31], Dr Srikala S Sridhar[25], Dr Peter C Black[2]

[1]Department Of Urology, Stevenage, United Kingdom, [2]Department of Urologic Sciences, University of British Columbia, Vancouver, Canada, [3]Department of Urology, Western Health, Melbourne, Australia, [4]Department of Genitourinary Oncology, H Lee Moffitt Cancer Center and Research Institute, Tampa, USA, [5]Department of Urology, University of Auckland, Auckland, New Zealand, [6]USC/Norris Comprehensive Cancer Center, Institute of Urology, University of Southern California, USA, [7]Department of Urology, University of Alberta, Edmonton, Canada, [8]Department of Urology, The Netherlands Cancer Institute - Antoni van Leeuwenhoek Hospital, Amsterdam, Netherlands, [9]Department of Urology, MD Anderson Cancer Center, Houston, USA, [10]Glickman Urological and Kidney Institute, Cleveland Clinic, Cleveland, USA, [11]Department of Urology, Fundacion Instituto Valenciano de Oncologia, Spain, [12]Department of Urology, University of Texas Southwestern Medical Center, Dallas, USA, [13]Department of Urology, University of Münster, Germany, [14]Department of Urology, University of Oklahoma College of Medicine, Oklahoma City, USA, [15]Department of Urology, The James Buchanan Brady Urological Institute, The Johns Hopkins School of Medicine, Baltimore, MD, USA, Baltimore, USA, [16]Department of Urology, University of Kansas Medical Center, Kansas City, USA, [17]Department of Urology, University of Michigan Health System, Ann Arbor, USA, [18]Department of Urology, Freeman Hospital, Newcastle upon Tyne, UK, [19]Department of Medicine, Division of Oncology, University of Washington School of Medicine and Fred Hutchinson Cancer Research Center, Seattle, WA, USA, Seattle, USA, [20]Department of Urology, Weill Cornell Medical College, Presbyterian Hospital, New York, USA, [21]Department of Urology, Cochin Hospital, France, [22]Department of Surgery, Exeter Surgical Health Services Research Unit, UK,

[23]Department of Surgery (Division of Urology), McGill University Health Center, Canada, [24]Department of Urology, University of California at Davis, Davis Medical Center, Sacromento, USA, [25]Princess Margaret Hospital, Canada, [26]Bristol Urological Institute, North Bristol NHS Trust, UK, [27]Department of Urology, Medical University of Vienna, Vienna General Hospital, Australia, [28]Department of Urology, University of Washington, Seattle, WA, USA, Seattle, USA, [29]Cross Cancer Institute, Edmonton, Canada, [30]Department of Urologic Surgery, Vanderbilt University Medical Center, Nashville, TN, USA, Nashville, USA, [31]Department of Hematology and Medical Oncology, Taussig Cancer Institute, Cleveland Clinic, USA, [32]Department of Urology, Stanford University School of Medicine, Stanford, USA

Introduction: The neutrophil-to-lymphocyte ratio (NLR) is an attractive biomarker because it is derived from routine bloodwork and is available at no additional cost. The prognostic value of NLR in patients receiving neoadjuvant chemotherapy(NAC) before radical cystectomy is not yet established

Method: A retrospective analysis was performed on patients with MIBC who received NAC prior to radical cystectomy (RC) between 2000 and 2013 at one of 19 across Europe and North America. Patients were split into a low($\leqslant$3) and high($>$3) NLR group. Demographic and clinical parameters were compared between the groups using Student's t test, chi-squared or Fisher's exact test. Putative risk factors for disease-specific and overall survival were analysed.

Results: Complete data was available for analysis from 340 patients (199 with NLR $\leqslant$3 and 141 with NLR $>$3). Age was higher in the NLR$>$3 group (64.5$\pm$9.2 vs 61.5$\pm$ 9.3 p=0.003) while more NLR$\leqslant$3 patients had lymphovascular invasion present at the time of transurethral bladder tumor resection (60.3% vs 48.2% p=0.03). Other demographic and pre-operative characteristics did not differ significantly between groups. More patients in the NLR$>$3 group had residual MIBC after NAC than the NLR $\leqslant$ 3 group (70.8% vs 58.3%, p=0.049). In logistic regression for predictors of response, NLR was the only significant risk factor (OR: 0.36, p=0.003). NLR was also a significant risk factor for both disease-specific and overall survival (HR:2.4 p=0.006 and HR:1.8, p=0.02).

Conclusion: NLR $>$3 is associated with lower response rate to NAC as well as shorter disease-specific and overall survival. This suggests that NLR can be a simple tool that can aid in MIBC risk stratification in clinical practice upon further validation

P2-8 Oncological outcomes of BCG unresponsive non-muscle invasive bladder cancer patients treated with chemohyperthermia: A multicentre European retrospective analysis

Mr W S Tan[1,2], Dr K Hendricksen[3], Mr Dan Wilby[4], Dr C Nezh[5], Dr J Diaz[6], Dr W Vilmar[7], Dr A Plata[8], Dr A Sousa[9], Dr JM Morena[10], Dr JL Pontones[11], Dr F Guerrero[12], Dr I Kalchev[13], Dr E Frank[14], Dr JL Boormans[15]

[1]Imperial College Healthcare, London, United Kingdom, [2]University College London, London, United Kingdom, [3]Netherlands Cancer Institute, Amsterdam, Netherlands, [4]Queen Alexandra Hospital, Portsmouth, United Kingdom, [5]Santa Barbara Hospital, Gladbeck, United Kingdom, [6]Hospital Universitario Torrejón, Madrid, United Kingdom, [7]Private practice, Nuremberg, Germany, [8]Hospital Universitario Canarias, Tenerife, Spain, [9]Hospital Monforte, Lugo, Spain, [10]Hospital Universitario Infanta Sofia, Madrid, Spain, [11]Hospital Universitario La Fe, València, Spain, [12]Hospital Universitario 12 Octubre, Madrid, Spain, [13]Lazer Med Center, Sofia, Bulgaria, [14]Uniklinik RWTH, Aachen, Germany, [15]Erasmus MC, Rotterdam, Netherlands

Introduction: We report oncological outcomes of patients with BCG unresponsive disease treated with conductive chemohyperthermia (CHT) in a large multicentre European patient cohort.

Methods: CHT was delivered using the Combat BRS system comprised of MMC delivered at 43°C over 60 minutes. BCG-unresponsive NMIBC was defined as papillary disease $\pm$ carcinoma in situ (CIS) $<$12 months of last BCG instillation, or recurrent high-grade papillary disease $<$6 months of last BCG instillation, or stage T1 disease at first 3-month cystoscopy following induction BCG. Primary endpoint was the 12-month recurrence-free survival (RFS) and the progression-free survival (PFS).

Results: A total of 87 patients from 14 European institutions with a median age of 73.3 years (64.0-79.1) were included. Twenty-three patients (26.4%) had CIS only disease, 52 patients (59.8%) with papillary only disease and 12 patients (13.8%) with concurrent CIS and papillary disease. Of the 64 patients with papillary disease, 35 patients (54.7%) had Ta and 29 patients (45.3%) T1 NMIBC. Sixty-six patients (75.9%) had high-risk disease. With a median follow-up of 15 (IQR: 8-29) months, 44 patients developed disease recurrence. RFS at 12 months was 55% and at 24 months was 48%. PFS at 24 months was 95%. In patients with CIS disease, 6-month complete response rate was 57%.

Conclusions: BCG-unresponsive NMIBC patients who are treated with CHT delivered using the Combat BRS system had a 24-month DFS of 48% and PFS of 95%. CHT may be an option in NMIBC patients who are unresponsive to BCG.

P2-9 12-month results of CALIBER: A phase II randomised feasibility trial of chemoablation with MMC versus surgical management in low risk (LR) non-muscle invasive bladder cancer (NMIBC)

Mr Nicholas Campain[1], Dr Nuria Porta[2], Miss Joanne Cresswell[3], Mr TLR Griffiths[4], Professor JD Kelly[5], Mr Allen Knight[6], Professor JWF Catto[7], Miss Kim Davenport[8], Dr Andrew Feber[5], Professor Margaret Knowles[9], Mr John McGrath[1], Mr Peter Cooke[10], Mr Shikohe Masood[11], Mr Steven Penegar[2], Miss Rebecca Lewis[2], Professor Emma Hall[2], Mr AH Mostafid[12]

[1]Royal Devon and Exeter NHS Foundation Trust, Exeter, United Kingdom, [2]Institute of Cancer Research, London, United Kingdom, [3]James Cook University Hospital, Middlesbrough, United Kingdom, [4]University Hospitals of Leicester NHS Trust, Leicester, United Kingdom, [5]University College London, London, United Kingdom, [6]Patient Representative, Hampshire, United Kingdom, [7]University of Sheffield, Sheffield, United Kingdom, [8]Gloucestershire Hospitals NHS Foundation Trust, Cheltenham, United Kingdom, [9]St James's University Hospital, Leeds, United Kingdom, [10]The Royal Wolverhampton Hospitals NHS Trust, Wolverhampton, United Kingdom, [11]Medway NHS Trust, Gillingham, United Kingdom, [12]Royal Surrey County Hospital, Guildford, United Kingdom

Introduction: Mitomycin C (MMC) chemotherapy has a well-defined safety profile and is used to treat intermediate and high risk NMIBC. CALIBER aimed to demonstrate that intravesical MMC (chemoablation) had sufficient activity to warrant further investigation as an alternative to surgery for recurrent low risk (LR) NMIBC.

Materials & methods: CALIBER has a Simon two-stage design, incorporating a surgical control group to test feasibility of randomisation. Recurrent LR NMIBC patients were randomised 2:1 to chemoablation (4x 40mg weekly MMC) vs. surgery (standard of care). Primary endpoint is complete response (CR) to chemoablation at 3 months post-treatment, aiming to exclude CR rate $<$45% (Stage 1). Secondary endpoints include time to subsequent recurrence, toxicity and patient reported quality of life.

Results: 82 participants (54 chemoablation, 28 surgery) were recruited (28/01/2015-04/09/2017). Median follow-up was 24 months (IQR 15-29). Stage 1 CR rate criterion was not met: 3-month CR rate: 37.0% (95% CI: 24.3-51.3, chemoablation) and 80.8% (95% CI: 60.6-93.4, surgery). The 12-month proportion free of subsequent recurrence was 82.9% (95% CI: 69.7-90.7, chemoablation) and 75.4% (95% CI: 53.2-88.2, surgery) (p=0.09). Patients with CR to chemoablation at 3 months had fewer subsequent recurrences than surgery patients without CR at 3 months.

Conclusions: Chemoablation in LR NMIBC is safe but did not meet pre-specified activity levels. At 12-months follow-up, a reduction in subsequent recurrence rates was observed in the chemoablation arm. Results suggest a significant heterogeneity within the LR NMIBC population impacting outcomes and may be of therapeutic value requiring further investigation.

P2-10 Clinical outcomes in NMIBC following 3 years of Scotland's Bladder Cancer Quality Performance Indicators (QPI) programme: a multicentre experience

Mr Paramananthan Mariappan[1,2], Dr Luisa Padovani[1], Ms Eilidh Clark[2], Mr Imran Ahmad[3], Mr Jaimin Bhatt[3], Mr Matthew Trail[4], Mr Sami Hamid[4], Mr Ghulam Mustafa Nandwani[4], Mr Graham Hollins[5], Mr Benjamin Thomas[6], Mr Ian DC Mitchell[7], Mr David Hendry[3], for members of The Bladder Cancer QPI group

[1]Department Of Urology, Western General Hospital, Edinburgh, United Kingdom, [2]University of Edinburgh, Edinburgh, United Kingdom, [3]Department of Urology, Queen Elizabeth University Hospital, Glasgow, United Kingdom, [4]Department of Urology, Ninewells Hospital, Dundee, United Kingdom, [5]Department of Urology, University Hospital Ayr, Ayr, United Kingdom, [6]Department of Urology, Borders General Hospital, Melrose, United Kingdom, [7]Department of Urology, Victoria Hospital Kirkcaldy, Kirkcaldy, United Kingdom

Introduction: Cancer outcomes, particularly recurrence and progression in NMIBC are determined by the quality of the initial surgical intervention. To support a culture of continuous quality improvement and address in-equalities, Scotland introduced QPIs – 11 were developed for Bladder Cancer and enforced since April 2014. As part of a series of studies on clinical outcomes and prognosis in bladder cancer, this analysis aimed to evaluate, within the Scottish QPI cohort: (1) recurrence at first follow up cystoscopy (RR-FFC); (2) residual cancer (R2-6w) and (3) under-staging (T2-6w) at early re-TURBT in high risk NMIBC.

Materials & Methods: For benchmarking against the nationally mandated QPIs, data on all new bladder cancers in Scotland were collected prospectively in individual hospitals with annual regional evaluation. Data fields included tumour demographics (size, number, grade, stage, presence or absence of Detrusor Muscle). Follow up data was obtained by clinical teams.

Results: In all, 4246 new bladder cancer patients were included in this QPI cohort between April 2014 and March 2017 – a single dose of post-TURBT Mitomycin C was used in 66.8% patients. Detrusor muscle was sampled in 75% of initial resections and the usage of a bladder diagram during TURBT increased by 50% over the 3 years. Preliminary results from available follow up data revealed that compliance with NMIBC-specific QPIs was associated with a lower RR-FFC and R2-6w, with an overall risk of T2-6w being low.

Conclusion: Early recurrence and residual disease following initial TURBT appear low in this contemporary Scottish QPI-benchmarked cohort.

ePoster Session 3: Female Urology and Bladder Dysfunction 1 Monday 24 June 15:30-16:30 Alsh Chairs: Victoria Lavin,Ruth Doherty & Rachel Barratt

P3-1 A comparison of free flow configuration and video-urodynamic findings in women with Lower urinary tract symptoms: Is configuration predictive of obstruction?

Dr Bogdan Toia[1], Mr Richard Axell[1], Ms Habiba Yasmin[1], Miss Mahreen Pakzad[1], Mr Rizwan Hamid[1], Miss Tamsin Greenwell[1], Mr Jeremy Ockrim[1]
[1]University College London Hospitals NHS Foundation Trust (UCLH), London, United Kingdom

Introduction: Clinicians rely on uroflowmetry configuration and voiding parameters to evaluate the need for further investigations of the lower urinary tract. We aim to establish the correlation between free flow configuration and video-urodynamic findings in women with lower urinary tract symptoms

Methods: A retrospective review of consecutive women with LUTS who performed a free flow study immediately before undergoing video-urodynamic investigations over a 28-month period. Free flow configuration and video-urodynamic parameters were analysed. Free flow was defined in 5 categories (bell shaped, prolonged, irregular (variable but continuous flow), interrupted or plateau. Women who voided less than 150ml on free flow were excluded from the analysis

Results: A total of 250 women with LUTS with a mean age 48 years (range 18 – 83) were included. Urodynamic diagnoses are detailed in Table 1.

Bell shaped tracings excluded obstruction in 89%. Prolonged free flows diagnosed obstruction in 62% and hypocontractility in 8%. Irregular and interrupted free flows were associated with urodynamic obstruction in 37% and 39% respectively and hypocontractility in 25% and 29%. A plateau flow was indicative of urodynamic obstruction in all 3 cases

Conclusion: A free flow is suggestive of urodynamic diagnosis. Women without a prolonged void and bell-shaped trace had normal voiding urodynamics in 76% and could be managed without invasive investigation in the majority. Patients with irregular and interrupted flows demonstrate a spectrum of urodynamic diagnose with a third having obstruction and a third hyponcontactility. Plateau flows are universally associated with urethral obstruction

P3-2 Impact of 6F dual lumen urethral channel catheter on flow rate during video-urodynamic investigations

Ms Habiba Yasmin[1], Dr Bogdan Toia[1], Mr Richard Axell[1], Miss Mahreen Pakzad, Mr Rizwan Hamid[1], Mr Jeremy Ockrim[1], Miss Tamsin Greenwell[1]
[1]University College London Hospitals NHS Foundation Trust (UCLH), London, United Kingdom

Background: The thinnest catheter compliant with guidelines for good urodynamic practices is the 6F dual

Drainage of ectopic ureter (number of patients)	Presenting symptoms	Diagnostic modality	VCMG findings	Treatment
Bladder neck (4)	-Lifelong SUI (4)	-Cystoscopy(2) -MRI(2)	-SUI(3) -Small capacity poor compliance and SUI(1)	- Reimplantation and bladder neck reconstruction(1) - Nephroureterectomy and bladder neck reconstruction(1) - VOSURP Colposuspension(1) - Excision of ectopic ureter remnant(1)
Vagina (2)	-Lifelong SUI(1) -Lifelong insensate leakage (1)	-MRI (1) Simultaneous - MRI and CT review(1)	-Obstructed void (1) -Detrusor hypocontractility and SUI(1)	-Heminephrectomy(1) - Reimplantation in bladder and bladder neck reconstruction(1)
Lateral (1) or posterior (1) to urethral meatus with bladder neck dysfunction	-Mixed UI (1) Lifelong daytime incontinence(1)	-EAU(1) -Transrectal ultrasound(1)	-DO and SUI (1) DO (1)	- Rectus fascia sling,excision of ectopic ureter and bladder neck reconstruction (1) - Excision of ectopic ureter, reconstruction of bladder and reconstruction of urethra with martius fat pad interposition(1)
Urethra (1)	-Lifelong Mixed - UI(1)	-MRI(1)	-DO and SUI(1)	- Heminephrectomy (1)
Seminal vesicle with stone(1)	-Storage LUTS(1)	-MRI(1)	-early onset DO, obstructed void	- Heminephrectomy and excision of seminal vesicle(1)

Video-urodynamic outcome	Mean free flow Qmax (SD)	Mean catheterised Qmax (SD)	Number of patients (p value)	Mean free flow Qmax (SD)	Mean catheterised Qmax (SD)	Number of patients (p value)
	Women			Men		
Normal pressure, normal flow void (N)	28.4ml/s ±11.8	20.8ml/s ±8.1	112 p <0.001	22.7ml/s ±8.7	16.2ml/s ±6.2	50 p <0.001
Bladder outlet obstruction (BOO)	16.4ml/s ±8.3	9.8ml/s ±4.4	63 p <0.001	16ml/s ±8.5	8.4ml/s ±3.8	54 p <0.001
Detrusor underactivity (DU)	21.1ml/s ±9.5	14.8ml/s ±7.8	40 p <0.001	19.4ml/s ±8.8	14.6ml/s ±9.2	27 p <0.001
Impaired detrusor contraction with associated obstruction	12.2ml/s ±4.1	9.5ml/s ±4/2	6 P=0.364	10.7ml/s ±1.7	9.3 ml/s ±0.6	3 p=0.401
p value (One-way ANOVA)	<0.001	<0.001		0.001	<0.001	

SD = standard deviation; Qmax=maximum flow rate

lumen. We have assessed the effect on flow rate of a 6Ch urodynamic catheter.

Patients and methods: A prospectively collected database of video-urodynamic (VUDS) tests performed with a 6Ch dual lumen urethral catheter in a tertiary centre between 2016-2018 was screened for adult patients who voided at least 150ml on free flow immediately before their VUDS.

Patients who voided off detrusor overactivity, had non-diagnostic VUDS or incomplete data were excluded.

Results: 413 patients met the inclusion criteria. 39 (9.4%) were excluded as they did not have a representative void during their VUDS due to inhibition (36) or catheter related pain (3). A further 19 (4.6%) were excluded, as they were unable to void with the catheter in situ.

The remaining 355 patients (221 women and 134 men, mean age 52± 15y had a significantly higher mean maximum flow rate (Qmax) on their free flow Qmax= 21.7±10.9 ml/s compared to a Qmax= 14.9±8.3 ml/s with the catheter in situ ($p<0.001$). The 65 (18.3%) patients that voided sitting during VUDS also had reduced Qmax (17.4±9ml/s) compared to free flow (22.4±9ml/s). Statistically significant differences were noted in Qmax before and after catheterisation in 3 of the 4 patient groups in both women and men as detailed in Table 1.

Conclusion: The 6F catheter significantly influences urinary flow and might lead to inability to void in 5%. Free flow remains an essential component of urodynamic investigations.

P3-3 Establishing the benefit of video-urodynamics after non-diagnostic cystometrograms

Dr Bogdan Toia[1], Miss Mahreen Pakzad[1], Mr Rizwan Hamid[1], Miss Tamsin Greenwell[1], Mr Jeremy Ockrim[1]

[1]University College London Hospitals NHS Foundation Trust (UCLH), London, United Kingdom

Introduction: Complementing cystometrograms (CMG) with fluoroscopic imaging (video-urodynamics, VCMG) contributes additional anatomic detail and possibly pathophysiology of the urinary tract. Literature on the utility of this supplementary information is sparse and contradictory. We assessed whether the addition of fluoroscopic imaging changed diagnosis and management in a cohort of patients with lower urinary tract symptoms

Methods: Fifty consecutive patients that underwent CMG, followed subsequently by VCMG were included. The data extracted included CMG and VCMG findings (diagnosis), surgical management and functional outcomes. All cytometrograms were performed for indications in accordance to NICE guidelines and ICS protocols

Results: The patients included 24 men and 26 women, of whom 17 had neuropathic LUTS and the rest had non-neuropathic incontinence. The VCMG changed the primary CMG diagnosis in 16 patients (32%), leading to a change in treatment decision in 14 patients (26%). Two patients had a new diagnosis of stress urinary incontinence seen on fluoroscopy treated by pessaries and pelvic floor physiotherapy respectively. Two patients had significant bladder descent quantified, changing intervention from a mid-urethral sling procedure to colposuspension. De novo detrusor overactivity was identified in 5 patients.

Conclusions: VCMG following a non-diagnostic CMG changed the diagnosis in 32% of patients. In 10 patients (20%) the diagnosis was altered by the fluoroscopy, and in five others (10%) de novo overactivity was picked up in the second more detailed study. Patient interventions were altered by these findings. Further research is required to outline subpopulations and establish the risk and cost benefits ratios

P3-4 The relationship between predominant symptom in mixed urinary incontinence and video-urodynamic findings in women – are the proposed updated NICE 2018 guidelines reasonable?

Ms Habiba Yasmin[1], Dr Bogdan Toia[1], Mr Richard Axell[1], Miss Mahreen Pakzad[1], Mr Rizwan Hamid[1], Mr Jeremy Ockrim[1], Miss Tamsin Greenwell[1]
[1]University College London Hospitals NHS Foundation Trust (UCLH), London, United Kingdom

Background: NICE guidelines 2018, currently out to consultation, suggest that urodynamic assessment is NOT required in women with stress predominant mixed urinary incontinence (MUI) prior to surgical intervention. This is based predominantly on expert opinion, as data on this topic is sparse. We have assessed the predictive power of the predominant symptom of MUI to determine the underlying urodynamic abnormalities to further clarify this issue.

Patients and methods: 35 women with MUI attended for video-urodynamic studies (VUDS). They were asked a predefined set of questions aimed at assessing the predominant symptomatic component of their incontinence. Immediately following the questionnaire, VUDS were performed

Results: The sensitivity and specificity of symptomatic stress urinary incontinence (SUI) for urodynamic finding of stress urinary incontinence (USUI) were 43% and 91% respectively. The sensitivity and specificity of symptomatic urge urinary incontinence (UUI) for the finding of detrusor overactivity (DO) incontinence were 77% and 43%.

The positive predictive value of SUI for USUI was 90% whilst the negative predictive value was only 45%. The positive predictive value for UUI for DO was 64% and the negative predictive value was 60%.

Conclusions: Symptomatic SUI is predictive of USUI in women with MUI in 90% however concurrent DO is missed in 40%. Symptomatic UUI is predictive of DO in 64% and USUI is missed in 55%.

These preliminary results indicate that patient perception of symptoms is insufficient to guide invasive treatments and urodynamics are required to delineate the physiopathological mechanisms of incontinence and accurately guide treatment.

P3-5 The video urodynamics findings of men under 50 years old presenting with lower urinary tract symptoms

Mr Injoon Hwang[1], Ms Kathie Wong[1], Mr Sachin Malde[1], Mr Arun Sahai[1], Mr Eskinder Solomon[1]
[1]Pelvic Floor Unit, Department of Urology, Guy's and St Thomas NHS Foundation Trust, London, United Kingdom

Introduction: Unlike in older men, lower urinary tract symptoms (LUTS) in young men have a variety of underlying causes. The aim of our study was to assess the video urodynamics (VCMG) presentation of men under 50 years-old with refractory LUTS.

Patients & methods: We evaluated the presenting symptoms and VCMG data of 101 consecutive men aged 18-50 years (median 41 years). Patients with known neurogenic bladder dysfunction were excluded. Urodynamic

Table 1.

Predominant component	Urge Predominant	Stress Predominant	Equally Bothersome
Number of women	22	10	3
Urodynamically proven SUI	12 (55%)	9 (90%)	2 (66%)
Detrusor overactivity on VCMG	14 (64%)	4 (40%)	1 (33%)

Table 1. Causes of BOO in 48 men.

BOO Aetiology	n (%)
Bladder neck obstruction	21 (44 %)
Dysfunctional voiding	16 (33 %)
Prostatic obstruction	6 (12 %)
Stricture	5 (10 %)
Total	**48**

parameters included the presence of detrusor overactivity (DO) and compliance (C=bladder volume/detrusor pressure, reduced if C<40 ml/cmH2O). Bladder outlet obstruction (BOO) was defined as BOO index >40 using the International Continence Society nomogram and/or radiographic evidence of external sphincter activity for the diagnosis of functional obstruction.

Results: The presenting symptoms were primarily storage and voiding in 81% and 19% of patients respectively. 4 men were unable to void during the study. On the 97 men with voiding phase data, 49% (n=48) of patients demonstrated BOO. The aetiology of BOO was bladder neck obstruction in 44% (n=26) of men, a non-relaxing external sphincter (dysfunctional voiding) in 33% (n=16), stricture in 5 and prostatic obstruction in 6. Idiopathic DO and/or reduced compliance was demonstrated in 41 men (42%) of whom only 23 (48%) were obstructed.

Conclusion: Although the presenting LUTS are primarily storage in 81% of men aged <50 years, almost half demonstrate BOO. Due to the diverse aetiology of obstruction in this cohort, video urodynamics is recommended for accurate diagnosis of the most flow limiting region.

P3-6 Feasibility of on-tableureteric occlusion urodynamics (OUOU): an important technique to measure capacity and compliance in patients with VUR

Mr Findlay Macaskill[1], Mr Eskinder Solomon[1], Mr Jonathon Olsburgh[1]
[1]Guy's Hospital, London, United Kingdom

Background: Accurately assessing bladder capacity, compliance and pressure in patients with vesico-ureteric reflux (VUR) is difficult due to the dampening effect of dilated upper tracts. Standard video-urodynamics (UDS) can significantly underestimate bladder pressure. Therefore, it is possible to mis-interpret the safety of the lower urinary tract prior to transplantation, especially if upper tract infection may warrant native nephrectomy. To compare bladder capacity and pressure measurements performed with and without ureteric balloon occlusion (OUOU) in patients with VUR.

Methods: Ureteric balloon occlusion was achieved with hysterosalpingogram catheters (single lumen 5.5 Fr catheter; 1.5 ml balloon) positioned into the distal ureters at cystoscopy under general anaesthesia. Catheter balloons were inflated with 1.5 ml of contrast. A dual lumen urodynamic catheter was inserted into the bladder. Bladder filling was at 10 ml/min. We recorded bladder capacity and compliance (C= Δbladder volume/Δdetrusor pressure) with and without ureteric occlusion.

Results: A female patient underwent standard UDS and OUOU. With standard UDS, VUR occurred after 80mls of bladder filling and urodynamic calculations suggested normal compliance. After OUOU, there was marked loss of compliance (Pdet >55 cmH2O) after 160 ml of bladder filling.

Conclusion: On-table urodynamics with ureteric occlusion (OUOU) permits more accurate assessment of lower urinary tract capacity and compliance in isolation from the upper urinary tract. This is a particularly important test for urologists to perform selectively as part of pre-transplant bladder assessment in patients with VUR.

P3-7 The diagnostic benefit of flexible cystoscopies in the investigation of recurrent urinary tract infections in women

Miss Angela Ng[1], Miss Nicola Santoni[1], Mr Omar Abourmarzouk[1], Mr Grenville Oades[1], Mr Douglas Small[1], Miss Flora Rodger[1]
[1]Queen Elizabeth University Hospital, Glasgow, United Kingdom

Background and purpose: To investigate the role of cystoscopy in the investigation of recurrent urinary tract infections in women.

Patients: All women undergoing flexible cystoscopy to investigate recurrent urinary tract infection (rUTI) over a 20-year period from January 1997 to January 2017.

Methods: A retrospective review of consecutive cases within a single institution was carried out. Female patients

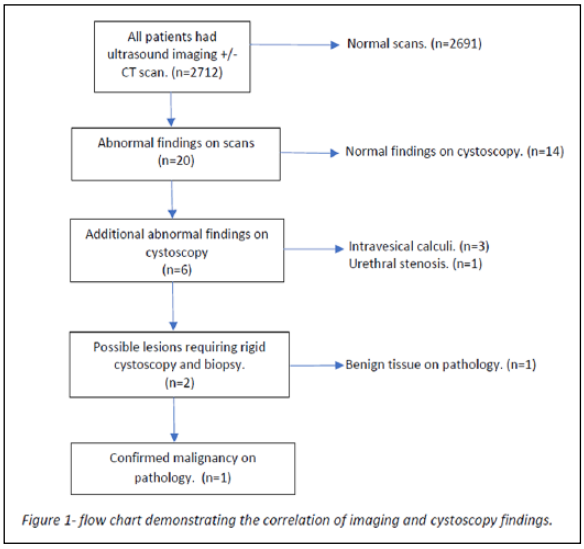


Figure 1- flow chart demonstrating the correlation of imaging and cystoscopy findings.

		n (% of all cystoscopies)	Mean age (years)	Range (years)
Abnormalities		223/2712 (8.22)	52	16-93
	Malignant bladder lesion	4/2712 (0.15)	73	65-86
	Benign erythematous lesion	12/2712 (0.44)	64	45-78
	Urethral stenosis	195/2712 (7.19)	50	16-93
	Intravesical calculi	3/2712 (0.11)	54	42-69
	Foreign Body	2/2712 (0.07)	77	77
	Urethral Caruncle	1/2712 (0.04)	80	80
	Diverticulum	6/2712 (0.22)	79	65-88

Table 1: abnormalities found on flexible cystoscopies.

with a diagnosis of recurrent urinary tract infection who had a cystoscopy as part of their initial investigation were included.

Results: 2712 patients were identified. Of this, 223 patients (8.22%, mean 52 yrs; range 16-93yrs) had an abnormality on flexible cystoscopy. The majority (n=195, 7.19%) had a urethral stenosis which require dilatation under local or general anaesthesia. Twelve patients (0.44%) were found to have an erythematous lesion (mean 64 yrs; range 45-78 yrs) which was proven non-malignant after biopsy. A further 12 patients with abnormalities were urethral diverticulum (n=6, 0.22%), bladder stones (n=3, 0.11%), foreign bodies in the bladder (n=2, 0.07%) and an urethral caruncle (n=1, 0.04%). Only 4 patients (0.15%) had malignant lesions, of which 3 were bladder TCC and 1 SCC. All 4 patients were 65 years and over.

Conclusion: Cystoscopy is not recommended in women under the age of 65 as a routine investigation for rUTI. The occurrence of malignant finding is rare in recurrent UTI patients, and cystoscopy should not be considered in those under 65 years of age unless other indications are present.

P3-8 Long-term efficacy of prophylactic antibiotics and alternative treatments for preventing recurrent uncomplicated female urinary tract infections: A systematic review and network meta-analysis

Mr Sami Salahia[1], Mr Luke Stroman[2], Mr Mouaz Riffai[1], Mr Mohamed Shehata[3], Mr Mohamed Fathi Elabd[4], Mr Hadi Salahia[1], Dr Martino Dall'Antonia[1], Mr Mohamed Hammadeh[1]

[1]Ain Shams University, Cairo, Egypt, [2]Queen Elizabeth Hospital, London, United Kingdom, [3]Zagazig University, Zagazig, Egypt, [4]Cairo University, Cairo, Egypt

Introduction: Continuous antibiotics can be considered for females with recurrent UTI when behavioural measures have failed. We aim to systematically review and conduct a meta-analysis of randomized controlled trials (RCTs) to assess the efficacy of prophylactic long-term antibiotics and non-antibiotic medicines for female patients with recurrent UTI and to evaluate patient safety.

Materials and Methods: We reviewed RCTs that compared prophylaxic antibiotics and/or non-antibiotic agents with placebo in terms of long-term effectiveness and adverse events in preventing recurrent UTI in females. We searched PubMed, Scopus, Cochrane Central Register of Controlled Trials (Central), Web of science, and Ovid for relevant studies, published up to August 2018. All outcomes were presented as odds ratios (ORs) with 95% confidence intervals. Both conventional and network meta-analyses (with a frequentist approach) were conducted on R software.

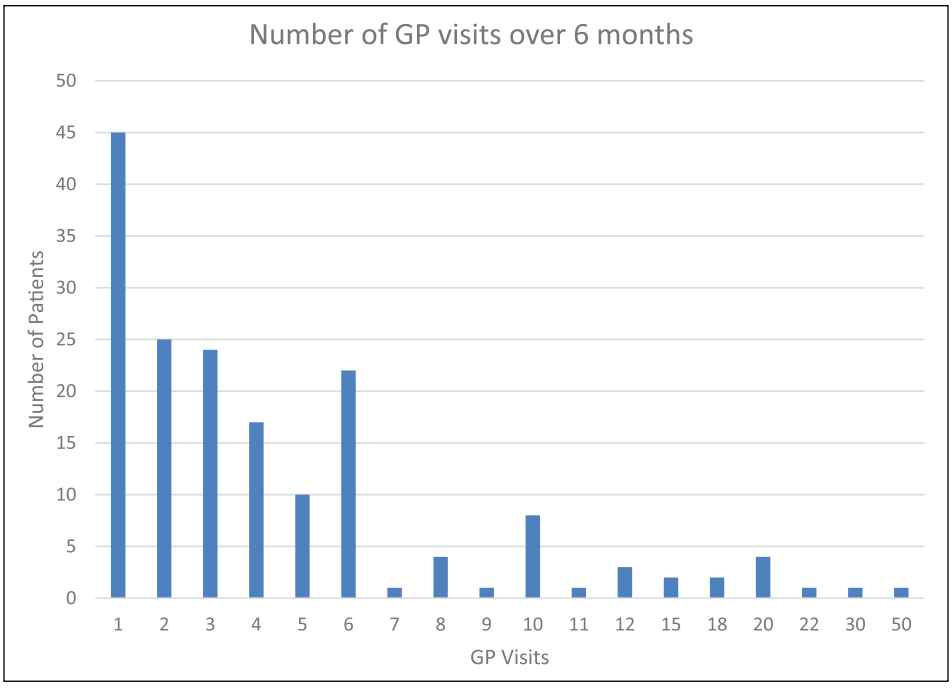
Results: Meta-analysis was completed on 13 RCTs (1279 participants). D-mannose (OR 0.10) had the highest-ranking as therapeutic treatment for 6 months follow-up followed by Nitrofurantoin (OR 0.15) then Trimethoprim/Sulfamethoxazole (OR 0.17). Nitrofurantoin was associated with a higher risk of adverse events compared to other interventions at both 6 months (OR 81.17) and 1 year (OR 5.32). Norfloxacin (OR 0.02) followed by Trimethoprim (OR 0.07) then Nitrofurantoin (OR 0.19) had the highest efficacy for patients with recurrent UTI at 1 year follow up.

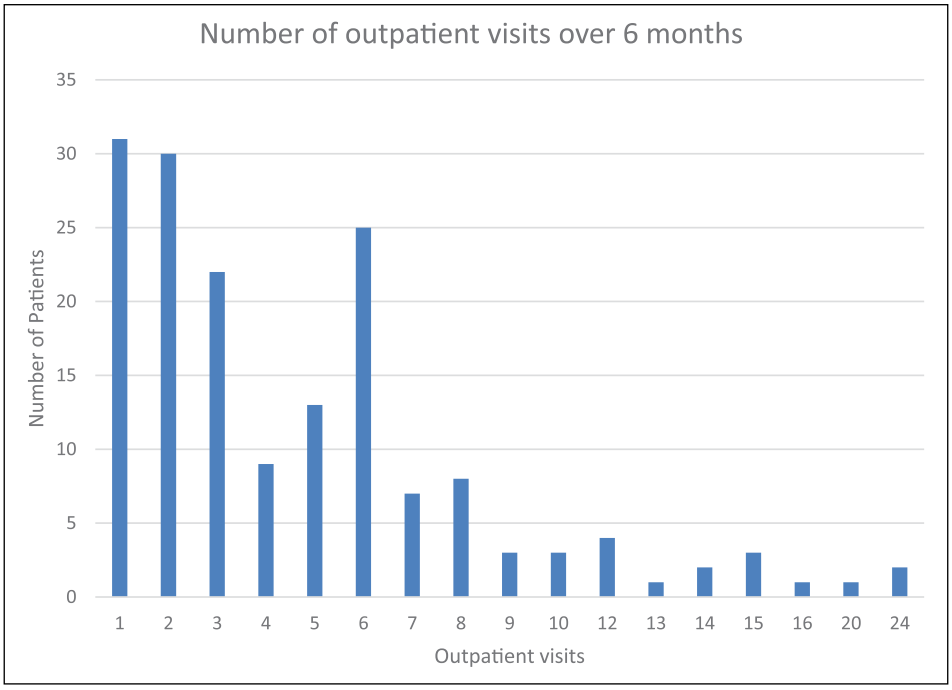
Conclusions: D-mannose was seen to be the most effective at 6 months while Norfloxacin was most effective at 1 year. Further prospective randomized controlled trials with large sample size are needed.

P3-9 Healthcare resource use in patients with interstitial cystitis/bladder pain syndrome: a survey of UK patients

Mr Sachin Malde[1], Mr Ayman Younis[2], Mr Michael Ho[3], Ms Jane Griffin[4]

[1]Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom, [2]Morriston Hospital, Swansea, United Kingdom, [3]Consilient Health, Richmond upon Thames, United Kingdom, [4]JANE GRIFFIN Associates, East Molesey, United Kingdom





Introduction: Interstitial cystitis (IC)/Bladder Pain Syndrome (BPS) is a poorly understood condition characterised by long-term pelvic pain; however, data on this patient population in the UK are limited.

Patients (or Materials) and Methods: An online survey was administered through two charities: Bladder Health UK and Bladder & Bowel Community. Respondents were asked if they had been diagnosed with IC/BPS as well as healthcare resource use due to their condition in the previous 6 months.

Results: 252 patients completed the survey. In the previous 6 months, due to their BPS: 172 (68%) respondents saw their GP and 80 (32%) a primary care nurse at least once; 165 patients (65%) had one or more outpatient

visits (mean number of visits 3.16; median 4.1; range 1-24); and 39 respondents (15%) reported being admitted to hospital due to their BPS.
71 (28% of all respondents) had a cystoscopy in the previous 6 months (18 had 2 and 3 respondents had 3); 49 of 71 were with hydrodistension under general anaesthetic.
Other procedures/treatments (carried out at least once) in the previous 6 months were: bladder distension in 34 respondents (13%); nerve stimulation 13 (5%); bladder installation 87 (49%); antibiotics 123 (49%); and bladder wall injections 12 (5%). 164 respondents (65%) reported taking oral medication.
The average total cost of treating patients with BPS, excluding drugs and treatment cost, over a 6-month period was £860.36.
Conclusions: In addition to high humanistic burden, this survey shows there is significant economic burden associated with BPS.
Health Care Use supporting information

P3-10 The value of an initial cystoscopy and bladder hydrodistension in patients with Bladder Pain Syndrome (BPS): Real world data with 5-year follow-up

Mr Jamie V. Krishnan[1], Mr Jonathan Manley[1], Mr Karl H. Pang[1], Mr Richard D. Inman[1], Prof. Chris R. Chapple[1], Mr Nadir I. Osman[1]
[1]Royal Hallamshire Hospital, Sheffield, United Kingdom

Introduction: Controversy exits around optimal management of Bladder Pain Syndrome (BPS) due to a lack of high-level evidence. Thus, its management varies greatly. Our clinical routine is to perform cystoscopy and bladder hydrodistension (CBH) under general anaesthesia (GA) on all patients with a clinical diagnosis of BPS. This study aims to determine the therapeutic and prognostic value of initial CBH in BPS patients.
Methods: A retrospective review of prospectively collected data on patients with newly diagnosed BPS undergoing initial CBH under GA between 2005-2006 was undertaken. Demographics, prior treatments, CBH findings (maximum anaesthetic capacity (MAC), physiological response), treatment response (at 6-week post-operatively) and further treatments were recorded.
Results: 62 patients underwent CBH. Median follow-up was 5yrs. Mean MAC was 738ml. 45% had concomitant urethral dilatation. Complete, partial and no symptom response was observed in 18%, 53% & 29% respectively. 27% had no further treatment, 30% had pharmacotherapy, 30% had further CBH.
Those with complete response were significantly more likely to have undergone concomitant urethral dilatation compared to non-responders (72.7% vs 27.3%, p=0.03). Complete & partial responders were significantly more likely to undergo further CBH (76.5% vs 23.5%; p=0.04). 3.6% of non-responders had reconstructive surgery (vs 0% partial/complete response; p=0.04); and had significantly lower MAC (375ml Vs 750ml; p=0.03).
Conclusions: Initial GA CBH is a useful intervention, with therapeutic and prognostic benefit, in patients with BPS. One third of patients required no further intervention. The initial treatment response and MAC provide useful prognostic information as to the need for further intervention.

ePoster Session 4: Andrology, Penile Cancer and Reconstruction
Monday 24 June
15:30-17:00
Boisdale
Chairs: Ayo Kalejaiye, Gareth Brown & Patrick Gordon

P4-1 Recent trends in reported incidence of erectile dysfunction, hypogonadism, PDE5i and testosterone replacement therapy prescriptions in patients with Type 2 diabetes mellitus in a primary care setting

Dr Patricia Schartau[1], Professor Michael Kirby[2], Professor Irwin Nazareth[3], Dr Laura Horsfall[4], Dr Mariam Molokhia[5], Dr Manuj Sharma[6]
[1]Royal Free Hospital, Hampstead Group Practice & King's College London, London, United Kingdom, [2]The Prostate Centre London & University of Hertfordshire, London, United Kingdom, [3]University College London, London, United Kingdom, [4]University College London, London, United Kingdom, [5]King's College London, London, United Kingdom, [6]University College London, London, United Kingdom

Background: Erectile dysfunction (ED) and testosterone deficiency (TD) are complications of Type 2 diabetes (T2DM), and predictors of cardiovascular disease. Guidelines recommend that men with T2DM are assessed/treated for ED/TD, which was included into the GP Quality and Outcomes Framework (QOF) from 2013-14.
Aim: To explore the effects of QOF on ED/TD diagnoses and management in T2DM patients.
Method: Population: Male cohort (⩾ 18 years) with T2DM and contributing to UK GP electronic health records from 1999-2016. Adjusted incidence rate ratios (IRRs) were estimated using multivariate Poisson regression.
Results: 141,310 adult males (mean: 60 years) with T2DM were included. During follow-up, 62,698 (44%) had a recorded ED assessment, 25,198 (18%) an ED diagnosis and 21,069 (15%) received a phosophodiesterase-5 inhibitor (PDE5i). ED assessments increased from 7.6 per 1000

PYAR in 2012 (95% CI: 7.0–8.3) to 620 in 2013 (95% CI: 614-626) when included into QOF but dropped to 59.4 (95% CI: 56-63) in 2016. Compared with 2012, the adjusted incidence of recorded ED diagnoses and PDE5i prescriptions doubled in 2013 (IRR 2.0; 95% CI: 1.8–2.1) before falling to below pre-QoF levels in 2016 (IRR 0.89; 95% CI: 0.82–0.97). Of 1187 diabetic men diagnosed with ED or receiving a PDE5i in 2015, 213 (18%) had minimum one testosterone measurement, of which 45 (21%) met criteria for hypogonadism (testosterone <8nmol/l). Nine (20%) subsequently received testosterone replacement therapy.
Conclusion: To improve GP diagnosis/management of ED/TD in T2DM patients, incorporation of guidelines into a GP framework and/or financial incentives plus education may be required.

P4-2 Smart SAA- Sex smart in a click

Dr Patricia Schartau[1], Professor Michael Kirby[2]
[1]Royal Free Hospital, Hampstead Group Practice & King's College London, London, United Kingdom, [2]The Prostate Centre London & University of Hertfordshire, London, United Kingdom

Background: The uptake of health reviews remains low, especially in men and for stigmatised conditions.Technology is employed to increase uptake and improve patient empowerment.
Aim: To create an App and Website which act as triage tools and allow detection of non-infectious sexual health problems and relating cardiovascular disease (CVD).
Method: Diagnostic/management criteria for female sexual/erectile dysfunction, premature ejaculation, testosterone deficiency and LUTS were obtained from international guidelines to create an App/Website where users access validated questionnaires leading to diagnostic/management advice.
Results: User data (N = 6721) from 03/2016 - 01/2019 suggested high levels of sexual dysfunction amenable to treatment. Regarding the erectile dysfunction (N= 2001, mean age 41y, SD = 16y) and the premature ejaculation questionnaires (N= 974, mean age 34y, SD = 14y), 83% of participants portrayed some dysfunction. Regarding testosterone levels, 83 % of participants (N= 1650, mean age 36y, SD = 14y) produced an ADAM score that warranted specialist input. 66% of females (N= 2060, mean age 33y, SD = 15y) reported sexual dysfunction. 75% of females and 94% of males reported LUTS.
Conclusion: This is the first App/Website supporting health screening for the above urological conditions. Benefits include easy access, cost free, a triage tool function, provision of a preliminary diagnosis and symptom support. Given that erectile dysfunction and testosterone deficiency are predictors of CVD and have been incorporated into cardiovascular risk calculators (QRisk 3), this tool may aid diagnosis of (early) CVD, providing a window of opportunity for appropriate lifestyle changes and pharmacological management.

P4-3 Collagenase clostridium histolyticum injections for Peyronie' s disease – our experience, outcomes and predictive factors for 100 patients

Dr Giovanni Chiriaco[1], Dr Mark Johnson[1], Mr Oliver Ralph[1], Ms Nikita Shroff[1], Prof David Ralph[1]
[1]University College London Hospitals, London, United Kingdom

Introduction: to evaluate the efficacy, safety and predictive factors of collagenase clostridium histolyticum (CCH) in the treatment of Peyronie's disease(PD) using the modified treatment protocol.
Methods: a prospective study of 100 men with PD that completed at least 1 course(3 injections) of CCH treatment at a single centre. The majority(80%) received 1 course, with 15%(n=15) and 5%(n=5) completing 2 or 3 courses respectively. The angle of curvature assessment, International Index of Erectile Function (IIEF) and Peyronie's Disease Questionnaire (PDQ) were completed at baseline and 4 weeks after each course. Co-morbidities and risk factors for PD were recorded. The range of curvature improvement was assessed as improvement<14°;15°-20°; and >21°.
Results: The baseline curvature was 54±17°. There was mean improvement of 31%(17±10°) following 1 course. Following a second course there was a 36% improvement from baseline (23.3±10°). After a third course, 52.3%(35 ± 9°) improvement. There were significant improvements in IIEF and PDQ. CCH was well tolerated with one patient experiencing significant side effects (fracture). Overall 12%(n=12) patients experienced transient mild side effects. Following CCH treatment, 10%(10/100) opted for surgical correction. Men with a greater curvature(>70) and PD for greater than 12 months responded significantly better to CCH and were more satisfied.
Conclusions: The modified protocol of CCH is a safe and effective non-surgical treatment option for PD. There is a sustained improvement from baseline penile curvature with second and third courses of treatment. Predictive factors include magnitude of curvature and having PD for more than 1 year.

P4-4 How common is an underlying pathology in men presenting with haematospermia?

Miss Maria Satchi[1], Miss Martina Smekal[1], Mr. Athos Katelaris[1], Mr. Asif Muneer[1]
[1]University College London Hospital, London, United Kingdom

Introduction: Haematospermia can present in asymptomatic men and can be alarming. This raises the concern of

an underlying pathological cause leading to multiple investigations. The aim of this study was to retrospectively evaluate the diagnostic yield of investigations for haematospermia and the incidence of underlying pathology.

Methods: A retrospective review of 100 consecutive men who underwent investigations for a single or recurrent episode of haematospermia was performed in a single centre. Patient demographics, radiological and microbiological results were recorded together with the clinical outcomes.

Results: The median age was 51 years (range 16-77 years). In this cohort, 10% were found to have a significant finding for which an intervention was proposed (prostate cancer n=2, mesonephric duct abnormality n=1, ejaculatory duct stones n=1, seminal vesicle (SV) dilatation n=4, renal stone n=1, abnormal MRI n=1). 4% were offered an SV washout for SV dilatation or blood. No significant findings were identified on renal and scrotal ultrasound or CT. Urine and semen cultures were positive in one patient (Klebsiella). A total of 76 patients underwent a TRUS and 27 of these patients were found to have an abnormality (ejaculatory duct calcifications/debris n=13, midline prostate cyst n=7, SV dilatation/blood n=7). 83% did not require any follow up.

Conclusions: In this cohort only 10% of patients were found to have an abnormality. Apart from TRUS the remaining investigations have a low diagnostic yield. Based on our results, we propose an algorithm for the management of haematospermia to limit unnecessary investigations with the majority requiring reassurance.

Table 1. Primary presentation of EDO. NB: some patients had more than 1 presentation.

Presentation of EDO	Number of patients
Pain	31
Haematospermia	20
Infertility	32
Recurrent UTI / epididymitis	4
Low ejaculatory volume	13

P4-5 Evaluation and Treatment of Ejaculatory Duct Obstruction – UK single centre experience

Mr Chiriaco Giovanni[1], Ms Karen Randhawa[1], Mr Athos Katelaris[1], Mr Vaibhav Modgil[1], Mr Asif Muneer[1], Professor David Ralph[1], Ms Philippa Sangster[1]

[1]University College Hospitals London Nhs Trust, London, United Kingdom

Introduction: Ejaculatory duct obstruction (EDO) remains a rare but surgically correctable cause of haematospermia, ejaculatory disorders and male infertility occurring in 5% of men. EDO often presents with infertility; however, patients may present with decreased force of ejaculate, periejaculatory pain, decreased ejaculate volume and haematospermia.

Methods: Retrospective analysis of 62 patients diagnosed with EDO over 16 years. Patients were evaluated by history, examination, trans-rectal ultrasonography (TRUS) and semen analysis if indicated. Patients presenting with infertility had full hormonal and genetic profile performed. All patients had transurethral resection of ejaculatory ducts (TURED) or TUR cyst deroofing for midline cysts.

Results: Mean patient age was 36 years. (Table 1)

The cause of EDO was congenital midline cyst in 38 patients, idiopathic in 12 and associated with calculi in 12. TURED was found to resolve haematospermia in 87% of patients presenting with this symptom alone.

Complication rate of 17.7% was seen including infection, retention and retrograde ejaculation.

Thirty-two presented with infertility; of these sixteen underwent TURED and sixteen TUR deroofing. Semen parameters are compared in Table 2. Treatment of prostatic cysts significantly improved concentration and motility in infertile patients (p=0.011).

Conclusion: In selected patients, TURED and TUR deroofing can result in marked improvements in semen parameters and symptoms. Although complication risk is high, effects are mild and transient. EDO is a common cause of obstructive azoospermia, haematospermia or ejaculatory pain. A simple semen volume may help the general urologist in diagnosing patients. Careful patient

Table 2. Comparison of semen parameters prior to and following intervention in patients being investigated for infertility.

	Volume ml (mean±SD) N=22	**Concentration** mil/ml (mean±SD) N=20	**Motility** % (mean ±SD) N=21	**pH** (mean ±SD) N=12
Pre-intervention	0.9 ± 0.9	5.1 ± 12.0	17.2 ± 19.1	7.46 ± 1.13
Post intervention	2.7 ± 1.7	16.4 ± 30.2	28.7 ± 27.1	7.1 ± 1.4
Difference	1.8 ± 1.4	11.1 ± 33	25.3 ± 21.4	2.0 ± 2.9

selection, adequate counselling and surgical experience are essential for optimal results.

P4-6 Evidence that testicular sperm in infertile men has improved DNA integrity in comparison to ejaculated sperm

Miss Lona Vyas[1], Dr Sheena Lewis[3], Dr Alison Taylor[2], Mr James Nicopoulos[2], Mr Raef Faris[2], Dr Channa Jayasena[1], Mr Suks Minhas[1], Mr Jonathan Ramsay[1]
[1]Imperial Healthcare Trust, London, United Kingdom, [2]Lister Hospital, London, UK, [3]Examen, Belfast, UK

Introduction: There is increasing evidence that the integrity of sperm DNA may be associated with recurrent miscarriage. The objective of this study was to determine the DNA quality of testicular versus ejaculated sperm.
Patients and Methods: 63 men with persistently raised DNA fragmentation from couples who had failed cycles of intracytoplasmic sperm injection (ICSI) with ejaculated sperm underwent testicular sperm extraction compared with 76 fertile donors. Sperm DNA fragmentation was measured by Comet assay. Average Comet scores (ACS), Low Comet scores (LCS) and High Comet scores (HCS) were determined. Comparisons were made for each of these parameters from ejaculated and testicular sperm from infertile men with fertile donors.
Results: For total DNA damage ejaculate ACS (%) from infertile men was 40.3+/− 1.2 versus 17.9+/−1.3 in testicular sperm and 14.8+/− 0.6 from ejaculates from fertile donors ($P<0.001$).
Ejaculate LCS (%) from infertile men was 33.6+/− 2.4 versus 77.3+/−2.4 from testicular sperm and 90.2+/− 1.0 from ejaculates from fertile donors ($P<0.001$).
Ejaculate HCS (%) from infertile men was 29.5+/− 2.7 v 8.8+/−1.8 from testicular sperm and 1.9+/−0.4 from ejaculates of fertile donors ($P<0.001$).
Comparison of infertile ejaculate with fertile ejaculate was significant for all 3 groups of scores ($P<0.001$).
The total sperm DNA damage in testicular sperm from infertile men is not significantly different from ejaculated sperm from fertile donors (P=0.08).
Conclusion: This data provides compelling evidence that testicular sperm from infertile men have the same high DNA quality as ejaculated sperm from fertile donors.

P4-7 Trends in Sperm Cryopreservation: Should sperm cryopreservation be mandatory in all patients with male cancers?

Mr Tharu Tharakan[1], Dr Ee Teng Goh[1], Mr Thomas Stroud[1], Ms Monica Figueiredo[1], Ms Lia Joannou[1], Dr Chey Dearing[1], Ms Lona Vyas[1], Dr Channa Jayasena[1], Mr Jonathan Ramsay[1], Mr Suks Minhas[1]
[1]Imperial Healthcare Nhs Trust, London, United Kingdom

Introduction: Whilst, advancements in cancer therapies have led to improvements in life expectancy and a greater emphasis on survivorship, there is little data analysing trends in sperm cryopreservation in men with cancers.
Methods: A retrospective analysis of all cryopreservation samples performed for oncology patients at a tertiary centre between1989-2013.
To assess trends- the study time frame was subdivided into the following periods: <1990;1990-1994;1995-1999;2000-2004;2005-2009 and 2010-2013.
Results: There were 4023 patients in this 24-year period. 1180 patients were excluded as the diagnosis of cancer was not clear. Overall, the number of referrals increased from 36(<1990) to 602(2010-2013). The most prevalent cancer was testicular cancer (33%) followed by lymphoma and leukaemia. The median age was 30.3 years. There was a correlation between age and sperm concentration (0.088, $p<0.001$). Median sperm concentration in testicular cancer patients was significantly lower (21) compared to leukaemias (40), lymphomas (37) and other cancers (40) ($p<0.001$). Using the 2010 WHO threshold for oligozoospermia, 40.3% of testicular cancer patients had oligozoospermia, compared to 31.5% for leukaemia, 25.6% for lymphoma and 24.9% for other cancers ($p<0.001$). In patients with testicular malignancies, 9% had severe oligozoospermia (concentration of <1*106/mL), compared to 10.1% of patients with leukaemia, 4.8% of patients with lymphoma and 6.8% of patients with other cancers
Conclusions: Over the last 25 years there has been an increase in cryopreservation referrals. There is a strong association between cancers in men and oligozoospermia, with a significant number having severe abnormalities. This highlights the need for a focused patient centric pathway for fertility preservation in all male cancer patients.

P4-8 Total phallic reconstruction in the genetic male

Mr Mattia Anfonso[1], Mr Giovani Chiriaco[1], Mr Oliver Ralph[1], Mr Marco Falcone[1], Mr Nim Christopher[1], Professor David Ralph[1]
[1]Uclh, London, United Kingdom

Introduction: Total phallic reconstruction (TPR) for the genetic male with congenital or acquired penile inadequacy is performed using a radial artery-based forearm free flap (RAFFF).
Methods: 108 genetic male patients underwent a TPR using a RAFFF as a multiple staged procedure 1) TPR with RAFFF 2) glans sculpting 3) penile prosthesis implantation.

A urethroplasty was performed in one (80.6%) or two stages (19.4%) depending on the quality of the previously reconstructive native urethra. Patient reported outcomes measures (PROM) were assessed through a 4-items "ad hoc" created questionnaire and a 5-point Likert.

Results: The median age at the time of TPR was 32.5 years (IQR 24-46) and median follow-up was 78.5 mths (IQR 30-129). The aetiologies were: penile cancer (26%), bladder exstrophy (30%), micropenis (26%) and traumatic amputation (18%). 77 patients completed all stages.

PROMS showed that 80% of patients were fully satisfied with the cosmetic appearance and size of the neo-phallus, 76% achieved orgasm through masturbation or sex intercourse, 76% would have the operation again and 90% would recommend the operation to a friend.

Complications included: acute arterial thrombosis (n = 4) with complete phallus loss in 2, partial necrosis of the neophallus due to venous ischemia (n=21) managed by local flap reconstruction or grafting. The overall incidence of urethral complications was 60% (32% fistula and 28% stricture) with 2 patients ending up with a permanent perineal urostomy.

Conclusions: Despite the high incidence of postoperative, TPR in the genetic male using a RAFFF yields excellent aesthetic and functional results

P4-9 Surgical treatment for recurrent bulbar urethral stricture: A randomised open label superiority trial of open urethroplasty versus endoscopic urethrotomy (The OPEN Trial)

Mr B Goulao, S Carnell, J Shen, G Maclennan, J Norrie, J Cook, E McColl, M Breckons, L Vale, R ForBes, S Currer, M Forrest, J Wilkinson, D Andrich, S Barclay, A Mundy, J N'Dow, S Payne, N Watkin[1], R Pickard[2]

[1]St George's University NHS Trust, London, United Kingdom, [2]Newcastle Clinical Trials Unit based at Newcastle University, Newcastle upon Tyne, UK

Introduction: Peno-bulbar urethral stricture disease affects 0.5% of men. Initial treatment is typically urethrotomy. Recurrence within four years occurs in about half of subjects. Options for further treatment are repeat urethrotomy or by urethroplasty. The OPEN Trial sought to estimate the relative benefits of these two interventions.

Methods: A 24-month trial (2013-15) randomly assigned men from 38 UK hospitals to urethroplasty or urethrotomy. Primary outcome was the area under the curve (AUC) of measurements of a previously validated Patient Reported Outcome Measure (PROM). Participants who completed at least three scores: one prior to intervention, one in the first year of follow-up and one during the second year were included in the primary intention to treat analysis. The main secondary outcome was need for re-intervention.

Results: The primary analysis included 69 (63%) allocated to urethroplasty and 90 (81%) allocated to urethrotomy. The mean (SD) AUC of voiding score at 24-months on a scale from 0 (no symptoms) to 24 (worst symptoms) was 7.4 (3.8) in the urethroplasty group and 7.8 (4.2) in the urethrotomy group, a mean (95% CI) difference of –0.36 (–1.74 to 1.02). Fifteen (16%) men in the urethroplasty group required re-intervention compared to 29 (28%) of men allocated to urethrotomy. The hazard ratio for time until first re-intervention (95% CI) was 0.52 (0.31 to 0.89).

Conclusion: In men with recurrent peno-bulbar urethral stricture, both urethroplasty and urethrotomy provided effective control of voiding symptoms. The benefit lasted longer, and the need for re-intervention lower in those allocated to urethroplasty.

P4-10 Augmented Non-transecting bulbar urethroplasty

Mr Simon Bugeja[1], Miss Stella Ivaz[1], Miss Anastasia Frost[1], Miss Nikki Jeffrey[1], Miss Angelica Lomiteng[1], Miss Mariya Dragova[1], Miss D.E Andrich[1], Prof A.R Mundy[1]

[1]University College London Hospitals NHS Foundation Trust, London, United Kingdom

Introduction: We developed the augmented non-transecting anastomotic urethroplasty procedure (ANTABU) for selected long non-traumatic bulbar strictures with an obliterative segment component as an alternative to simply augmenting the entire stricture.

Patients and Methods: Between 2012-2017, 45 patients underwent ANTABU. Follow-up was clinically, using PROMs, flow rate and urethrography. Mean follow-up was 14.8months(12-38.2months). Surgical technique involves excision of spongiofibrosis in the tightest segment of a longer bulbar stricture in a non-transecting fashion with the rest of the dorsal stricturotomy augmented with a buccal graft.

Results: 37(82.2%) strictures were idiopathic, 2(4.4%) post-TURP, 6(13.4%) catheter-related. Mean stricture length was 5.4 cm(3 – 9cm). Mean length of obliterative spongiofibrosis excised in a non-transecting fashion was 1.2cm(0.5 – 2cm). Graft was harvested from the cheek in 37(82%) patients and sublingually in 8(18%).

2 of 43(5%) patients had radiological evidence of recurrence. Mean flow rate at least 1 year postoperatively was 25.4ml/s. 28 of 32patients (87.5%) reported they were satisfied/very satisfied with the surgical outcome. 1 patient could not void due to detrusor failure. 13(29%) patients developed post-micturition dribble which was tolerable in all. Erectile dysfunction longer than 6 months was reported in 1 patient (2%).

Conclusion: ANTABU allows excision of the narrowest segment of spongiofiibrosis without disrupting the integrity of ventral spongiosal blood flow, reconstituting the urethral plate to a wider calibre, avoiding an almost circumferential substitution in this area. This also permits the use of narrower and shorter oral grafts with reduced donor site morbidity. We have demonstrated excellent results with this technique in the short to intermediate term.

P4-11 The outcome of revisional urethroplasty surgery

Miss Stella Ivaz[1], Mr Simon Bugeja[1], Miss Anastasia Frost[1], Miss Nikki Jeffrey[1], Miss Angelica Lomiteng[1], Miss Mariya Dragova[1], Miss Daniela E Andrich[1], Prof Anthony R Mundy[1]
[1]University College London Hospitals NHS Foundation Trust, London, United Kingdom

Introduction: This study evaluates the outcome of redo-urethroplasty with particular view to identifying factors constituting complexity and any difference in outcome of revisional surgery on the different anatomic segments of the urethra.
Methods: Over ten years, 51 redo-bulbar, 133 redo-penile and 48 redo-posterior urethroplasties following pelvic trauma (PFUI) were performed. Minimum follow-up was five years. Patients were followed up clinically, radiologically and by flow-rate assessment.
Results: Restricture rate for redo-bulbar urethroplasty was 4% (3.5% for primary). Recurrence rate increased significantly in patients having had 3 or more previous urethroplasties. 18.8% of revisional penile urethroplasty recurred (10% in primary). Recurrence was commonest in salvage hypospadias surgery (18%). Small glans, paucity of dartos and a thin spongiosum were poor prognostic factors in penile revision surgery. For bulbar and penile redo-urethroplasty, revision commonly involved a more complex procedure than the primary. Following PFUI redo-urethroplasty, recurrence rate was 12.5% (5.4% in primary). The redo-procedure was usually further down the 'step-wise progression' approach than the primary procedure. Associated pathologies like bladder neck injury or uro-rectal fistula increased complexity. Median time to stricture recurrence for all revisions was three months.
Conclusions: Bulbar urethroplasty has the best results both for primary and revisional surgery even when the revision is more complicated.
Penile urethroplasty has less satisfactory results; is technically more demanding and has many more complicating factors especially in redo-surgery.
Posterior urethroplasty also has a number of complicating factors and is technically more demanding especially in redo-surgery. This emphasises the importance of successful primary intervention in these cases.

P4-12 Treatment Outcomes of Penile intra-epithelial neoplasia (PeIN) related to P16 status

Miss Sophie Ashley[1], Mr Paul Cleaveland[1], Dr Pedro Oliveira[1], Mr Noel Clarke[1], Mr Nigel Parr[2], Mr Marc Lucky[3], Mr Maurice Lau[1], Mr Arie Parnham[1], Professor Vijay Sangar[1]
[1]Department of Urology The Christie NHS Foundation Trust, Manchester, United Kingdom, [2]Department of Urology Wirral University Hospitals NHS Foundation Trust, Wirral, UK, [3]Department of Urology Aintree University Hospitals NHS Foundation Trust, Aintree, UK

Introduction: PeIN is a rare precursor for SCC of the penis. It may be undifferentiated or differentiated. The former is associated with over-expression of P16. PeIN can be treated topically, surgically or with combinations of these. This study assesses the association between clinical outcome of topical therapies and P16 status.
Patients and Methods: Data were collected on patients diagnosed with PeIN referred to a single European Network (2012 - 2018). The following parameters were collected utilising electronic patient records: demographics, smoking status, performance status, co-morbidities, histology, P16 status (P16 + or P16-), LS status, treatment and response.
Results: 251 patients were identified with PeIN. Of these 114 pts were excluded for co-existing invasive cancer. Median age at diagnosis was 63 years (28-93 yrs). Median follow up was 17.5 months. 56 pts were P16+.
Overall P16+ patients showed significantly better DFS over P16- pts (10.4 vs 7.4 mths respectively; $p<0.05$).
In P16+ patients (n=56) receiving treatment with imiquimod alone or in combination with surgery, response rates were 100% versus 54% in those receiving treatments without imiquimod. This was significant ($p<0.05$).
Overall 13.6% of patients progressed to invasive penile carcinoma (17% P16+, 16.7% P16-).
Conclusion: This is the largest cohort of PeIN pts globally. The results indicate that regardless of P16 status, treatment combinations with immunotherapy tend to provide better response rates. P16+ disease responds to immunotherapy-based treatments and patients with P16+ disease have a longer DFS. Furthermore, the study shows that approximately 14% of patients will progress to invasive disease.

P4-13 Long-term evaluation of local cancer recurrence rate in a large multi-centre cohort of penile cancer patients undergoing intraoperative frozen section during organ sparing surgery

Mr Peter Grice[1], Mr Thomas Ellul[2], Miss Anna Mainwairing[3], Mr Anthony Shanahan[2], Mrs Dawn

Cave[1], Dr John Dormer[1], Dr Rebecca Harrison[1], Professor Gareth Brown[2], Mr Ayman Younis[3], Mr Pradeep Bose[3], Mr Jonathan Goddard[1], Mr Duncan Summerton[1]

[1]Leicester General Hospital, Leicester, United Kingdom, [2]Royal Glamorgan Hospital, Glamorgan, Wales, [3]Morriston Hospital, Swansea, Wales

Introduction: Local recurrence rate of penile cancer following surgical excision is reported to be 6-29%. Intraoperative Frozen Section (FS) is a tool used to ensure safe microscopic margins in organ-sparing procedures in penile cancer. We evaluated the impact of intraoperative surgical margin assessment by FS during penile-cancer preserving surgery on the local recurrence rate.

Patients and Methods: We analysed all patients in which intraoperative FS was used during penile preserving surgery in three tertiary referral centres from 2003-2016. Urethral margin and corporal or glandular tissue proximal to the resection margin were analysed. Median follow-up was 45 (25-147) months, and only patients whose procedure was performed greater than two years previously were included to ensure adequate follow-up time.

Results: Out of 176 patients, 79 (44.9%) had partial penectomy, 73 (41.5%) total glansectomy, 9 (5.1%) wide local excision, 8 (4.5%) glans-resurfacing, 6 (3.4%) partial glansectomy, and 1 (0.6%) had circumcision. Intraoperative FS histology of the surgical margin was positive in 20 (11.4%) cases mandating further resection under the same anaesthetic. Final paraffin histology confirmed cancer-free margins in all but 2 (98.9%) patients. In total, 10 (5.7%) patients developed recurrence with a median time to recurrence of 11 months. 9 of those had negative intraoperative FS which was confirmed on paraffin section analysis.

Conclusions: The use of intra-operative frozen section analysis during organ preserving surgery for penile cancer facilitates conservative surgery, reduces the need, distress and expense of further surgery and in this series, contributes to a low rate of local recurrence.

P4-14 Proposing a new CT surveillance protocol for node positive squamous cell carcinoma of the penis

Mr Michael Ager[1], Mr Aditya Manjunath[1], Ms Sylvia Yan[1], Dr Cathy Corbishley[2], Dr Brandon Tinwell[2], Dr Mehran Afshar[3], Dr Alison C Tree[4,5], Mr Benjamin Ayres[1], Mr Nick Watkin[1]

[1]St George's University Hospital NHS Trust, Dept. of Urology, London, United Kingdom, [2]St George's University Hospital NHS Trust, Dept. of Pathology, London, United Kingdom, [3]St George's University Hospital NHS Trust, Dept. of Clinical Oncology, London, United Kingdom, [4]Royal Marsden NHS Trust, Dept. of Clinical Oncology, London, United Kingdom, [5]Institute of Cancer Research, London, London, United Kingdom

Introduction: Evidence for best practice follow up of node positive SCC of the penis (SCCp) is scant. Our practice mirrors EAU guidelines; 3 monthly review CT (TAP) for 2 years and 6 monthly for years 3–5. We aim to determine optimum frequency and duration of CT TAP and length of follow up based on site and timing of first regional or distant recurrence.

Methods: A prospective database of all penile cancer patients treated at our centre from 2002-2017 was reviewed. We compared nodal pathological stage (TNM 7) to site and time of first recurrence. Surveillance time was defined from completion nodal surgery.

Results: Of 1019 new SCCp, 224 were node positive with full follow up data; pN1 (48), pN2 (33) and pN3 (143). 6 pN1 patients had recurrence, (range 1-11 months). 10 pN2 patients had recurrence (range 0 - 12 months). 84 pN3 patients had recurrence (66 in year 1, 14 in year 2, 2 in years 3-5). Site of first recurrence was inguinal basin 21%, pelvis 28%, chest 31%, 20% all other sites.

Conclusions: Regional and distant recurrence was not observed in pN1 and pN2 after 12 months. 97% of pN3 did not relapse after 24 months. Sites of recurrence supports CT TAP as the optimum imaging modality. We propose a new CT TAP surveillance protocol of 2 years for pN1 and pN2 patients; 3 monthly scans for the first year and 6 monthly for the second and a further year for pN3. Patients could then be safely discharged.

P4-15 Adjuvant radiotherapy for pN3 squamous cell carcinoma of the penis – long term survival outcomes from two UK supra-regional referral centres

Mr Michael Ager[1], Dr Kelechi Njoku[3], Dr Maria Serra[2], Dr Sharon Beesley[5], Dr Angus Robinson[6], Dr Lisa Pickering[1], Dr Perric Crellin[7], Dr Mehran Afshar[1], Dr Lona Vyas[3], Mr Ian Eardley[3], Mr Oliver Kayes[3], Mr Oliver Kayes[3], Mr Mamoun Elmamoun[3], Mr Benjamin Ayres[1], Dr Ann Henry[3,4], Mr Nick Watkin[1], Dr Alison C Tree[2]

[1]St George's University Hospital, Lonon, United Kingdom, [2]Royal Marsden Hospital and Institute of Cancer Research, London, United Kingdom, [3]Leeds Teaching Hospital NHS Trust, Leeds, United Kingdom, [4]University of Leeds, Leeds, United Kingdom, [5]Maidstone and Tunbridge Wells NHS Trust, Maidstone, United Kingdom, [6]Brighton and Sussex University Hospital, Brighton, United Kingdom, [7]Poole NHS Foundation Trust, Poole, United Kingdom

Introduction: Supra-network policy has been to recommend adjuvant radiotherapy with concomitant low dose cisplatin delivered with radical intent for any patients with pN3 (TNM 7) SCCp of the groin or pelvis who are fit for treatment. We present the experience of two referral centres.

Methods: We audited all pN3 patients with SCCp. We included patients whose disease was deemed suitable for adjuvant therapy by the supra-network MDT. Intention to treat analysis was undertaken for those who did not start or complete adjuvant treatment. Timings were defined from last nodal surgery. Primary outcomes were disease free and cancer specific survival.

Results: Of 151 patients, 124 completed radiotherapy +/− chemo sensitisation, 23 did not complete treatment and 4 did not start. Median age was 59 years (range 32-94). Median follow up was 20 months.

Adjuvant (chemo)radiotherapy was started at a median 76 days (IQR 48 - 106 days). 45Gy in 20 fractions was most commonly used. Cisplatin was used in 24% (27), 47% (53) had no chemotherapy.

Of the 124 who completed adjuvant treatment, 54 relapsed at a median 5.5 months. 50% (27) were in field relapses (inguinal or pelvic).

At 5 years, DFS was 47.9% and cancer specific survival 44.3%.

Conclusion: Outcomes for N3 disease are better than historical series. The high infield recurrence rate may be addressed with higher doses of radiotherapy – 54Gy in 25 Fractions is now the standard. The InPACT study (NCT02305654) is testing the role of chemotherapy vs chemoradiotherapy vs upfront surgery in a randomised trial.

ePoster Session 5: Prostate Cancer Monday 24 June 15:30-17:00 Carron Chairs: Tom Walton, Stuart MacCracken & Paul Sturch

Rapid Access Prostate Imaging and Diagnosis (RAPID) pathway – an innovative approach for prostate cancer diagnosis

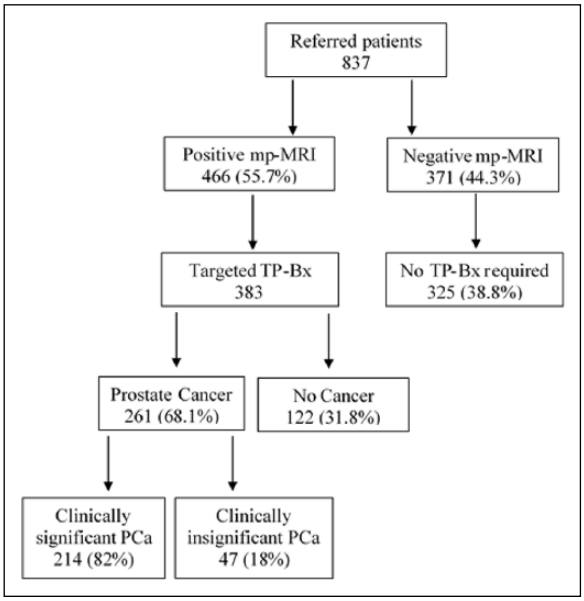
David Eldred-Evans[1,2], Mariana Bertoncelli Tanaka[1,2], Saiful Miah[1,2], Taimur Shah[1,2], Feargus Hosking-Jervis[1], Deepika Reddy[1,2], Martin Connor[1,2], Christopher Khoo[1,2], Mohamed Noureldin[1,2], Arnas Rakauska[1,2], Shahzad Ahmad[4], Kaljit Kaur[4], Neha Sihra[3], Emma Cullen[1], Johannes Jaenicke[1], Marwa Jama[4], Andrew Brown[4], Dione Lother[4], Heather Bhola-Stewart[2], Joanne Sethi[2], Alexandra Forde[2], Amish Lakhani[2], Andrea Rockall[2], Nishat Bharwani[2], Siham Sudderuddin[2], Victoria Stewart[2], Andrew Smith[2], James Carton[2], Josephine Lloyd[2], Ethna Mannion[2], Suchita Joshi[5], Elizabeth Pegers[5], Kunju Harikrishnan[4], Kashif Burney[4], Nalin Khosla[4], Amy Davis[4], Pieter LeRoux[4], Tharani Nitkunan[4], Kathie Wong[4], Rami Issa[3], Chris Anderson[3], Martin Clark[2], Henry H Tam[2], Manit Arya[1,2], David Hrouda[2], Hasan Qazi[3], Stephen Gordon[4], Mathias Winkler[1,2], Hashim U Ahmed[1,2]

[1]Imperial Prostate, Department of Surgery and Cancer, Faculty of Medicine, Imperial College London, London, United Kingdom, [2]Imperial Urology, Imperial College Healthcare NHS Trust, Charing Cross Hospital, London, United Kingdom, [3]Department of Urology, St George's Healthcare NHS Trust, Blackshaw Road, London, London, United Kingdom, [4]Department of Urology, Epsom, Epsom and St Helier, University Hospitals NHS Trust, Surrey, United Kingdom, [5]RM Partners, 5th Floor, Alliance House, 12 Caxton Street, London, United Kingdom

Introduction: The incentive to provide a rapid and streamlined diagnostic approach for suspected cancer is growing. We report the outcomes of a new 'one-stop' Rapid Access Prostate Imaging and Diagnosis (RAPID) pathway introduced across three hospitals. This pathway streamlines the standard diagnostic pathway into a single visit using MRI-triage and if required same-day transperineal targeted and systematic biopsy.

Patients and Methods: 837 patients were referred into the RAPID pathway between April 2017 and October 2018. Patients received an appointment for mpMRI and clinical review on the same day. A transperineal prostate biopsy (TP-Bx) was offered on the same day if the mpMRI score was 4 or 5. A score of 3 required a PSA density >/=0.12.

Results: The mean age was 65.3 (59.3 - 71.6). Mean PSA 9.0 (5.1–9.8) and mean time from referral to mpMRI +/− biopsy was 10.3 (7-13) days. 325 (38.8%) patients had a non-suspicious mpMRI and did not require TP-Bx. Out of the 383 proceeding to TP-Bx with a positive MRI, 68%



were diagnosed with prostate cancer and 81% of those had clinically significant disease. Of the patients with a negative biopsy, 52% had known causes of MRI false-positives (inflammation/atrophy). There was a 0.2% risk of urosepsis.

Conclusions: RAPID is a safe and effective pathway for diagnosis of suspected prostate cancer that shortens the interval from referral to diagnosis. Our MRI-triage approach allows 1 in 3 men to avoid an immediate biopsy whilst 8 in 10 men with cancer on biopsy had clinically significant disease.

P5-2 External validation of the PREDICT Prostate tool for prognostication in non-metastatic prostate cancer: A study in 69,206 men from Prostate Cancer data Base Sweden

Mr David Thurtle[1,5], Mr Ola Bratt[2], Prof Par Stattin[3], Prof Paul Pharoah[4], Mr Vincent Gnanapragasam[1,5]

[1]Academic Urology Group, University Of Cambridge, Cambridge, United Kingdom, [2]Dept of Urology, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, [3]Dept of Surgical Sciences, Uppsala University Hospital, Uppsala, Sweden, [4]Department of Oncology, University of Cambridge, Cambridge, United Kingdom, [5]Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom

Introduction and objectives: PREDICT Prostate is a novel prognostic model for non-metastatic prostate cancer(PCa). Derived from UK data, it uses baseline clinico-pathological and co-morbidity data to generate individualised survival estimates and model potential treatment benefit. Here we externally validated the model in a large independent dataset, and reviewed performance by treatment groups.

Materials and methods: Data on age, PSA, clinical T stage, grade group, biopsy involvement, primary treatment and comorbidity were retrieved from the nation-wide population-based PCa dataBase Sweden(PCBase). Men with non-metastatic PCa and PSA$<$100 ng/ml diagnosed between 2000 and 2010 were included.

15-year PCa-specific mortality(PCSM) and all-cause mortality (ACM) estimates were calculated using the PREDICT Prostate algorithm within a competing-risk model. Discrimination was assessed using Harrell's concordance(c)-index. Calibration was evaluated using cumulative follow-up until 15 years.

Results: 69,206 men were included with 13 years median follow-up. Overall discrimination of PREDICT was good with c-indices of 0.85(95%CI:0.85–0.86) for PCSM and 0.79(95%CI:0.79–0.79) for ACM. Calibration was excellent with 25,925 deaths predicted and 25,849 deaths observed. 20,384 men underwent conservative management and 32,842men received radical treatment. Within these treatment groups c-indices for 15-year PCSM were 0.81 and 0.78 respectively. C-indices were further improved at 0.88 for PCSM and 0.75 for ACM among men on 'active surveillance'. Differences between observed and predicted deaths were less than 3.5% in each treatment group.

Conclusion: This large external validation demonstrates PREDICT Prostate is a robust and generalisable model. It improves upon existing models by providing individualised estimates, adjusting for competing-risks and modelling treatment benefit.

P5-3 Understanding of prognosis in non-metastatic prostate cancer: a randomised comparative study of clinician estimates measured against the PREDICT Prostate model

Mr David Thurtle[1], Dr Valerie Jenkins[2], Prof Paul Pharoah[3], Mr Vincent Gnanapragasam[1,4]

[1]Academic Urology Group, University of Cambridge, Cambridge, UK, [2]Sussex Health Outcomes Research in Cancer (SHORE-C), Sussex University, Brighton, UK, [3]Department of Oncology, University of Cambridge, Cambridge, UK, [4]Department of Urology, Cambridge University Hospitals NHS Foundation Trust, Cambridge, UK

Introduction: Decision-making around treatment for non-metastatic prostate cancer (PCa) is notoriously complex. In this study we assessed clinicians' understanding of prognosis in PCa. Responses were compared to estimates from the multivariable prognostic model PREDICT Prostate, derived from UK survival data and validated in 3 PCa cohorts (including $>$80,000 men). We then reviewed the model's potential impact on treatment recommendations.

Materials and methods: Study materials were managed using Qualtrics research software (Utah, USA). PCa specialists' participation was primarily requested through professional mailing lists. Respondents were randomised to group A or B and presented with opposing hypothetical vignettes: 6 with clinical diagnostic information only and 6 with these plus PREDICT Prostate estimates. Comparisons were made between groups for clinician-estimated and model-predicted 15-year survival outcomes.

Results: 190 responses were received, 121(63.7%) and 32(16.8%) respondents were urologists and oncologists respectively. Only 19.3% reported using any survival model in their current routine practice.

Clinician estimates of 15-year PCa-mortality (PCM) exceeded PREDICT Prostate estimates in 92% of the case vignettes. Mean clinician estimates were 1.9-fold greater than PREDICT. Perceptions of overall survival benefit from radical treatment were over-optimistic in every vignette, with mean clinician estimates 5.4-fold greater than PREDICT estimates. Concomitantly viewing PREDICT Prostate estimates led to reduced likelihood of recom-

mending radical treatment in 9/12 vignettes, with reductions most evident in intermediate-risk cases.
Conclusion: Our study suggests clinicians' overestimate PCa-related mortality and the survival benefits of radical treatment. PREDICT Prostate provides individualised and contextualised prognostic information to help inform treatment decisions and may reduce overtreatment.

P5-4 Comparison of TRUS-biopsy to Transperineal Template Mapping biopsies stratified by MRI score within the PROMIS trial

Dr Catherine Lovegrove[1], Dr Louise Brown[2], Mr Saiful Miah[1], Mr Ahmed El-Shater Bosaily[3], Professor Richard Kaplan[2], Dr Alex Freeman[3], Dr Alex Kirkham[2], Mr Mathias Winkler[1], Mr Raj Persad[4], Mr Richard Hindley[5], Mr Robert Oldroyd[6], Mr Tim Dudderidge[7], Mr Derek Rosario[8], Mr Nick Burns-Cox[9], Mr Iqbal Shergill[10], Mr Simon Bott[11], Mr Alastair Henderson[12], Dr Chris Parker[13], Professor Mark Emberton[2], Professor Hashim Ahmed[14]
[1]Imperial College Healthcare NHS Trust, London, United Kingdom, [2]University College London, London, United Kingdom, [3]University College London Hospital, London, United Kingdom, [4]North Bristol NHS Trust, Bristol, United Kingdom, [5]Basingstoke and North Hampshire Hospital, Baskingstoke, United Kingdom, [6]Patient representative, Nottingham, United Kingdom, [7]Southampton General Hospital, Southampton, United Kingdom, [8]Royal Hallamshire Hospital, Sheffield, United Kingdom, [9]Musgrove Park Hospital, Taunton, United Kingdom, [10]Wrexham Maelor Hospital, Wrexham, United Kingdom, [11]Frimley Park Hospital, Farnborough, United Kingdom, [12]Maidstone and Tunbridge Wells NHS Trust, Maidstone, United Kingdom, [13]Royal Marsden Hospital, Sutton, United Kingdom, [14]Imperial College London, London, United Kingdom

Introduction: PROMIS provided level 1 evidence for pre-biopsy MP-MRI as triage investigation for detection of clinically significant prostate cancer (csPCa). We aimed to further elaborate on performance characteristics of transrectal ultrasound-guided systematic(TRUS) biopsies compared to transperineal template mapping(TPM) biopsy with a 5mm sampling frame.
Methods: Biopsy-naïve men advised to undergo prostate biopsy for elevated PSA and/or abnormal rectal examination underwent standardised MP-MRI, TPM-biopsy and TRUS-biopsy with tests conducted and reported blind to the results of the others. csPCa was primarily defined as detection of Gleason>/=4+3 or maximum cancer core length(MCCL)>/=6mm of any grade, and secondarily defined as Gleason>/=3+4 or any grade with MCCL>/=4mm. All cancer was also evaluated.
Results: Over 41 months, 740 men from 11 centres were recruited and 576 underwent all three tests. Of 150 men with MRI score 1-2, 8(5.3%) had any Gleason >/=3+4 disease. In 75 men in whom TRUS-biopsy showed Gleason 3+3 of any MCCL, 61/75(81%) had Gleason 3+4 and 8/75 (11%) Gleason 4+3; none of 75 (0%) had Gleason>/=4+5. For definition 1 csPCa, sensitivity remains broadly stable and low across all Likert scores (35% to 52%) (Table 1). For definition 2 csPCa and any cancer, TRUS-biopsy sensitivity increased with Likert score (Table 2). NPV was variable but in all cancer, thresholds showed decreasing trends with increasing Likert score (Tables 1–3).
Conclusions: TRUS-biopsy for MRI scores 1 and 2 confers 1 in 20 chance of yielding Gleason >/=3+4. Further, for any definition of csPCa, TRUS-biopsy had poor sensitivity and variably low negative predictive values across all MRI score groups.

P5-5 Man vs. Machine: Comparing Cognitive and Software-Assisted mpMRI-Ultrasound Fusion Targeted Biopsy

Christopher Khoo[1,2], David Eldred-Evans[1,2], Feargus Hosking-Jervis[1], Deepika Reddy[1,2], Mariana Bertoncelli Tanaka[1,2], Martin Connor[1,2], Taimur Shah[1,2], Saiful Miah[1,2], Mohamed Noureldin[1,2], Arnas Rakauskas[1,2], Shahzad Ahmad[4], Kaljit Kaur[4], Neha Sihra[3], Emma Cullen[1], Joahnnes Jaenicke[1], Marwa Jama[4], Andrew Brown[4], Dione Lother[4], Heather Bhola-Stewart[2], Joanne Sethi[2], Alexandra Forde[2], Amish Lakhani[2], Andrea Rockall[2], Nishat

Table 1. Diagnostic accuracy of TRUS-biopsy compared to TPM-biopsy across MRI Likert scores for definition 1 csPCa (any Gleason >/=4+3 or any grade of MCCL >/=6mm).

MRI Likert score (N)	Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)
All grades (576)	48% (42-55)	96% (94-98)	90% (83-94)	74% (69-78)
1+2 (158)	35% (14-62)	98% (94-100)	67% (30-93)	93% (87-96)
3 (163)	47% (30-65)	99% (96-100)	94% (71-100)	88% (81-93)
4 (120)	46% (34-58)	90% (78-98)	87% (71-96)	54% (43-65)
5 (135)	52% (43-62)	85% (65-96)	93% (84-98)	30% (20-42)

Table 2. Diagnostic accuracy of TRUS-biopsy compared to TPM-biopsy across MRI Likert scores for definition 2 csPCa (any Gleason >/=3+4 or any grade of MCCL >/=4mm.

MRI Likert score (N)	Sensitivity [95% CI]	Specificity [95% CI]	PPV [95% CI]	NPV [95% CI]
All grades (576)	60% [55-65]	98% [96-100]	98% [95-100]	65% [60-70]
1+2 (158)	30% [17-45]	100% [97-100]	100% [75-100]	79% [71-85]
3 (163)	51% [38-63]	98% [93-100]	95% [82-99]	73% [64-81]
4 (120)	60% [49-70]	96% [82-100]	98% [90-100]	42% [30-55]
5 (135)	76% [68-83]	89% [52-100]	99% [94-100]	21% [10-37]

Table 3. Diagnostic accuracy of TRUS-biopsy relative to TPM-biopsy across MRI Likert scores for presence of any cancer.

MRI Likert score (N)	Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)
All grades (576)	68% [63-72]	95% [90-98]	97% [94-99]	55% [49-61]
1+2 (103)	50% [38-62]	94% [87-98]	88% [74-96]	68% [59-76]
3 (197)	54% [44-64]	95% [87-99]	95% [85-99]	58% [48-67]
4 (132)	71% [62-79]	100% [75-100]	100% [95-100]	30% [17-45]
5 (144)	86% [79-92]	83% [36-100]	99% [95-100]	22% [7-44]

Bharwani[2], Siham Sudderuddin[2], Victoria Stewart[2], Andrew Smith[2], James Carton[2], Josephine Lloyd[2], Ethna Mannion[2], Suchita Joshi[5], Elizabeth Pegers[5], Kunju Harikrishnan[4], Kashif Burney[4], Nalin Khosla[4], Amy Davis[4], Pieter LeRoux[4], Tharani Nitkunan[4], Kathie Wong[4], Rami Issa[3], Chris Anderson[3], Martin Clark[2], Henry H. Tam[2], Manit Arya[1,2], David Hrouda[2], Stephen Gordon[4], Mathias Winkler[1,2], Hasan Qazi[3], Hashim U. Ahmed[1,2]

[1]Imperial Prostate, Department of Surgery and Cancer, Faculty of Medicine, Imperial College London, London, United Kingdom, [2]Imperial Urology, Imperial College Healthcare NHS Trust, Charing Cross Hospital, London, United Kingdom, [3]Department of Urology, St George's Healthcare NHS Trust, Blackshaw Road, London, United Kingdom, [4]Department of Urology, Epsom, Epsom and St Helier University Hospitals NHS Trust, United Kingdom, [5]RM Partners, 5th Floor, Alliance House, 12 Caxton Street, London, United Kingdom

Introduction: The clinical utility of software-assisted mpMRI-US fusion targeted biopsy is currently controversial considering capital investment. We compared the rates of prostate cancer detection using cognitive versus software-assisted image-fusion targeted biopsy.

Patients and Methods: Analysis of our prostate cancer diagnostics registry identified men who had undergone cognitive or image-fusion targeted biopsy for a PI-RADS v2 score of ⩾3. Diagnostic rates of clinically significant prostate cancer (any Gleason ⩾3+4), insignificant disease and benign histology were calculated for each approach and differences compared for statistical significance. Potential confounders were also evaluated.

Results: Between April 2017 and October 2018, 142 patients were biopsied cognitively and 194 with image-fusion software (Biopsee®). Baseline demographics were similar (table 1) with overall mean targeted cores of 6.9 for cognitive and 5.9 for image-fusion biopsies. Clinically significant prostate cancer was found in 48.6% and 54.6% for cognitive and image-fusion approaches respectively ($p>0.05$). Insignificant cancer was detected in 11.3% and 11.9% ($p>0.05$) and benign histology in 40.1% and 33.5% ($p>0.05$) respectively (table 2).

Conclusion: We found no statistically significant differences in overall cancer detection rates. There may have been clinically relevant differences in number of cores taken and clinically significant cancer detection both overall and by mpMRI PI-RADS v2 score. A prospective

Table 1. Patient Demographics.

		Mean	Interquartile Range
Age	**Cognitive**	66.2	12.8
	Image-Fusion	65.7	10.9
PSA	**Cognitive**	11.0	5.9
	Image-Fusion	10.5	4.9

Table 2. Biopsy Outcomes.

		P5	P4	P3 + PSAD ⩾ 0.12ng/ml/ml	Overall
No. Patients	**Cognitive**	54	78	10	142
	Image-Fusion	74	88	32	194
Mean Number of Cores Taken	**Cognitive**	7.0	6.6	8.0	6.9
	Image-Fusion	6.0	5.8	5.9	5.9
Diagnostic Rate of Clinically Significant Prostate Cancer	**Cognitive**	72.2% (39/54)	33.3% (26/78)	40% (4/10)	48.6% (69/142)
	Image-Fusion	81.1% (60/74)	43.2% (38/88)	25% (8/32)	54.6% (106/194)
	p-value	>0.05	>0.05	>0.05	>0.05
Diagnostic Rate of Clinically Insignificant Prostate Cancer	**Cognitive**	9.26% (5/54)	14.1% (11/78)	0% (0/10)	11.3% (16/142)
	Image-Fusion	8.11% (6/74)	14.8% (13/88)	12.5% (4/32)	11.9% (23/194)
	p-value	>0.05	>0.05	>0.05	>0.05
Diagnostic Rate of Benign Histology	**Cognitive**	18.5% (10/54)	52.6% (41/78)	60% (6/10)	40.1% (57/142)
	Image-Fusion	10.8% (8/74)	42% (37/88)	62.5% (20/32)	33.5% (65/194)
	p-value	>0.05	>0.05	>0.05	>0.05

appropriately powered randomised trial that overcomes residual confounders is planned.

P5-6 Safety of zero-antibiotic co-axial needle-guided transperineal prostate biopsy (TPB) under local anaesthesia - a prospective cohort study of 200 patients

Mr Hide Yamamoto[1], Dr Sukanya Goshi[1], Dr Meeran Naji[1], Dr Graham Russell[1], Dr Amit Goel[1], Mr Alastair Henderson[1]
[1]Maidstone And Tunbridge Wells NHS Trust, Maidstone, United Kingdom

Background: Evidence is lacking for the need of antibiotics in transperineal biopsy. We prospectively obtained patient-reported outcomes (PROMS) following outpatient-based LATP performed without antibiotics using a validated questionnaire within a cohort study setting.
Methods: Biopsy-naïve patients referred with suspected prostate cancer able to tolerate pre-biopsy magnetic resonance imaging (MRI) were included. Following skin prep and LA injection, a transducer-mounted needle guide and a perineal co-axial needle were used to take systematic and MRI-influenced target biopsies. Primary outcome of infection and sepsis rate and other PROMS were assessed using the PROBE study questionnaire (Rosario et al. BMJ 2012;344: d7894) on day 7.
Results: 200 patients were included. Questionnaire response rate was 84% with 100% follow up. No patient experienced sepsis, urinary infection, retention, received any antibiotics or admitted to hospital within 7 days following biopsy. 69% felt the procedure was associated with little or no immediate pain. 82% felt a repeat biopsy would pose little or no problem. The most frequent adverse event was haematuria (79%) followed by pain at biopsy site (53%). Cancer detection rate was 67% of which 41% were clinically significant.
Conclusion: LATP appears safe and well-tolerated in the outpatient environment. With rising quinolone resistance LATP may avoid use of antibiotics.

P5-7 What is the negative predictive value of multiparametric MRI in excluding clinically significant prostate cancer at biopsy? Results from 1000 pre-biopsy multiparametric MRIs

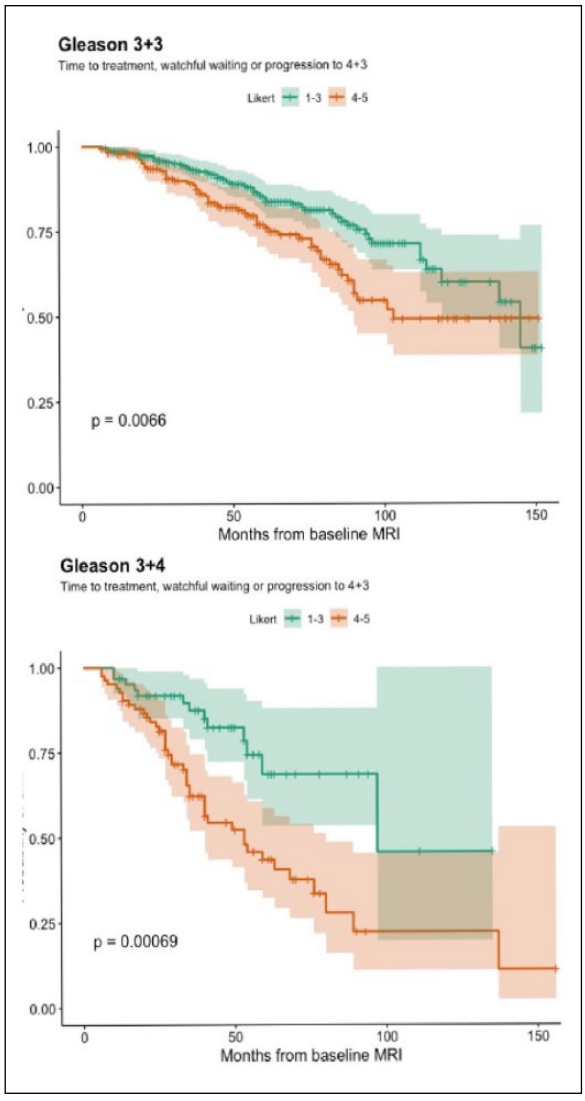
Miss Niyati Lobo[1], Mr Matthew Stanowski[2], Dr Iain Morrison[2], Mr Sashi Kommu[2], Mr Milan Thomas[2], Mr Edward Streeter[2], Mr Ben Eddy[2]
[1]Frimley Health NHS Foundation Trust, Camberley, United Kingdom, [2]Canterbury Centre for Robotic Urological Surgery, Canterbury, United Kingdom

Introduction: Pre-biopsy multiparametric MRI (mpMRI) is reported to have a negative predictive value (NPV) of 89% in prostate cancer diagnosis. We determined the NPV of mpMRI alone and in combination with PSA density (PSAD) for significant prostate cancer (sPCa) in men undergoing prostate biopsy at our institution.

Material and methods: We identified 1000 biopsy-naive patients undergoing 1.5T or 3T pre-biopsy mpMRI from October 2015 to September 2018. All scans were reported by 2 uro-radiologists using PIRADS v 2 with negative mpMRI defined as PIRADS <3. Men with negative mpMRI underwent a minimum of 12-core systematic transrectal ultrasound-guided biopsy. sPCa was defined as Gleason score $\geqslant 3+4$. The Mann-Whitney test, univariable and multivariable Cox regression models were performed for statistical analysis.

Results: Of 1000 patients, 44% (n=444) had negative mpMRI. Prostate cancer and sPCa was detected in 35% (n=155) and 15% (n=66), corresponding to an NPV of 65% and 85% respectively. Using a PSAD cut-off of 0.15 ng/ml/ml and 0.10 ng/ml/ml in combination with a negative mpMRI increased the NPV for sPCA to 89% and 91% respectively. Patients with sPCa had smaller prostate volumes ($p<0.001$) and higher PSAD ($p<0.001$) than non-sPCa patients. On univariate analysis, prostate volume ($p<0.001$) and increasing PSAD ($p<0.001$) were predictors for sPCa. On multivariable analyses, only PSA density was a predictor for sPCA.

Conclusion: A negative pre-biopsy mpMRI can reliably exclude significant prostate cancer when used in combination with a low PSA density. However, a small number of significant cancers will be missed.



P5-8 Visible disease at baseline accelerates time to exit from MRI-based active surveillance

Mr Vasilis Stavrinides[1,2], Dr Francesco Giganti[1,2], Mr Clement Orczyk[1,2], Prof Shonit Punwani[1,2], Dr Clare Allen[2], Dr Alex Kirkham[2], Dr Alex Freeman[2], Dr Hayley Whitaker[1], Prof Mark Emberton[1,2], Prof Caroline Moore[1,2]

[1]University College London, London, United Kingdom, [2]University College London Hospitals NHS Trust, London, United Kingdom

Introduction: In MRI-based surveillance, the significance of visible disease at baseline is undefined. We present outcomes from the UCLH AS cohort and investigate associations with baseline imaging.

Methods: Outcomes were collected for 647 men (Aug 2004 - Dec 2017; Gleason $3+3$ or low-volume $3+4$, PSA<20, baseline mpMRI, >6 months of follow up; mean age: 61.8; median PSA: 6.4). Start time was the date of first MRI. Exit was defined as any treatment, transition to watchful waiting and/or progression to Gleason $4+3$. Time-to-exit in men with a baseline Likert 1-3 (no lesion) versus those with Likert 4-5 (lesion) was compared.

Results: Median f/u was 53 m (IQR 31.5-76). Overall, 172 men were treated (44 prostatectomy, 83 focal, 12 hormones, 17 radiotherapy [hormones in 12], 3 brachytherapy) and 14 transitioned to WW. One patient was treated due to anxiety. Progression on biopsy was observed in 37 (GG $4+3$: 15 treated, 1 lost to f/u, 2 WW). Twenty-one men were lost to f/u, 36 discharged for PSA monitoring in the community and 5 died (1 prostate cancer-related). Time-to-AS exit was significantly different between patients with a lesion and those without. The difference persisted regardless of Gleason at diagnosis (log-rank test; $p=0.0066$ for $3+3$, $p=0.00069$ for $3+4$).

Conclusions: Men on AS with a Likert 4-5 at baseline have a distinct trajectory from those without a defined

lesion, regardless of cancer grade at diagnosis. This could reflect a divergence in the history of visible and non-visible disease, increased monitoring vigilance of defined lesions, or both.

P5-9 Using disease prognosis to guide inclusion criteria, stratify follow-up and standardise end-points in active surveillance for prostate cancer

Mr Vincent Gnanapragasam[1], Dr Tristan Barrett[2], Mr David Thurtle[1], Ms Vineetha Thankapannair[3], Professor Ola Bratt[4], Professor Par Stattin[5], Professor Ken Muir[6], Dr Artitaya Lophatananon[6]

[1]Academic Urology Group, University of Cambridge, Cambridge, United Kingdom, [2]Department of Radiology, University of Cambridge, Cambridge, United Kingdom, [3]Cambridge University Hospitals Trust, Dept. of Urology, UK, [4]Sahlgrenska Academy, University of Gothenburg, Dept. of Urology, Gothernburg, Sweden, [5]Uppsala University Hospital, Surgical Sciences, Uppsal, Sweden, [6]University of Manchester, Dept. of Population Health, Manchester, United Kingdom

Introduction: There is no consensus on the optimal active surveillance (AS) strategy or when surveillance should stop. We used disease prognosis to investigate an evidence base approach to AS.

Methods: We have reported the Cambridge Prognostics Groups (CPG), a 5-tiered model that uses PSA, Grade Group and stage at diagnosis to predict prostate cancer mortality (PCM). We applied the CPG model to a UK and Swedish prostate cancer cohort to compare PCM in treated and untreated men with CPG2 and CPG3 (comparable to AUA favourable-intermediate and unfavourable-intermediate risk) versus CPG1 (low-risk) disease. We next applied the CPG model to a contemporary AS cohort.

Results: The UK cohort comprised 3659 men (CPG1-1299, CPG2-1413, CPG3-947). 10-year cumulative PCM was 2.3% in CPG1, 1.5% and 3.5% in treated/un-treated CPG2 and 1.9% and 8.6% in treated/un-treated CPG3. The Swedish cohort comprised 27,942 men (CPG1-15,477, CPG2-8495, CPG3-3970). 10-year PCM rate was 1.0% in CPG1, 2.2% and 2.7% in treated vs untreated CPG2 and 6.1% and 12.5% in treated vs untreated CPG3. We therefore tested progression to CPG3 as an AS endpoint. In a contemporary MRI-imaging characterised AS cohort (n=133) only 6% progressed to CPG3 over 3.5y median follow-up. PSA density $\geqslant$0.15 and CPG2 at diagnosis were predictors of progression with 21% of men with both attributes, 8% with either one and 1% with neither progressing.

Conclusion: A definite poorer prognosis without treatment (CPG3) is an unambiguous reason for AS discontinuation. Using this, we have identified diagnostic risk-factors of progression and propose a stratified surveillance strategy.

P5-10 Unfavourable final pathology rates in patients having radical prostatectomy after a period of active surveillance in the British Association of Urological Surgeons radical prostatectomy database

Mr Kevin Gallagher[1], Miss Sarah Fowler[2], Mr. Jim Adshead[5], Mr. Krishna Narahari[4], Mr. Ben Challacombe[3], Professor S McNeill[1],. On behalf of the BAUS Section of Oncology[2]

[1]Western General Hospital, Edinburgh, United Kingdom, [2]British Association of Urological Surgeons, [3]Guy's and Thomas' Hospitals, London, [4]Univsersity Hospital of Wales, Cardiff, Wales, [5]The Lister Hospital, Stevenage,

Aim: To determine the rate of unfavourable disease at radical prostatectomy (RP) in patients previously on active surveillance (AS) and in those who had primary RP for low risk prostate cancer in the BAUS audit database.

Methods: Patients (2014-2017) were included if they had RP following a period of AS, or if they had RP as primary therapy for biopsy Gleason 3+3, PSA $<$10 cancer. Unfavourable pathology was defined as: all $>$/= pT3a or any Gleason $>$/= 8 or pT2 Gleason 7 with positive margin.

Results: 6309/25544 records met the inclusion criteria. 509 had incomplete data and were excluded, leaving 3240 previous AS and 2561 primary RP. Unfavourable pathology was 1478/3240 (45.6%) with previous AS and 849/2561 (33.2%) for primary RP (Table 1). The rate of unfavourable pathology trended to increase from 2014 to 2017 in patients with previous AS (from 42.4% to 47.2%, p=0.06) and decrease in those with primary RP (from 33.3% to 28.8%, p=0.10). The annual proportion of patients with previous AS vs primary RP for low risk disease increased 2014 to 2017 from 48.8% to 66.9%. We caution that the previous AS and primary RP groups are not directly comparable.

Conclusion: There is a significant rate of unfavourable pathology in patients who come to RP after a period of AS. Complacency in low risk prostate cancer should be avoided, AS should involve close monitoring and agreed thresholds for intervention. Unfavourable pathology rates at RP should be monitored.

P5-11 Variation in positive surgical margin status following radical prostatectomy for pT2 prostate cancer

Mr Wei Shen Tan[1,2,3], Dr Marieke Krimphove[1], Dr Alexander Cole[1], Dr Sebastian Berg[1], Ms

Table 1. RP pathology findings.

	Previous active surveillance	Primary RP for low risk prostate cancer
Age at operation (mean 95% CI)	64.22 (63.95-64.49)	60.67 (60.35-60.98)
PSA at operation (mean 95% CI)	8.98 (8.80–9.12)	5.95 (5.87–6.03)
Composite "unfavourable pathology"	1478/3240 (45.6)	849/2561 (33.2)
Any T stage > 3a (excluding GL 3+3, T3a) *	1070/3207 (33.4)	542/2520 (21.5)
T3b*	151/3197 (4.7)	40/2514 (1.6)
T4 *	7/3197 (0.22)	4/2514 (0.16)
Gleason > 4+4 (any)*	181/3240 (5.6)	31/2561 (1.2)
pT2 Gleason 7 with positive margin*	248/3207 (7.7)	163/2520 (6.5)
Gleason 3+3 (any)	486/3240 (15.0)	1082/2561 (33.4)
Gleason 3+4 (any)	2024/3240 (62.5)	1307/2561 (51.0)
Gleason 4+3 (any)	484/3240 (14.9)	101/2561 (3.9)
Positive margin (any)	802/3240 (24.8)	565/2561 (22.1)

*Patients meeting any one of these criteria were included in "unfavourable pathology" (with each patient only included once if more than one unfavourable criterion was met).

Maya Marchese[1], Prof Stuart Lipsitz[1], Dr Bjorn Loppenberg[1], Dr Junaid Nabi[1], Dr Firas Abdollah[4], Prof Toni Choueiri[5], Prof Adam Kibel[1], Mr Prasanna Sooriakumaran[2], Dr Quoc-Dien Trinh[1,5]

[1]Brigham and Women's Hospital, Boston, USA, [2]University College London, London, UK, [3]Imperial College Healthcare, London, UK, [4]Henry Ford Hospital, Detroit, USA, [5]Dana-Farber Cancer Center, Boston, USA

Background: Positive surgical margin (PSM) following radical prostatectomy for pT2 prostate cancer is considered a surgical quality metric. We evaluated patient, institutional, surgical approach and cancer-specific factors associated with PSM variability.

Methods: A total of 45,426 men from 1,152 institutions with pT2 prostate cancer following radical prostatectomy were identified using the National Cancer Database (2010-2015). Patient demographics and comorbidity, socioeconomic status, and institutional information, cancer-specific variables and type of surgical approach were extracted. Multilevel hierarchical mixed effects logistic regression model was performed to determine the factors associated with a risk of PSM and their contribution to a PSM status.

Results: Median PSM rate of 8.5% (IQR: 5.2-13.0%, range: 0-100%). Robotic (OR: 0.90, 95% CI: 0.83–0.99) and laparoscopic (OR: 0.74, 95% CI: 0.64–0.90) surgical approach, academic institution (OR: 0.87, 95% CI: 0.76–1.00) and high institution surgical volume (>297 cases [OR: 0.83, 95% CI: 0.70–0.99) were independently associated with a lower PSM. Black men (OR: 1.13, 95% CI: 1.01–1.26) and adverse cancer specific features (PSA 10-20, PSA >20, cT3 stage, Gleason 7, 8, 9-10; all p>0.01) were independently associated with a higher PSM. Multilevel hierarchical logistic regression model accounted for 24.9% of PSM variation. Patient-specific, institution-specific and cancer-specific factors accounted for 2.3%, 3.9% and 15.6% of the variation.

Conclusion: Cancer-specific factors account for 15.2% of PSM variation with the remaining 84.8% of PSM variation due to patient, institution and other factors. Non-cancer-specific factors represent potentially addressable factors

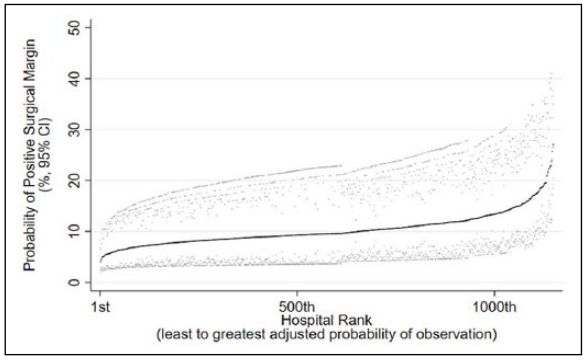


Figure 1. Variation in positive surgical margins frequency adjusted for patient demographics, comorbidity, socioeconomic, geographical, hospital and cancer-specific factors.

which are important for policy makers in their efforts to improve patient outcome.

P5-12 Retzius-sparing versus Standard Robotic-Assisted Radical Prostatectomy: A Comparative Analysis of Functional and Oncological Outcomes in 500 patients

Mr Venkata Kusuma[1], Dr Rishi Vasanthan[1], Dr Krishan Parekh[1], Mr Samarth Chopra[1], Mr. Pavlos Pavlakis[1], Mr Dimitrios Moschonas[1], Mr. Krishnaji Pandurang Patil[1], Mr. Matthew Perry[1], Mr. Christopher Eden[1]
[1]Royal Surrey County Hospital, Guildford, United Kingdom

Introduction and Objectives: There is a growing body of evidence showing the superiority of Retzius sparing approach (RS-RARP) in terms of early continence without compromising oncological outcomes. The aim of this prospective study was to compare and analyse the short term functional and oncological outcomes amongst men undergoing RARP for localised prostate cancer using either RS-RARP or standard RARP (anterior approach) technique.
Methods: Between March 2017 and April 2018, a total of 507 men underwent Robotic assisted radical prostatectomy in a tertiary referral centre. Of these, 241 patients had RS-RARP and 243 underwent a standard RARP. Patients were stratified as low, intermediate and high-risk using D'Amico classification. Post-operative complications, functional and oncological outcomes were compared. Univariate and multivariate logistic regression were used to assess the predictors of these outcomes.
Results: There was no significant difference between the two groups with regards to age, prostate size stage and PSA. Table 1 shows the multivariate analysis, comparing different pre-operative factors (patient risk and stage), biopsy type and surgical approaches on positive margin outcomes whereas table 2 summarises analysis of functional outcomes in 6 weeks and 3 months. The operative time was significantly shorter in the RS-RARP approach.
Conclusion: Our analysis shows that Retzius sparing approach achieves superior continence at 6 weeks without affecting short-term cancer control indicators such as positive margins. However, at three months, there was no difference noted in pad free rate. Longer follow-up is necessary to assess the impact of RS-RARP on cancer control.

Table 1.

	OR	LCI	UCI	p value
Retzius vs RARP	1.4	0.4	5.1	0.6
Right.NS 1 vs 0	0.7	0.2	2.8	0.641
Right.NS 2 vs 0	0.3	0.1	1.4	0.144
Left.NS 1 vs 0	0.4	0.1	1.4	0.152
Left.NS 2 vs 0	0.3	0.1	0.9	0.036
Intermediate vs High	2.3	0.7	9.0	0.195
Low vs High	3.2	0.4	28.1	0.286
TRUS vs Template	1.4	0.5	3.9	0.48
pT3 vs pT1&2	3.3	0.7	23.9	0.162

Table 2.

6w continence	OR	LCI	UCI	p value
Age	1.1	1.0	1.1	0.144
BMI	1.1	1.0	1.2	0.124
Bl. loss	1.0	1.0	1.0	0.535
Op time	1.0	1.0	1.0	0.042
Left.NS 1 vs 0	0.2	0.0	0.6	<0.01
Left.NS 2 vs 0	0.3	0.1	0.9	0.03
Right.NS 1 vs 0	2.4	0.5	12.0	0.261
Right.NS 2 vs 0	2.7	0.7	13.1	0.178
Retzius vs RARP	0.1	0.0	0.2	<0.01
3m continence	**OR**	**LCI**	**UCI**	**p value**
Age	1.0	0.9	1.1	0.809
BMI	1.1	0.9	1.4	0.16
Bl. loss	1.0	1.0	1.0	0.527
Op. time	1.0	1.0	1.1	<0.01
Left.NS 1 vs 0	0.1	0.0	0.6	0.026
Left.NS 2 vs 0	0.3	0.1	1.4	0.142
Right.NS 1 vs 0	1.9	0.2	19.1	0.547
Right.NS 2 vs 0	2.8	0.4	25.1	0.324
Retzius vs RARP	1.0	0.2	5.4	0.99

P5-13 Surgery for pathological T3a, T3b and lymph node positive prostate cancer: surgical, functional and oncological outcomes from a regional prostate cancer service

Mr Niall Gilliland[1], Dr Sarath Vennam[4], Mr Matthew Crockett[2], Mr Julian Peacock[3], Mr Anthony Koupparis[1], Mr Edward Rowe[1], Mr Jonathan Aning[1], Dr Jon Oxley[1], Miss Sam Kearley[1]
[1]Bristol Urological Institute, Bristol, United Kingdom,
[2]Cheltenham General Hospital, Cheltenham, United Kingdom,

[3]Torbay Hospital, Torquay, United Kingdom, [4]Royal Cornwall Hospital, Cornwall, United Kingdom

Introduction: Surgery is increasingly employed as a treatment option for patients with high-risk prostate cancer. The present large UK contemporary study reports on the surgical, functional and oncological outcomes following surgery in these patients.
Patients and Methods: Patients with pathological T3a, T3b and N1 disease were extracted from our prospectively updated institutional database. Data includes demographics, preoperative cancer parameters, short- and long-term complications and functional results. Details of biochemical recurrence (BCR), type and oncological outcome of salvage treatments, cancer-specific (CSS) and overall survival (OS) was also obtained. Multivariate analysis was performed to determine factors for BCR post-surgery and salvage treatment.
Results: 494 patients with complete data were obtained from with a median follow up of 4 years (range 2-10). 57%, 29% and 13% were staged as T3a, T3b and N1 respectively. Average inpatient stay was 1.7 days and overall complication rate was 11.36%. Complete continence or minor stress was seen in 82.6% and 89% reported significant ED. CSS and OS were 98.78% and 97.17 respectively. BCR was 36.71% with 82% and 39% receiving one or more than one salvage treatments respectively. Multivariate analyses demonstrate pathological stage is a predictor of BCR and immediate BCR is a predictor of failure of subsequent local salvage treatment ($p<0.001$).
Conclusions: Surgery is associated with encouraging surgical and functional outcomes, CSS and OS rates in these patients. Pathological stage is a significant predictor for BCR. The present analysis questions the effectiveness of further local salvage treatments in patients with an immediate BCR post operatively.

P5-14 High intensity focused ultrasound (HIFU) for prostate cancer: a national cohort study focusing on long term stricture and fistula

Dr Amandeep Dosanjh[1,2], Dr Philip Harvey[2], Mr Simon Baldwin[1], Miss Harriet Mintz[3], Miss Felicity Evison[1], Dr Nigel Trudgill[2], Professor Nicholas James[1,2], Mr Prasanna Sooriakumaran[4], Mr Prashant Patel[1,2]
[1]Department of Health Informatics, University Hospitals Birmingham, Birmingham, United Kingdom, [2]Institute of Cancer and Genomic Sciences, University of Birmingham, Birmingham, United Kingdom, [3]University of Warwick Medical School, Warwick, United Kingdom, [4]University College Hospital London, London, United Kingdom

Introduction: Long term data for HIFU outcomes is lacking; therefore, NICE currently only recommends its use in "the context of controlled clinical trials". The aim of this study is to evaluate the risks of stricture and fistula.
Materials and methods: HIFU treatments for prostate cancer between April 2007 and March 2018 were identified in Hospital Episode Statistics (HES).
Results: 2320 HIFU treatments for 1990 patients were identified. 28/50 (56%) centres performed less than 6 procedures over the study period. 1513, 194 and 613 procedures were performed by the largest volume, second largest and remaining 48 centres respectively. Less than 850 patients have been included in published clinical trials since 2007. Median age was 67 (IQR 61-72). There were no co-morbidities for 82.9% occurrences. 1742 patients, with $\geqslant$1-year follow-up, were included in the analysis. HIFU as salvage therapy was given in 3.4% cases. Salvage prostatectomy (RP) and radiotherapy (RT) was administered in 5.9% and 11.9% patients respectively (18% total). For the pure HIFU cohort, rates of stricture and urinary fistula were 10.7% and 1.3% respectively.
Conclusion: HIFU as an intervention may potentially allow a longer period of what would have been active surveillance. Appropriate counselling of patients must include the risks of treatment, ideally in a clinical trial setting as recommended by NICE and the EAU, given we have observed over 50% of patients treated with HIFU in England have been outside of a published trial.

P5-15 Is there a case for centralisation of artificial urinary sphincters (AUS) and slings for post-prostatectomy urinary incontinence?

Dr Amandeep Dosanjh[1,2], Mr Simon Baldwin[1], Miss Jemma Mytton[1,2], Dr Dominic King[2], Dr Nigel Trudgill[2], Mr Mohammed Belal[3], Mr Prashant Patel[2,3]
[1]Health Informatics, University Hospitals Birmingham, Birmingham, United Kingdom, [2]Institute of Cancer and Genomic Sciences, University of Birmingham, Birmingham, United Kingdom, [3]Urology, University Hospitals Birmingham,

Introduction: Stress urinary incontinence (SUI) to some degree following radical prostatectomy (RP) is almost inevitable; if conservative measures fail surgical management with an AUS or a trans-obturator sling is indicated. This study aims to consider the provision of post-RP continence surgery in England.
Methods: This is a non-comparative retrospective study of AUS and slings using HES data following RP, between January 2010 and March 2018.
Results: 1414 patients received index AUS, 10.3% of which had prior radiotherapy. The sling cohort contained 816 patients; 6.7% received prior radiotherapy. Whilst the numbers of AUS implanted has increased each year, male slings peaked in 2014/2015. AUS redo/removal was performed in

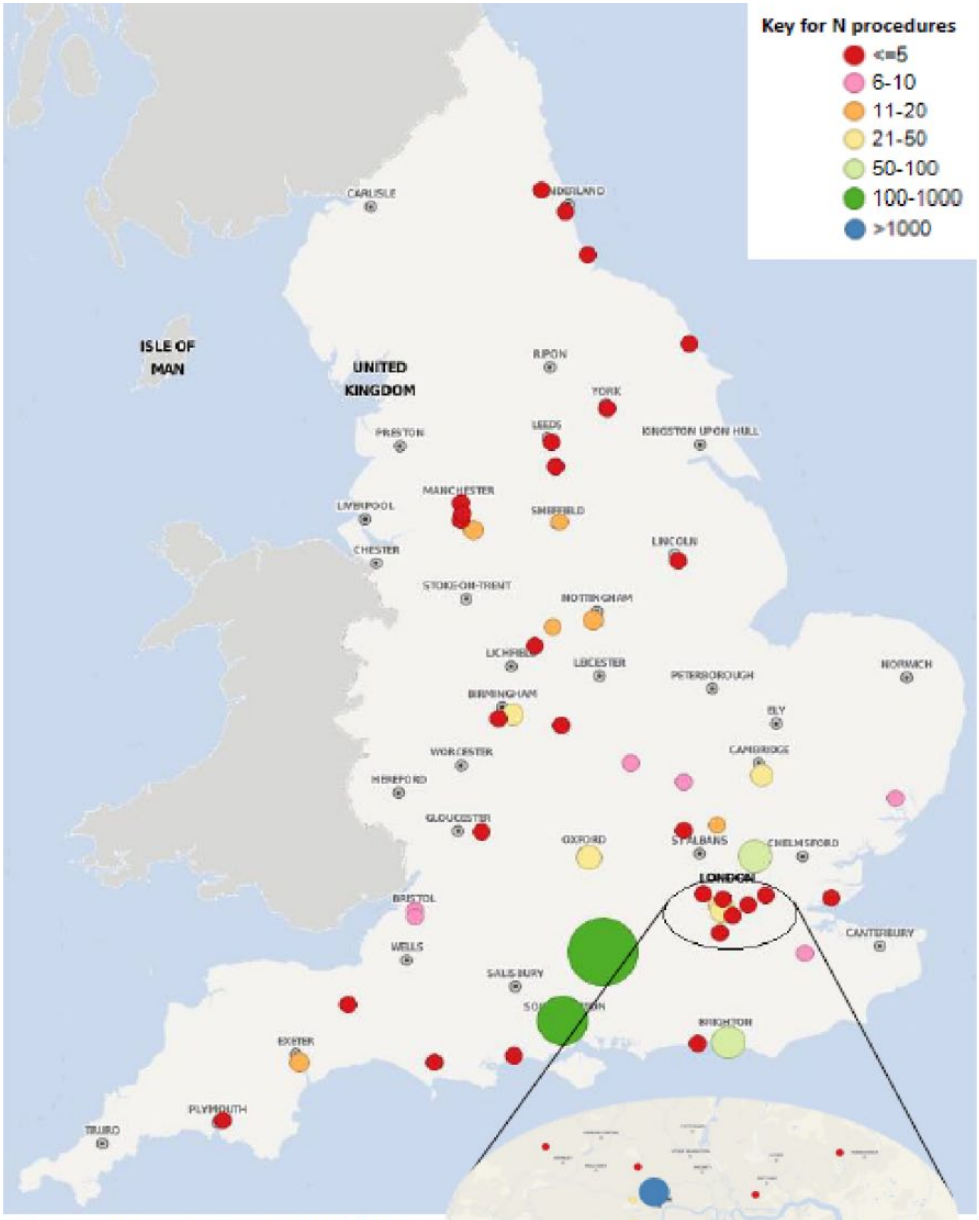
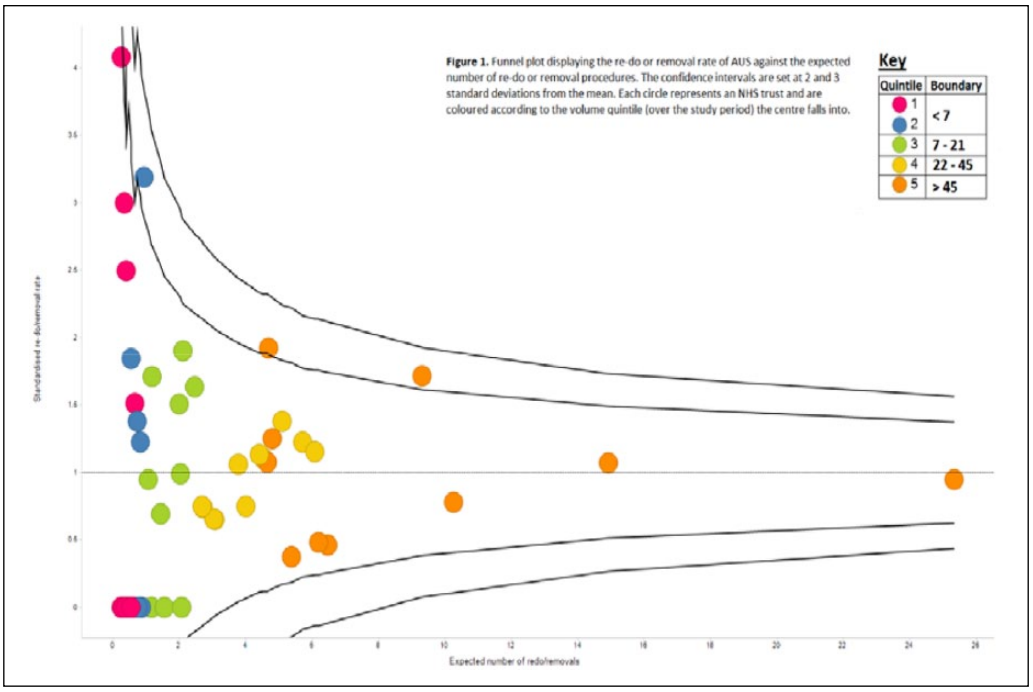


Figure 1. Map showing all NHS HIFU procedures over the study period. Trusts are mapped to their HQ. Size and colour indicated the total number of procedures over the study period.

11.2% patients; 7.7% had a second AUS. Prior sling conferred no increased risk of redo/removal. Patients in high volume centres were less likely to require redo/removal (HR0.24 p =0.020 95%CI 0.07–0.80). 12.0% patients with a sling progressed to AUS and 1.3% had a second sling. Patients with previous radiotherapy were more likely to require a second operation (HR 2.19 p=0.029 95%CI 1.08–4.42). Emergency readmissions within 30 days of index operation were 4.4% and 8.1% fewer in high volume centres, for AUS and slings respectively. Median time to initial continence surgery from RP was 2.8 years. Increased time from RP conferred no reduced risk of redo surgery. 18.4% and 33.3% of centres performed $<$ 6 procedures in the study period, for AUS and sling respectively.



Conclusion: Centres performing more procedures have fewer re-operations and re-admissions than low volume centres. Centralisation may improve surgical outcomes.

ePoster Session 6: History of Urology Tuesday 25 June 11:45-12:45 Boisdale Chairs: Jonathan Goddard, Priya Kumar & Conor Mosli Lynch

P6-1 'Tableau de l'Opération de la Taille' – The Original Urology Theatre Music

Miss Maria Harrington-Vogt[1], Mr Raghu Devarajan[1], Mr Iain Wharton[1]
[1]University Hospital of Coventry & Warwickshire, Coventry, United Kingdom

The original "urology theatre music" dates back to 1725 when Marin Marais, a French composer, court musician to Louis XIV and virtuoso viol player, depicted in music the traumatising perineal lithotomy that he had endured, at 64 years of age, to remove his bladder calculus. Marais (1656-1728) composed a piece, for viol, called 'Tableau de l'opération de la taille' ('Description of a lithotomy').

The composition lasted just over 3minutes and annotations on the score demonstrated that he described the operation in fourteen stages from the perspective of the patient (Table 1). Predictably the piece began with a slow

Table 1. Score Annotation of Patient's Experience in 'Tableau de l'Opération de la Taille'.

Stage	Patient's Experience
1	The sight of the instruments
2	Fear instilled
3	Bracing oneself for procedure and approach to operating table
4	Climbing onto the table
5	Climbing off again
6	Reconsideration of operation
7	Allowing silk restraints to be tied around arms and legs
8	Pain of Incision
9	Introduction of forceps
10	Extraction of stone
11	Faltering of one's voice
12	Blood flowing
13	Silk restraints untied
14	Transfer to bed

sombre section that depicted the apprehension, and agitation of the patient as well as the mounting tension of the operation and built up to the climactic extraction of the stone. Its musical portrayal is arguably as vivid as Samuel Pepys own diary account.
The lithotomy was clearly performed without anaesthesia, and from the annotation it is likely that Marais underwent a lateral lithotomy via a left lateral perineal incision. The operation was introduced in Paris in the early 18thcentury by Jacques Beaulieu(Frère Jacques;1651-1714) and modified by John Jacob Rau(1668-1709). Due to Marais' association with the royal court it is likely that his procedure was performed by a member of the Collot family, court surgeons who became so synonymous with the operation that they were simply called 'the lithotomists'.
Interestingly, Marais' composition was published in his 5thbook of Pièces de viole and was followed by a contrastingly lively piece entitled 'Les Relevailles', which celebrated his recovery.

P6-2 Martius flap: A History

Mr Lahiru Siriwardena[1], Mr Iain Wharton[1]
[1]University Hospital of Conventry And Warwickshire, Coventry, United Kingdom

The closure of fistulas must follow the principles of fistula repair without exception. To further improve the chances of a favourable outcome, the Martius flap was created as an adjunct to genitourinary and rectovaginal fistula repair.
The eponymous flap was first described in 1928 by German professor of gynaecology, Heinrich Martius (1885 – 1965) who repaired a urethrovaginal fistula by using a flap of bulbocavernous muscle as a substitution for the damaged urethral sphincter. Martius, who faced prejudice during the Third Reich due to his Jewish ancestry, published his work in three articles and several textbooks.
Over time, the flap was modified by others to include fat from the labia majora. This modification was adopted by Wilfred Shaw in 1949 to treat vesicovaginal fistulas and stress urinary incontinence. From a series of seven cases, Shaw ultimately concluded that although successful in treating fistulas the flap had a limited role in incontinence treatment.
Further changes came in 1990 when Elkins et al. used labial fibro-adipose flaps without bulbocavernous muscle for the management of complex fistulas. By excluding muscle, the incidence of haemorrhage was greatly improved and despite the flap's differences to the original, it is this fibro-adipose flap that is commonly referred to as the modern 'Martius flap'.
Now widely accepted and adopted by many, the Martius flap, since its inception and development through the decades, has remained an excellent addition to primary fistula repair that leaves minimal functional or cosmetic deficit.

P6-3 The Evolution and Development of the Bladder Evacuator

Miss Tara Sibartie, Mr Iain Wharton
[1]University Hospital of Coventry And Warwickshire, Coventry, United Kingdom

In 1824, Civiale performed the first lithotrity. Despite taking minutes subsequent sessions were required to remove the fragments. Peers became content to let patients void the debris, but it was apparent that not all fragments passed, and the residue served as nidus for new stones. Heurteloup (1793-1864) proposed that all debris should be removed at the primary procedure, but syringe irrigation through a metal-catheter proved insufficient.
In 1846, Crampton developed his aspirator; a water-filled glass-reservoir attached to an evacuating-catheter. The Clover aspirator (1865) followed, featuring a glass-reservoir attached to an India-rubber bulb. However, for both efficacy was poor.
With the widespread introduction of Ether anesthesia and knowledge on urethral calibre (Otis;1825-1900) Bigelow introduced his 'litholapaxy' procedure (1876); stone crushing with immediate fragment evacuation in one sitting. The evacuator featured a large-calibre catheter attached to an India-rubber bulb with glass trap beneath to catch the fragments.
Attention then focussed on techniques to prevent aspirated debris returning to the bladder. Thompson placed an internal-valve between the evacuating-catheter and glass receiver (1884). Whilst Freyer, like Bigelow, placed a glass-reservoir beneath the Indian-rubber bulb (1885).
Evolution then stagnated until Alcock entrusted his resident with the task of improving the evacuator so that it was compatible with cystoscopes and could safely extract prostate chippings, tumour and clot. Ellik developed the familiar hour-glass reservoir with red-rubber bulb (1937) which remained a mainstay until the 1990s.
Single-use plastic evacuators then emerged with flap-valves and filters to permit more efficient evacuation. These developments cemented the bladder evacuator as an essential component of the endourologist's armamentarium.

P6-4 A cure for Neurological ills! Circumcision and Dr Lewis a Sayre

Dr Samuel Shilleto, Mr John Calleary[1], Mr Jacob Cherian[1], Mr Andreas Bourdoumis[1]
[1]North Manchester General Hospital, Manchester, United Kingdom

Methods: Circumcision has been practised for millennia. In 1865 a UK paper linked circumcision with improvement in neurological conditions. This paper did not alter circumcision practise. In the USA, the experience was radically different and the reason for this was Dr Sayre.

Online search engines were used to identify significant trends in circumcision as practised in the western world and individuals leading such changes. The sentinel figure was Dr Sayre (1820-1900).

Results: He qualified in 1842 in Lexington Virginia and immediately appointed as a Surgeon. In 1861 he co-founded Bellevue Hospital in New York and became Professor of Orthopaedics (first in USA). He was hugely influential in Orthopaedics and Public Health. He led the New York Academy of Medicine and by 1866 was vice-president of the American Medical Association.

This pre-eminence placed him in a position to dramatically influence circumcision. The catalyst was James Marion Sims. In early 1870, Dr Sims was asked to review a boy with inability to walk (? limb contractures). Dr Sayre diagnosed muscle paralysis but as a significant phimosis was the only pathology he performed a circumcision. A dramatic response led him to champion circumcision for neurological disease. This he did zealously until his death.

After his death doubt arose as to the benefits of circumcision in non-urological disease. However, perceived public health benefits led to its embedding into US culture.

Conclusion: Dr Sayre has been described as a founding father of US Orthopaedics. He could equally be labelled as the patron saint of Circumcision.

P6-5 Penile Transplantation: The Long and Short of It

Dr Ines Reis[1], Miss Roxani Georgiou[1], Miss Niyati Lobo[1]

[1]Frimley Health NHS Foundation Trust, Camberley, United Kingdom

Introduction: Traumatic or iatrogenic penile loss has serious physical and emotional consequences for patients and is typically managed with free flap phalloplasty. However, advances in composite tissue allotransplantation have lead to the development of penile transplantation as an alternative approach.

Material and Methods: A comprehensive literature search relating to the history of penile transplantation was undertaken.

Results: Penile transplantation was first attempted in China in 2006 in a 44-year old man with traumatic penile amputation. Although technically successful, the patient underwent removal of the graft 2 weeks later due to psychological distress. Andre van der Merwe at Stellenbosch University in South Africa is credited with performing the world's first successful penile transplant in 2014. The patient, who had suffered partial loss of his penis from complications of a circumcision, was able to impregnate his partner within a year post-transplantation. In 2017, the unit performed a second transplant, making it the first centre to successfully perform this procedure twice. In the same year, surgeons at Massachusetts General Hospital in Boston transplanted a 64-year old man who had undergone a penectomy for penile cancer. A year later, the first total penile and scrotum transplant was performed at Johns Hopkins on a combat victim with severe genitourinary trauma from a blast injury.

Conclusion: Although penile transplantation is still in its infancy, encouraging short-term outcomes have been reported in recipients. Nevertheless, long-term results are awaited, and consensus is needed regarding ethical issues surrounding this novel procedure.

P6-6 Rontgen Rays and Renal Calculi: Exploring the British Pioneers of Urological Imaging

Mr Gavin Gordon[1]

[1]Newcastle University, Newcastle-Upon-Tyne, United Kingdom

Introduction: Kidney stones were one of the first pathologies investigated by James McIntyre, the Glaswegian credited as one of the early pioneers of radiology. The work of McIntyre is widely recorded and discussed in historical literature. Although calculi composed a relatively minor proportion of his study, his recognition of the potential for the modality inspired others. This research aims to extend understanding of early renal imaging beyond McIntyre.

Methods: Primary sources from 1896-7 including McIntyre's original report and research from urologists James Swain and Henry Morris form the basis of this study. This historical research was directed and informed by an appropriate review of the secondary literature, namely the History of Urology (Lewis et al., 1933) and Urolithiasis: A Comprehensive History (Moran, 2013.)

Results: When initial cadaveric investigations proved promising, urologists quickly utilised imaging for clinical application. Swain is often overlooked in the historical discourse. However, his comprehensive findings on the topic retains relevance even to the modern practitioner. His work, backed by Morris, detailed the suitability of imaging for varying types of stone, the clinical indication for imaging and the potential for the therapeutic use of x-rays.

Conclusions: Readily adopted by urologists, x-ray imaging is difficult to attribute to just one pioneer. Multiple urologists rapidly appreciated its utility and quickly adopted a consensus position. Swain's and Morris' original imaging will be reproduced in poster form for the conference audience. Early urological x-ray imaging provides excellent ground for further historical research, articles and biographies.

P6-7 A safer alternative to the 'High Operation' for treating bladder stones in women: the experience of Thomas Molyneux (1661-1733)

Mr Kevin Murtagh[1], Mr Jonathan Goddard[1]
[1]Leicester General Hospital, Leicester, United Kingdom

Through early modern history, many techniques were developed to deal with bladder stones with the transperineal approach thought the most effective. The suprapubic approach, or 'High Operation', was mostly avoided due to its high morbidity and mortality.

The High Operation's dangers lead many to explore alternatives for bladder stone removal. Thomas Molyneux (1661-1733), Dubliner, esteemed academic, politician, co-founder of the Dublin Philosophical Society and Royal Society fellow was one such advocate of an alternative approach in females. He appreciated that while females are less frequently affected than their male equivalents, their shorter urethras make dilatation and stone extraction an option. Molyneux's experiences in dealing with bladder stones were published in the Philosophical Transactions of 1698. This, the journal of the Royal Society was am important organ to voice the latest scientific and medical opinions of the time. Here he proposed that "extraction of the stone, by gradual dilatation of the urethra, without any manner of section, as the most safe and easy way, for freeing those of the female sex from the stone in the bladder". He details his own encounters with the procedure from first reading about it in Traite Complet des Operations de Chirurgie (published by Monsieur de la Vauguion in Paris in 1696), to ultimately the removal of stones of "extraordinary bigness" from the bladders of young girls and women in Dublin.

We look at this theory of urethral stone extraction, as described by Molyneux the C17th Gentleman Scientist, where it originated and how it influenced future techniques.

P6-8 Crossing the perineum: history of transperineal prostate biopsy

Mr Martin J. Connor[1], Mr Saiful Miah[1], Mr David Eldred-Evans[1], Mr Mathias Winkler[1], Professor Hashim U. Ahmed[1]
[1]Imperial Prostate, Department of Surgery and Cancer, Imperial College London, London, United Kingdom

Introduction: Prostate biopsy focus has shifted from a transrectal to transperineal approach following recent high-level evidence supporting favourable diagnostic yield and lower infection rate. Historically, the move across the perineum has not been a one-way affair with transperineal biopsies (TPB) predating popular transrectal ultrasound guided biopsy (TRUS). We chart the history of TPB, reflecting upon key urologists involved in TPB development.

Materials and Methods: Non-systematic search of the literature of electronic journals and books was performed relating to the history of TPB.

Results: (1) Young's invasive open TPB was documented in 1926 using a transverse incision between the ischial tuberosities, 2 cm above the anus. Ischiorectal fossa was opened and dissected to prostatic capsule. Diagnosis was confirmed by fresh section, with many patients proceeding to prostatectomy. High rates of urinary incontinence (UI) and long post-operative stay limited uptake. (2) Barringer described a less invasive, but inaccurate (50%), punch TPB using a screw tip needle technique in 1922. (3) Fearguson modified this using repeated aspiration via an 18-gauge needle. Unfortunately, tissue was often limited and plagued by loss of architecture (4) Kaufman successfully described TPB under digital-guidance in 1954. Introducing a needle 1 cm above the anus over site of disease, following the point to the prostatic nodule. Digital-needle control improved accuracy (73%), reduced UI and rectal injury. Introducing permanently fixed prostate tissue and repeated TPB for the first-time.

Conclusion: The history of TPB underpins modern prostate biopsy practice, which is further enhanced by real-time rectal ultrasound and MRI-fusion imaging.

P6-9 Evolution of Percutaneous Renal Access

Mrs Mussammet Ahmed[1], Mr Ananda Kumar Dhanasekaran[1]
[1]Sandwell And West Birmingham NHS Trust, Birmingham, United Kingdom

Introduction: Percutaneous Renal Access remains a vital part of the modern-day urology practice. Its indication ranges from emergency management of obstructed renal tracts to elective access for calculi.

Materials and Method: We carried out PubMed, ClinicalKey and Google Scholar literature search on percutaneous renal access history. We tried to access as much older literature available.

Result: First nephroscopy was performed in 1941 using rigid cystoscopy during open surgery. In 1954, Wickbom opacified the renal pelvis directly by injecting contrast medium through a long needle. Thus, the antegrade nephrostogram was first performed. The following year, Goodwin used a catheter for drainage. In 1965, Bartley used a guidewire technique for drainage of the urinary tract, and in 1976, Frenstrom and Johansson reported dilation of the nephrostomy tract for stone removal.

By 1978, Stables reviewed the techniques used in the performance of 516 nephrostomies. Smith, in 1979, coined

the term endourology. In 1982, Castaneda-Zuniga and Amplatz published the technique of fluoroscopic guidance to extract stones with Randall forceps. Coleman in 1985, reported 99% success rate in a study of 450 patients. Smith and Amplatz together developed the Amplatz retention catheter in 1986. Thus, the technique of percutaneous drainage of the urinary tract with subsequent percutaneous removal of obstructing stones made advancements during the 1970s. Today, percutaneous urinary tract interventions are an integral part of endourology.
Conclusion: Clinical need has led to the establishment of percutaneous renal access procedure. In this presentation, we discuss the history of Percutaneous Renal Access in detail with pictures.

P6-10 Frank Hinman Jr (1915-2011): outstanding contribution to the world of urology

Mr Ramandeep Chalokia[1], Mr Rajiv Pillai, Mr Soumendra Datta, Mr Zafar Maan, Mr Gerald Rix, Mr John Corr
[1]Colchester General Hospital, Colchester, United Kingdom

Frank Hinman Jr (1915 –2011): outstanding contribution to the world of urology

Introduction: One name which stands tall among the leading figures in the world of urology is that of Frank Hinman Jr. He was a prolific writer, educator, teacher, surgeon and artist par excellence.
Materials and methods: A comprehensive search was done on the life, works and achievement of Frank Hinman Jr.
Results: Born to an illustrious father, Frank Jr was the eldest of the five sons of his parents. After completing his surgical residency in prestigious Cincinnati residency program, he joined the Navy as a Surgeon. On return from the Navy he completed his urology residency in the University of California.
He is credited to be one of the founding members of the Society of Pediatric Urologists thus laying the foundation of a subspecialty in 1951. His ground-breaking research on varied urologic conditions has enriched our understanding particularly the studies on bladder defense mechanisms in infection and the use of detubularized segment of the bowel for bladder substitution. His noteworthy contribution was to provide cognizance of the condition now known as Hinman Syndrome, a non-neurogenic lower urinary tract dysfunction. He promoted the concept of research amongst the residents in training but emphasized creation of facilities and financial support for them. His writing skills can be gauged by the fact that he has authored more than 250 published articles, several textbooks and the atlas of urology.
Conclusions: Quite deservedly he was the recipient of several awards and accolades.

ePoster Session 7: Female Urology and Bladder Dysfunction 2 Tuesday 25 June 11:45-12:45 Carron Chairs: Simon Fulford, Siobhan Woolsey & Sophia Cashman

P7-1 Erosion of bladder neck bulking: first case series of Macroplastique complications

Mr Ata Jaffer[1], Mr Mustafa Hilmy[1]
[1]York Teaching Hospitals NHS Trust, York, United Kingdom

Introduction: Several urethral bulking agents currently exist with most demonstrating promising short-term outcomes in terms of efficacy and safety, however long term data is limited. Macroplastique (polydimethylsiloxane injection) was one of the earlier agents used and deemed to be one the safest in systematic reviews however in this case series, we present a number of patients who were treated at our national salvage centre with complications.
Patients and Materials: Review of prospectively maintained database for patients presenting with complications of Macroplastique 2014-2018.
Results: A total of 9 patients were identified. Dates of original insertion ranged between 2002–2005. All patients were referred due to complaints of recurrent UTI's/pain and found to have erosion of the implant +/− calcification. A full assessment was carried out which included cystoscopy and pelvic MRI. All patients underwent transurethral resection of implant. 7 patients had complete resolution of symptoms with 2 requiring repeat resection. 2 had recurrent SUI successfully treated with an autologous sling and a further 2 patients are awaiting follow up.
Conclusions: To our knowledge, this is the first reported case series of Macroplastique related erosions. On cystoscopy they appear as yellow, spongiform protrusion and can be difficult to spot. Monopolar resection is challenging due to the insulating property of its silicone make-up therefore bipolar resection may be preferred. Following resection, our patients had significant improvement in symptoms and therefore it is important to remain vigilant of the possibility of erosion in patients with UTI's who have previously had an implant.

P7-2 Are the Outcomes of Surgical Treatment of Women with Recurrent Stress Urinary Incontinence (SUI) As Good as Those in Women with Primary SUI?

Dr Huriye Kocadag[1], Dr Gemma Scrimgeour[1], Dr Bogdan Toia[1], Dr Anu Ranasinghe[1], Miss Lisa Smyth[1], Miss Mahreen Pakzad[1], Mr Rizwan Hamid[1], Mr Jeremy Ockrim[1], Miss Tamsin Greenwell[1]
[1]University College London Hospitals NHS Foundation Trust (UCLH), London, United Kingdom

Aims and Introduction: Recent publications have indicated worse outcomes in women having surgery for recurrent or persistent stress urinary incontinence (SUI) as compared with women having surgery for primary SUI. We have assessed and compared outcomes in all women having surgery for SUI in our unit.
Methods: A retrospective notes review was performed for all 316 women have SUI surgery from 2007 to 2017 with a minimum of 12 months follow-up. 12 months follow up data with patient global impression of improvement PGII (as a 5-point Likert score with 1 being much worse and 5 much better) was available on 260 women of median age 54 years (range 17-81). Statistical analysis of parametric data was by T-test and none parametric by Mann Whitney U Test with significance determined as $P<0.05$.
Results: 140 women (median age 55 years) had surgery for recurrent or persistent SUI whilst 120 women (median age 53 years) had surgery for primary SUI. Procedures performed were; Sling (57), Colposuspension(46), Transobturator Mid-Urethral Tape(MUT) (91), Retropubic MUT(12), Artificial Urinary Sphincter (16), Bladder Neck Closure (5), Intra-Urethral Bulking (26) and Miscellaneous (7). Median (mean, range) PGII at 12-months following recurrent SUI surgery was 4 (3.97, 1-5). This was not significantly different ($P>0.05$) from median (mean, range) PGII 12-months following primary SUI surgery, which was 5 (4.4, 1-5).
Conclusions: Whilst PGII 12 months following recurrent SUI surgery is lower than that following primary SUI surgery it is not significantly so and the majority of women rate themselves as better or much better following all SUI surgery.

P7-3 The Management and Outcomes of Urethral Complications Of Mid Urethral Tapes For Stress Urinary Incontinence

Dr Bogdan Toia[1], Miss Neha Sihra[1], Miss Mahreen Pakzad[1], Mr Rizwan Hamid[1], Mr Jeremy Ockrim[1], Miss Tamsin Greenwell[1]
[1]University College London Hospitals NHS Foundation Trust (UCLH), London, United Kingdom

Introduction: Urethral complications of mid-urethral tapes (extrusion, fistula or loss) are extremely rare and the functional outcomes of their treatment relatively unknown. We examined the causes, presentations, treatment and outcomes of urethral complications of MUT.
Patients: A retrospective analysis of a prospectively acquired database of patients having surgical management of urethral complications of MUT between 2008−2018 was performed.
Results: 35 patients of median age 54(33−82) years were identified, with the median time between tape insertion to removal of 5(1−15) years.

Table 1.

Urethral Complication	Number	Management	Simultaneous SUI Surgery	Subsequent SUI Surgery
Urethral extrusion	28	Vaginal excision, repair of urethra,28 MIFP 24	Macroplastique 1 Colposuspension 1 Take down colposuspension + urethrolysis 1	Rectus fascial sling 11 Colposuspension 5 Bulkamid 1 Bladder neck AUS 1
Urethral extrusion + stone	2	Vaginal excision, repair of urethra, MIFP 2	Rectus fascial sling 1	Rectus fascial sling 1
Urethral extrusion + Urethrovaginal Fistula	3	Vaginal excision, repair of urethra, MIFP 3		Rectus fascial sling 1 Ileal conduit 1
Urethral Loss	1	Total open excision, Simple cystectomy, neobladder + Mitrofanoff 1		
Urethral and bladder extrusion	1	Total open excision, repair of urethra, MIFP 1	Open removal of bladder stone	

Pre−operative urodynamics showed SUI in 18/35 (51%), DO wet in 4/35 (11%), and DO dry in 4/35 (11%). 26/35 (74%) had repeat VUDS assessment; 21/26 (81%) had recurrent/persistent SUI, 5/26 (19%) had recurrent/persistent mixed urinary incontinence (MUI) and 5 (19%) had DO dry.

20/34 (59%) went on to have further SUI surgery with cure or improvement in 15/20 (75%). 13 women had rectus fascial sling –9 are dry or improved. 5 had colposuspension -4 are dry or improved. 1 had Bulkamid injection and 1 had bladder artificial urinary sphincter – both are dry.

Conclusions: Vaginal removal of mid urethral tape, urethral repair and modified Martius labial fat pad (MlFP) interposition results in resolution of pain and a useable urethra in 97%. SUI persists or recurs in 74%. 59% require further SUI surgery, which has a 75% success rate. It is important to counsel patients having surgery for tape related urethral complications accurately regarding functional outcomes and the need for further interventions.

P7-4 Management and outcomes of mesh complications in female pelvic floor surgery from a national salvage centre

Mr Ata Jaffer[1], Miss Samarah Faik[1], Mr Bharat Vissamsetti[1], Mr Praminthra Chitsabesan[1], Mr Adrian Evans[1], Miss Nicola Dean[1], Dr Philippa Armstrong[1], Mr Mustafa Hilmy[1]
[1]York Teaching Hospitals Nhs Trust, York, United Kingdom

Introduction: Stress UI (SUI) has been treated with synthetic mesh through a variety of approaches for >20 years. There have recently been a number of high-profile cases highlighting catastrophic complications which has a sparked a pause on all vaginally inserted mesh/tapes to treat SUI/pelvic organ prolapse. We present our experience of managing patients referred with mesh related complications requiring intervention at our national salvage centre.

Patients and materials: Review of prospectively maintained database for patients referred with complications related to mesh insertion between 2012-2018.

Results: In all, 59 patients were identified. Presenting complaints included pain/dyspareunia (n=17), voiding dysfunction (n=12), LUTS/incontinence (n=11), recurrent UTI's (n=7), visible vaginal erosion (n=7), bladder stone (n=2) and haematuria (n=3). Erosion had occurred in 43 cases (27 vaginal, 8 urethral and 7 bladder). Patients were discussed in the Pelvic Floor MDT and reported to HMRA. Majority had their initial incontinence procedure in other units. Salvage procedures performed included; Laparoscopic & cystoscopic assisted excision of eroded mesh +/− fistula repair (one required laparotomy), total excision of vaginal part of tape +/− Martius vaginal flap. Recurrent SUI after salvage surgery occurred in 23% of patients, with the majority treated successfully with autologous pubovaginal slings or Bulkamid.

Conclusion: Our centre follows NHS England Mesh group, British Association of Urological Surgeons (BAUS) and British Society of Urogynaecology (BSUG) recommendations. Such complications can result in disabling and catastrophic consequences and should be managed in specialist centres and streamline management plans.

P7-5 Surgical outcomes of vesicovaginal fistula in the radiotherapy field

Dr Bogdan Toia[1], Miss Mahreen Pakzad[1], Mr Rizwan Hamid[1], Miss Tamsin Greenwell[1], Mr Jeremy Ockrim[1]
[1]University College London Hospitals NHS Foundation Trust (UCLH), London, United Kingdom

Introduction and Objectives: A debilitating consequence of pelvic radiation therapy is radiation-induced vesicovaginal fistulae (rVVF). Whilst outcomes for vesicovaginal fistula repair after gynaecological or obstetric injury are well documented, the success in radiotherapy cases are only sparsely described in the literature. We examined our cohort of patients requiring rVVF repair.

Patients and Methods: Data on all VVF repairs was collected prospectively. A retrospective review of outcomes in those with rVVF performed between 2009-2018 was performed.

Results: 18 women were identified with rVVFs. Mean interval between radiotherapy and fistula repair was 19 (range 0-40) years. Fistulae arose spontaneously in 13 patients, whilst 5 occurred following a further surgical intervention (hysterectomy in 2 women and bladder biopsy, anterior exenteration, clam ileocystoplasty in the others). Closure was attempted vaginally in 7 women and abdominally in one, whilst 10 had primary ileal diversion due to significant bladder contracture and ureteric involvement. Initial closure rate was 4/7 (57%) vaginally and 0/1 abdominally. A failed vaginal closure was successfully achieved abdominally at the second attempt, resulting in an overall closure rate of 5/18 (28%).

Conclusions: Closure of rVVF is a significant challenge with an initial success rate of 22.2% and overall success rate of only 28%. 72% required primary or secondary urinary diversion. Associated bladder dysfunction and ureteric strictures were the deciding factor in 56% Vaginal surgery was utilized in the majority to try avoid a hostile pelvis, but the surgical approach should be tailored to individual circumstance.

P7-6 Pre-operative predictors of outcome following male sling implant for post prostatectomy incontinence

Dr Bogdan Toia[1], Dr Lap Yan Leung[2], Mr Rizwan Hamid[1], Miss Tamsin Greenwell[1], Mr Jai Seth[2], Mr Davendra Sharma[2], Mr Jeremy Ockrim[1]
[1]University College London Hospitals NHS Foundation Trust (UCLH), London, United Kingdom, [2]St George's University Hospitals NHS Foundation Trust, London, United Kingdom

Introduction: The male sling is an alternative to the artificial urinary sphincter for the treatment of post prostatectomy incontinence, with variable success rates reported. The likelihood of success is not well understood and the predictors of outcome poorly documented. We looked at the pre-operative parameters that might facilitate patient selection

Patients and methods: All men with post prostatectomy incontinence had data collected in prospective database. Data included previous intervention, radiotherapy, 24h pad weights and urodynamic parameters including retrograde leak point pressure.

Results: 100 men were treated with the Advance male sling system between 2012 and 2018. 73 patients were cured of their incontinence (1 or less pads for reassurance) whilst 27 patients remained significantly wet.

The table shows preoperative parameters in those who were dry versus those remaining wet. Differences were assessed using paired T-tests, Mann-Whitney U Test and Fisher's Exact Test as appropriate. A $p<0.05$ is considered significant

Male sling was successful in 73% of patients, of which 46% did not use any pads. Only 27% of patients had residual leakage. The only significant predictors were number of pads, detrusor overactivity and bladder capacity.

Conclusions: Male sling was a successful treatment in the majority of patients irrespective of pre-operative parameters. The only predictors of significance were number of pads, detrusor overactivity and capacity on preoperative videourodynamics. Patients should be carefully counselled but not be excluded from male sling treatment on pre-operative parameters alone.

P7-7 Intravesical Botulinum Toxin A Injections in patients on antiplatelet and anticoagulation therapy

Miss Elsie Ellimah Mensah[1], Dr Bogdan Toia[3], Mr Andrew Brown[4], Miss Linh Trang Nguyen[2], Mr Rizwan Hamid[3], Miss Mahreen Pakzad[3], Mr Roger Walker[4], Mr Jeremy Ockrim[3], Mr Davendra Sharma[1], Miss Tharani Nitkunan[4], Miss Tasmin Greenwell[3], Mr Jai Seth[1]
[1]St Georges Healthcare NHS Trust., London, United Kingdom, [2]St Georges, University of London., London, United Kingdom, [3]University College London Hospitals, London, United Kingdom, [4]Epsom, St Helier Hospital, London, United Kingdom

Introduction: There is little evidence regarding the safety of Intravesical botulinum Toxin-A (Botox) injections in patients on anticoagulant/antiplatelet (AC/AP) medication. The cessation of which may predispose to thromboembolic or ischaemic events. We reviewed significant bleeding events after Botox injection with concurrent AC/AP use.

Methods: A retrospective review of all patients having Botox in 3 London hospitals was conducted between January 2016-July 2018 to examine those with continued AC/AP therapy. Demographic data, indication for injection, and significant bleeding requiring intervention were recorded.

Results: 532 patients had Botox injections during this time. 63 patients [mean age 69 years (range 19-89), had a total of 114 separate rounds of Botox injections whilst on treatment dose AC/AP therapy. Each patient had between 1-7 repeat Botox injections. AC/AP use included; aspirin 44, clopidogrel 37, warfarin 19, NOAC (novel/non-vitamin K oral anticoagulant) 14. Patients on warfarin all had INR $<$ 3.

	Success (0-1 pads) (mean and standard deviation)	Failure (> 1 pad) (mean and standard deviation)	P value
No patients	73	27	
Pre-operative radiotherapy	9	4	0.747
Number pads	2.5 (+/- 1.3)	3.6 (+/-1.9)	0.003
24h pad weight	171.13 (+/-154.2)	734.4 (+/-173.1)	0.056
Detrusor overactivity	20	14	0.024
Reduced compliance	19	10	0.248
Capacity	441.2 (+/- 109.8)	360.3 (+/-120.3)	0.005
Retrograde leak point pressure	45.7 (+/- 17.3)	39.1 (+/- 20.9)	0.229

There was 1/114 (0.88%) episode of post-injection haematuria requiring overnight admission resolving spontaneously. This patient, on rivaroxiban had 300U of Botox injected through 20 sites, on a background of previous prostate radiotherapy. There was no report of bladder washout or transfusion.

Conclusions: Very few significant bleeding events occurred despite continuation of AC/AP therapy. Some patients within this group may have other factors that further increase bleeding risk. This is an important consideration during patient counselling, and when treating patients who have high risk of thrombosis with AC/AP.

P7-8 Is botulinum toxin A an effective treatment in patients following radiotherapy?

Dr Bogdan Toia[1], Miss Mahreen Pakzad[1], Mr Rizwan Hamid[1], Miss Tamsin Greenwell[1], Mr Jeremy Ockrim[1]
[1]University College London Hospitals NHS Foundation Trust (UCLH), London, United Kingdom

Introduction: The response to Botox treatment in patients with idiopathic and neuropathic detrusor overactivity is well documented. However, the literature on Botox therapy in patients who have had prior pelvic radiotherapy are sparse.

Patients and methods: This is a retrospective review of all radiotherapy patients who underwent intradetrusor botulinum toxin A injection at a tertiary centre between 2007-2018.

Results: 35 patients were identified (26 men and 9 women). On initial video-urodynamic studies 20/35 (57%) had non-compliant bladder, with an average end fill pressure of 37 cmH2O (range 12-80cmH2O), a further 12/35 (31.4%) had early onset DO from an average of 133mls (range 49-220mls) with incontinence making compliance difficult to assess. 3 patients had end fill detrusor overactivity, with only 2 patients having normal compliance.

15 (43%) patients had good clinical response and went on to repeat injections (mean 2.35 injections, range 1-7). Of these 6/20 (30%) had poor compliance, 7/12 (56%) early onset overactivity and 2/3 (66%) had end fill overactivity. Of those who had partial or poor response repeat urodynamics demonstrated persistent compliance loss and early onset overactivity. The 20 patients who did not respond to intradetrusor injections were offered cystoplasty 6/35 (17%) or urinary diversion to 2/35 (6%). Artificial urinary sphincter was offered to 2 (6%) patients due to predominance of stress leakage. Other patients were managed conservatively

Conclusions: Poor compliance is a predictor of Botox failure with only 30% showing substantive response. Early onset overactive incontinence responded in 56% and remained durable in these patients.

Indication	Time from radiotherapy (range)	Preoperative Urodynamic diagnosis	Success
Prostate (18)	5.17 years (1-18)	Non compliant bladder (8) Early-onset DO (8) End-fill DO (2)	10/18 (56%)
Cervical (6)	19 years (4-43)	Non compliant bladder (6)	1/6 (17%)
Rectal (4)	9.5 years (2-20)	Non compliant bladder (3) Early-onset DO (1)	1/4 (25%)
Urethral (2)	9.5 years (1-18)	Early-onset DO (2)	0/2 (0%)
Other (5)	12.8 years (2-31)	Non compliant bladder (3) Early-onset DO (1) End-fill DO (1)	3/5 (60%)

P7-9 Renal Transplantation into Urinary Diversions and Reconstructed Bladders

Dr James Jen Yao Chong[1], Ms Rhana Hassan Zakri[1], Mr Muhammad Shamim Khan[1], Mr Geoffrey Koffman[1], Professor Nizam Mamode[1], Mr Jonathon Olsburgh[1]
[1]Department of Transplantation and Urology, Guy's Hospital, London, United Kingdom

Introduction: Renal failure secondary to urological disorders can necessitate urinary diversion or reconstruction either pre or post-transplant (KT). Decision-making regarding timing of diversion/reconstruction may be affected by living (LD) or deceased (DD) donor options. We assessed KT outcomes into urinary diversions and reconstructed bladders.

Patients and Methods: Single-centre retrospective review of 4679 KTs between 1986-2018. Graft and patient survival (GPS) were calculated.

Results: 54 patients (mean age 38) who had 63 transplants (1.3%) required urinary diversion or reconstruction; 5 had initial diversion and subsequent undiversion/reconstruction. Mean follow-up was 141 months.

Cutaneous ureterostomy (CU): 12 patients (7 LD; 6 DD); 10 at transplant. 1 patient required two sequential transplants; first was diverted to CU 3 years after transplant (for unrecognised neuropathic bladder), the second a planned CU. The other CU was 4 years post-transplant for a radiotherapy vesico-vaginal fistula from cervical cancer.

Ileal Conduit (IC): 15 into pre-formed IC (7 LD; 8 DD). 7/15 died; 4/7 with functioning transplant.

Post-transplant IC: 5 transplants into bladder but subsequent IC diversion (4 due to bladder cancer and 1 due to worsening bladder function from spina bifida).

Reconstructed urinary tract: 20 transplants into augmented bladders using native ureter (2), gastric-segment (1), ileo-caecum (6) and ileum (16). 5 were augmented post-transplant; 2 were undiverted into neo-bladders post-transplant.

Conclusions: Transplantation into urinary diversions and reconstructed bladders appears safe, with similar GPS to

our general transplant population. DD kidney recipients with unsafe bladders may require initial CU before undiversion and reconstruction to prevent complications from a "dry" augment.

Renal Transplantation into Urinary Diversions and Reconstructed Bladders

Graft and patient survival at 1 and 5 years:

	Graft survival at 1 year	Patient survival at 1 year	Graft survival at 5 years	Patient survival at 5 years
Cutaneous ureterostomy	91%	91%	50%	67%
Pre-formed ileal conduit	93%	100%	77%	77%
Post-transplant ileal conduit	80%	80%	80%	80%
Reconstructed urinary tract	90%	100%	74%	96%
Overall kidney transplant survival in our centre (2009-2017)	95%	98%	92%	93%

The Long-Term Effect of Bladder Augmentation on Renal Function

Miss Anastasia Frost[1], Mr Simon Bugeja[1], Miss Stella Ivaz[1], Miss Nikki Jeffrey[1], Miss Angelica Lomiteng[1], Miss Mariya Dragova[1], Miss Daniela E Andrich[1], Prof Anthony R Mundy[1]
[1]University College London Hospitals NHS Foundation Trust, London, United Kingdom

Introduction: This study examines the long-term effect of augmentation cystoplasty on kidney function, and predicts which patients are more likely to have deteriorating renal function over time.
Methods: 276 patients (mean age 23.7 years) underwent augmentation cystoplasty between 1981 and 2004. 169 had adequate follow-up (mean 25 years; range 10-32 years). Renal function was measured as estimated glomerular filtration rate(eGFR), recorded at 5-year intervals.
Results: 119 had congenital bladder disorders; spina bifida (SB) n=100, congenital anatomical anomalies (CAA) mainly exstrophy-related n=19. 50 had acquired bladder dysfunction (ABD). At the time of surgery, mean age of SB patients was 18.5 years (4.3–48.7 years), CAA 18.4 years (3.8–43.6 years), ABD 36.5 years (3.7–73 years). Ileocystoplasty was performed in 134 patients, caecocystoplasty in 27, colocystoplasty in 8.
Overall, renal function declined by 22.8ml/min over 30 years. This is in line with the physiological decline of 0.75ml/min/year in healthy individuals. The decline in eGFR in ABD was 34ml/min, CAA 18ml/min and 5.7ml/min in SB. In patients aged 0–19years at time of operation(n=89) the fall in eGFR was 20.5ml/min; 29.3ml/min in those aged 40–59years (n=25). In ileocystoplasty, overall GFR decline over 30 years was 18.5ml/min; 31ml/min with colocystoplasty. 3(1.8%) patients had a kidney transplant and 4(2.4%) had a nephrectomy over the 30years studied.
Conclusion: Patients with ABD show a more marked decline in renal function, related to their older age, and reduced renal function at time of surgery. Pre-op renal function, aetiology,age and bowel segment used are important factors when counselling patients regarding life-time decline in renal function following augmentation cystoplasty.

ePoster Session 8: Renal Cancer, Testis Cancer and Sarcoma
Tuesday 25 June
14:15-15:30
Boisdale
Chairs: Alexandre Mottrie, Grant Stewart & Karl Pang

P8-1 Delayed nephrectomy has comparable long-term overall survival to immediate nephrectomy for cT1a renal cell carcinoma: A retrospective cohort study

Mr Wei Shen Tan[1,2,3], Dr Quoc-Dien Trinh[1,4], Dr Matthew Hayn[5], Ms Maya Marchese[1], Prof Stuart Lipsitz[1], Dr Junaid Nabi[1], Prof Kerry Kilbridge[4], Prof Adam Kibel[1,4], Dr Maxine Sun[4], Dr Steven Chang[1,4], Dr Jesse Sammon[5]
[1]Brigham and Women's Hospital, Boston, USA, [2]University College London, London, UK, [3]Imperial College Healthcare, London, UK, [4]Dana-Farber Cancer Institute, Boston, USA, [5]Maine Medical Center, Portland, USA

Background: Current recommendations suggest that nephrectomy or thermal ablation is a recommended treatment option for small renal mass (⩽4 cm). This study examined long-term overall survival (OS) of patients managed with delayed and immediate nephrectomy of cT1a renal cancer.
Methods: We utilized the National Cancer Database (2005-2010) to identify 14,677 patients (immediate nephrectomy: 14,050 vs late nephrectomy: 627) aged <70 years with Charlson Comorbidity Index (CCI) 0 and cT1aN0M0 renal cell carcinoma (RCC). Immediate nephrectomy and late nephrectomy were defined as nephrectomy performed <30 days and >180 days from

diagnosis respectively. Inverse probability of treatment weighting (IPTW)–adjusted Kaplan-Meier curves and Cox proportional hazards regression analyses were used to compare OS of patients in the two treatment arms. Influence of patient age and CCI on treatment effect was tested by interactions. Additional sensitivity analysis was performed to explore the outcome of delaying nephrectomy for >12 months. Post-hoc power calculations were performed.

Results: Median age of patients was 55 years with a median follow-up of 82.5 months. IPTW-adjusted Kaplan-Meier curves suggest not significant difference between treatment arms (Hazard ratio, 0.96; 95% confidence interval, 0.73 to 1.26; p=.77). This outcome was consistent between all patients regardless of age (p=.48). Sensitivity analysis reported no difference in overall survival even if nephrectomy was delayed by >12 months (p=.60).

Conclusion: We report that delayed and immediate nephrectomy for cT1a RCC confers comparable long-term overall survival. The findings of this study support the use of surveillance as a first-line management strategy for small renal masses.

P8-2 Comparing long-term outcomes following radical and partial nephrectomy for cT1 renal cell carcinoma in young individuals

Mr Wei Shen Tan[1,2,3], Dr Sebastian Berg[1], Dr Alexander Cole[1], Dr Marieke Krimphove[1], Ms Maya Marchese[1], Prof Stuart Lipsitz[1], Dr Junaid Nabi[1], Dr Jesse Sammon[4], Prof Toni Choueiri[5], Prof Adam Kibel[1,5], Dr Maxine Sun[5], Dr Steven Chang[1,5], Dr Quoc-Dien Trinh[1,5]

[1]Brigham and Women's Hospital, Boston, USA, [2]University College London, London, UK, [3]Imperial College Healthcare, London, UK, [4]Maine Medical Center, Maine, USA, [5]Dana-Farber Cancer Institute, Boston, USA

Background: Despite randomized data demonstrating better overall survival (OS) favouring radical nephrectomy, partial nephrectomy continues to be the treatment of choice for low stage renal cell carcinoma (RCC).

Methods: We utilized the National Cancer Database (NCDB) to identify patients aged <50 years diagnosed with low stage RCC (cT1) treated with radical nephrectomy or partial nephrectomy (2004-2007). Inverse probability of treatment weighting (IPTW) adjustment was performed for all preoperative factors to account for confounding factors. Kaplan-Meier curves and Cox proportional hazards regression analyses were used to compare OS of patients in the two treatment arms. Sensitivity analysis was performed to explore the interaction of type of surgery and clinical stage on OS.

Results: Among the 3,009 patients (median age: 44 years (IQR: 40-47)), 2,454 patients (81.6%) were treated with radical nephrectomy and 555 patients (18.4%) treated with partial nephrectomy. Median follow-up was 108.6 months (IQR: 80.2-124.3) during which, 297 patients (12.1%) in the radical nephrectomy arm and 58 patients (10.5%) in the partial nephrectomy arm died. Following IPTW adjustment, there was no difference in OS between patients treated with partial nephrectomy and radical nephrectomy (Hazard Ratio (HR): 0.83, 95% CI: 0.63–1.10, p=0.196). There were no significant interactions between type of surgery and clinical stage on treatment outcome.

Conclusions: There was no difference in long-term OS between radical and partial nephrectomy in young patients. This patient cohort may have sufficient renal reserve over their lifetime and preserving nephrons by partial nephrectomy may be unnecessary.

P8-3 Current Trends in Robot-Assisted Partial Nephrectomy in the UK

Mr Adham Ahmed[1], Mr James Armitage[1], Miss Sarah Fowler[2], Mr Grant D Stewart[3], Mr Stephen Bromage[4]

[1]Cambridge University Hospitals, NHS Foundation Trust, Cambridge, United Kingdom, [2]British Association of Urological Surgeons, United Kingdom, [3]Academic Urology Group, Department of Surgery, University of Cambridge, Cambridge, United Kingdom, [4]Stepping Hill Hospital, United Kingdom

Introduction: This study aims at examining the trends in practice and outcomes of robot-assisted partial nephrectomy (RAPN) in the UK.

Materials and Methods: Retrospective analysis was performed of RAPN cases submitted from 2013-2016 to the British Association of Urologic Surgeons (BAUS) nephrectomy database. This included number of hospitals and consultants performing RAPN, patient characteristics and perioperative investigations and outcomes. Statistical significance was calculated using the t- and chi-squared tests via SPSS.

Results: A total of 2074 RAPNs were performed during this period with an annual increase in the number of

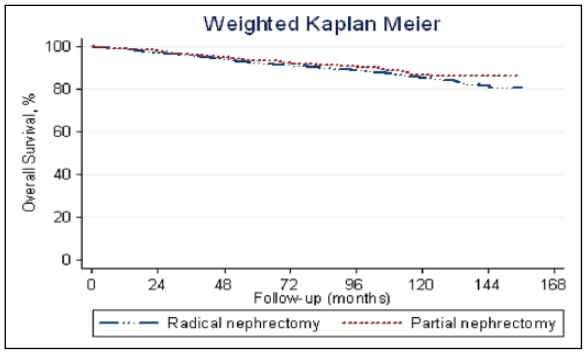


Figure 1. Weighted (HR: 0.83, 95% CI: 0.63–1.10, p=0.196) Kaplan Meier analysis of overall survival for patients treated with radical and partial nephrectomy.

operations performed. There was a general increase in the number of hospitals and consultants providing RAPN. Patient age, body mass index and percentage of males did not change. There was a statistically significant ($p<0.05$) decrease in the operating time, mean blood loss, transfusion rate, rate of complications, intensive care unit admissions and hospital length-of-stay. There was a statistically significant ($p<0.05$) increase in the implementation of zero ischaemia, mean warm ischaemia time and day-one and same-day discharges. Although there was an increase in pre-operative biopsies performed, that did not change the percentage of renal masses deemed benign on post-operative specimen analysis.

Conclusions: RAPN is being increasingly implemented in the UK. Reporting surgeon-volume and hospital-volume outcomes may be used to aid centralization or reconfiguration of surgical services. Better recording of outcomes might improve the quality of the analysis by limiting missed data.

P8-4 Retroperitoneal robot - assisted partial nephrectomy: A single institution experience

Mr Manar Malki[1], Mr Raghav Varma[1], Mr Muddassar Hussain[1], Mr Neil Barber[1]
[1]Frimley Park Hospital, Frimley, United Kingdom

Introduction: Traditionally, robot-assisted partial nephrectomy (RAPN) is performed via the transperitoneal approach. Few institutions have reported on outcomes and safety of retroperitoneal robot-assisted partial nephrectomy (R-RAPN). Most of these studies had small number of patients. To best to our knowledge, we are representing surgical outcomes of the world's largest single institution reported study on R-RAPN.

Methods: Between 2012 and 2018, 442 patients underwent RAPN, of whom 397 patients had R-RAPN. We reviewed patients' demographic, operative data, postoperative complications and histology.

Results: The median age was 60 years. The mean BMI was 28.5 kg/m^2. Median maximum tumour diameter was 3.0 cm (IQR 2.0 - 3.7). The median R.E.N.A.L nephrometry score was 6. Almost half of excised tumours were located posteriorly. Median operative time and warm ischaemia time (WIT) were 129 min (IQR 105.6 - 150) and 21 min respectively. Median estimated blood loss is 20 mL. The median length of stay was 1 day. The rate of blood transfusion and postoperative complications were 1% and 4.5% respectively.

55% of tumours were reported as clear cell carcinomas (table 1). 80% of tumours were histologically staged as T1a with six positive margins (1.8%). There are only 3 reported recurrences (0.7%) with median follow-up of 35 months. Trifecta (negative surgical margin, no postoperative complications, WIT $\leq$ 25 minutes) was achieved in 67.3%.

Table 1

Histological classification	*n*	%
Clear RCC	219	55.2
Papillary RCC	65	16.4
Chromophobe	31	7.8
AML	24	6.0
Oncocytoma	47	11.8
Others	11	2.8

Conclusion: R-RAPN represents a valid and safe approach to treat patients with posterior and most anterior small renal masses. R-RAPN achieves the required trifecta and a very short LOS.

P8-5 Efficacy and Safety of Robotic Partial Nephrectomy in The Management of Cystic Renal Masses

Mr Lorenzo Marconi[1], Nicolo de Luyk[1], Nicholas Mehan, Nick Simson[1], Archana Fernando[1], Ben Challacombe[1]
[1]Guys Hospital, London, United Kingdom

Introduction: Limited data is available on the outcomes of Robotic Partial Nephrectomy (RPN) for cystic tumours (CyT). The objective of this study is to compare the outcomes of RPN for CyT and solid tumours (ST), analysing the largest single-institutional, multi-surgeon database of RPN in the UK.

Methods: Renal masses were categorized as ST or CyT according to the analysis of cross-sectional imaging and histopathology gross description.

Results: From 2010 to 2018, 314 RPN with full data on type of lesion were performed. Of those, 77.1% (242) were solid and 22.9% (72) were cystic. Both groups had similar baseline patient and tumour characteristics (Table 1). Warm ischemia time, operation length and blood loss were similar between groups. There were no positive margins in the CyT group and only 2.7% in the ST group($p=0.18$). Intra and post-operative complication rates were similar between groups (16.9vs13.9%, $p=0.92$). The most common type of complication in both groups was infection. There was a single case of CyT rupture during specimen extraction that resulted in a recurrence in the rectus sheath. The overall recurrence rate was 1.2% and 1.4% in CyT and ST, respectively ($p=0.92$). At multivariate analysis a CyT was not an independent risk factor for recurrence, positive margin, complications or longer WIT.

Table 1

	Cystic Masses	Solid Masses	p
Age (y)	58.76 [39-83]	55.54 [20-79]	0.32
Male gender	58.3%	63.2%	0.45
ASA	2 [2-2]	2 [1-2]	0.09
BMI	29.53 [18-54]	29.72 [18.3-54.0]	0.65
Pre-op EGFR (ml/min)	78.38 [29-121]	78.77 [29-121]	0.93
Tumour size(cm)	3.8 [0.8-9]	3.146 [1.0–9.0]	**0.003**
PADUA score (median, IQR)	8 [7-9]	7 [7-8]	0.11
T stage			0.16
• T1a	73.8%	84.7%	
• T1b	19.7%	11.7%	
• 2a	4.9%	1.5%	
• 3a	1.6%	2.0%	
Histology			
CC	59.7%	50.8%	0.20
Pap1	13.9%	13.6%	
Pap 2	2.8%	2.1%	
Chromophobe	1.4%	5.4%	
Oncocytoma	4.2%	13.6%	

Table 2

	Cystic Masses	Solid Masses	p
Warm ischemia time(m)	17.3	17.2	0.89
Operation length(m)	165	166	0.81
Estimated blood loss(ml)	166	191	0.16
Positive margin	0%	2.7%	0.18
Complications	16.9%	13.9%	0.52
Recurrence	1.2%	1.4%	0.92

Conclusion: RPN in CyT is a safe and effective procedure with similar trifecta outcomes when compared with the same procedure in solid masses, even when considering a more challenging population in terms of patient characteristics and higher tumour complexity.The increased risk of rupture during dissection or tumour excision makes RPN in CyT a complex procedure with several technical intricacies.

P8-6 A review of the benefits of staging Chest CT in newly diagnosed small renal tumours

Mr James Jenkins[1], Miss Tamsin Drake[1], Dr Robyn Perry-Thomas[1], Miss Samantha Kearley[1], Mr Salah Albuheissi[1]

[1]Bristol Urological Institute, Bristol, United Kingdom

While renal cell carcinomas (RCCs) are increasingly diagnosed pre-clinically as incidental radiological findings, it is well documented that rates of synchronous metastasis at diagnosis remain high (10-20%) with the lungs most commonly affected. Conformingly, EAU guidelines advise full CT staging at diagnosis for all renal cancers.

Recent publications (including Larcher et al. BJUI 2017) raised questions over the objective benefit of performing CT chests in those with cT1a disease with chest metastases pick up rates of $<1\%$.To this end, we aimed to test this finding against a UK based population.

Retrospective review of all patients passing through a single tertiary centre MDT between 2011-2017 inclusively identified 1139 suspected RCCs including 479 T1aNxMx and 250 T1bNxMx. In both groups, baseline CT chest performance and positive findings were recorded.
Of those with T1a tumours, 82.3% underwent CT chest. Within this group, 89.8% of scans were clear, 2.3% showed lung primary tumours, 7.8% revealed indeterminate nodules (none later confirmed as metastatic disease), and 0.25% showed lung metastasis (later refuted on biopsy).
Of those with T1b disease, 92.0% underwent CT chest, with 88.7% reported clear, 6.9% showed indeterminate pulmonary nodules (75% stable or resolved on follow up), 0.9% showed primary lung pathology and 3.9% demonstrated clear metastatic disease.
These findings support those of Larcher et al, with synchronous metastatic lung detection rates for suspected T1aNxMx below the incidental pick up rates of lung primaries. Whilst further analysis is warranted, these findings question the underlying evidence base for staging CT chest in such cases.

P8-7 Long term oncology outcome of Radio frequency ablation (RFA) for T1 renal cell carcinoma

Mr Benjamin Steen[1], Mr David Curry[1], Mr Ajay Pahuja[1], Dr Willie Loan[1], Mr Ali Thiwaini[1]
[1]Belfast City Hospital, Belfast, United Kingdom

Objective: To describe oncology outcomes and complications with radiofrequency ablation (RFA) for T1 renal cell carcinoma in a centre with 14-year experience
Method: Retrospective study of 89 consecutive patients from 2005 to 2013 who underwent RFA. Those with metastatic disease at time of treatment, incomplete follow up, proven benign pathology, genetic underlying genetic pre-disposition were excluded. 76 patients with 80 tumours met the inclusion criteria. Data was collected on; demographics, oncological outcomes and complications. Primary outcome measures were disease free survival and cancer specific survival at 5 and 8 years.
Results: Median follow up was 83 months. We demonstrate an 89% 5-year disease free survival (DFS) and 79% 8year DFS. Median time to progression was 63months. When classified by tumour size no significant difference was seen in 5 or 8-year DFS. Cancer specific survival was demonstrated as 98% at 5 years and 96% at 8 years – all cancer related deaths had an initial tumour of >3cm diameter. The median time to progression for secondary failure was 50.7 months. Two Clavien-Dindo Grade 2 complications were encountered in the series.
Outcome: RFA produces comparable long-term oncological outcomes to other modalities for T1 tumours with a low complication rate

P8-8 Cytoreductive Nephrectomy - Changing Times?

Mr Campbell Tait[1], Mr Edgar Paez[1], Mr David Thomas[1]
[1]Department Of Urology, Freeman Hospital, Newcastle Upon Tyne, United Kingdom

Introduction: The recent CARMENA study has questioned the role of cytoreductive nephrectomy. We have reviewed our practice over the past 5 years with a view to selection and outcomes.
Patients and Methods: We reviewed patients who underwent cytoreductive nephrectomy for metastatic renal cancer, over a 5-year period. We assessed outcomes including complications, overall survival, disease progression and pre/post-operative use of systemic therapies such as tyrosine kinase inhibitors (TKIs).

	Post op TKI therapy Group A	Pre and Post Op TKI Therapy Group B	Nephrectomy Only Group C
Number	22	11	10
Hospital Stay	7.5 days (range 2-19)	7.7 (range 3-12)	13.3 (range 1-43)
Transfusion Rate	⩽ 2 units PRCs 1 3-6 units PRCS 0 ⩾6 units PRCS 0	⩽ 2 units PRCs 4 3-6 units PRCS 1 ⩾6 units PRCS 1	⩽ 2 units PRCs 3 3-6 units PRCS 0 ⩾6 units PRCS 1
Complications Clavien-Dindo II/III/IV	II – 2 III – 0 IV - 0	II – 1 III – 0 IV - 0	II – 1 III – 3 IV - 0
Current Survivorship %	36.4%	27.3%	60%
Mean length of follow up in surviving cohort	42.6 months (range 16-62 months)	56.3 months (range 37-67 months)	38.5 months (range 23-57 months)

Results: 43 cytoreductive nephrectomy patients were identified between February 2012 and December 2017 (36 males, 7 females) with a mean age of 61 (33-79). 38/43 patients had conventional clear cell renal carcinoma. 22/43 (Group A) patients underwent upfront cytoreductive nephrectomy and were treated with TKI therapy post-surgery. 36.4% (8) of these patients are still alive (42.6 months average follow up). 11 patients (Group B) commenced TKI therapy pre-operatively and underwent subsequent cytoreductive nephrectomy according to response. 27.3% (3) of these patients are still alive (56.3 months average follow up). 10 patients underwent cytoreductive nephrectomy and had no further treatment. 60% (6) of these patients are still alive.
Conclusions: There is a trend towards TKI therapy prior to surgery in patients with a large metastatic burden. This does not appear to affect surgical morbidity, although we found a higher rate of blood transfusion in the group who had undergone pre-operative TKI therapy. Patients with large primary tumours and low metastatic burden have been managed by upfront nephrectomy without pre-operative TKIs. It will be interesting to see how CARMENA alters UK practice.

P8-9 Cytoreductive nephrectomy: Are CARMENA outcomes the norm?

Mr Philip Brousil[1], Mr Raj Nair[1], Mr Ben Challacombe[1], Miss Archie Fernando[1], Mr Tim O'Brien[1]
[1]Guys And St. Thomas' Nhs Trust, London, United Kingdom

Introduction: The CARMENA trial challenges the established paradigm for upfront cytoreductive nephrectomy (CN) in the management of metastatic renal cell carcinoma. However, questions remain about the generalizability of these outcomes to non-trial patients.
Methods: Retrospective review of outcomes of patients undergoing CN in a single centre since 2013. Risk stratification assessed by Heng criteria; performance status by Karnofsky; complications by Clavien-Dindo; overall survival by Kaplan-Meier. Clinical features, risk stratification and outcomes were compared with the CARMENA trial cohorts.
Results: 54 patients. 35% female. 50/54 (93%) underwent upfront open CN; 3/54(6%) CN post-TKI (Tyrosine Kinase Inhibitor). Variant histology in 6/54 (11%). 1/54 (2%) died within 30 days of surgery: this was the only case where the CN was abandoned. 5/54 (9%) had ⩾ Clavien-Dindo 3 complications (vs 16% CARMENA).
Clinical features and risk stratification are shown in table 1.
Headline results:

1. Risk stratification: Poor prognosis 23% versus 44% in CARMENA
2. 3/54 (6%) too unwell to receive post-operative TKIs (18% in CARMENA did not receive post-operative TKIs).
3. Median survival 37.6 months (versus 13.9 months/ Surgical arm & 18.4 months/TKI only arm of CARMENA).
4. 8/54 patients (15%) of the cohort have not needed TKI therapy to date.

Conclusion: In a contemporary UK population undergoing cytoreductive nephrectomy; performance status, tumour stage, risk stratification, and outcomes are markedly different from those in the CARMENA trial. The generalisability of the CARMENA trial outcomes and recommendations is questionable.

P8-10 Renal masses in deceased donor kidneys; Potential to expand the donor pool through improved organ utilisation

Pinky Kotecha[1], Ms Rhana Hassan Zakri[2], Mr Jonathon Olsburgh[2], Mr Chris Callaghan[2]
[1]King's College London, London, United Kingdom, [2]Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom

Table 1

	Current cohort	CARMENA patients
Age	63 (range 24-82)	63 (range 30-87)
Good Performance status	70%	58%
Poor prognosis	22%	44%
Stage T3/T4	91%	70%
Tumour size	110 mm (range 30-200)	88 mm (range 6-200)
Metastatic sites (median)	1	2
Metastatic burden (<10% volume of primary tumour)	77%	n/a

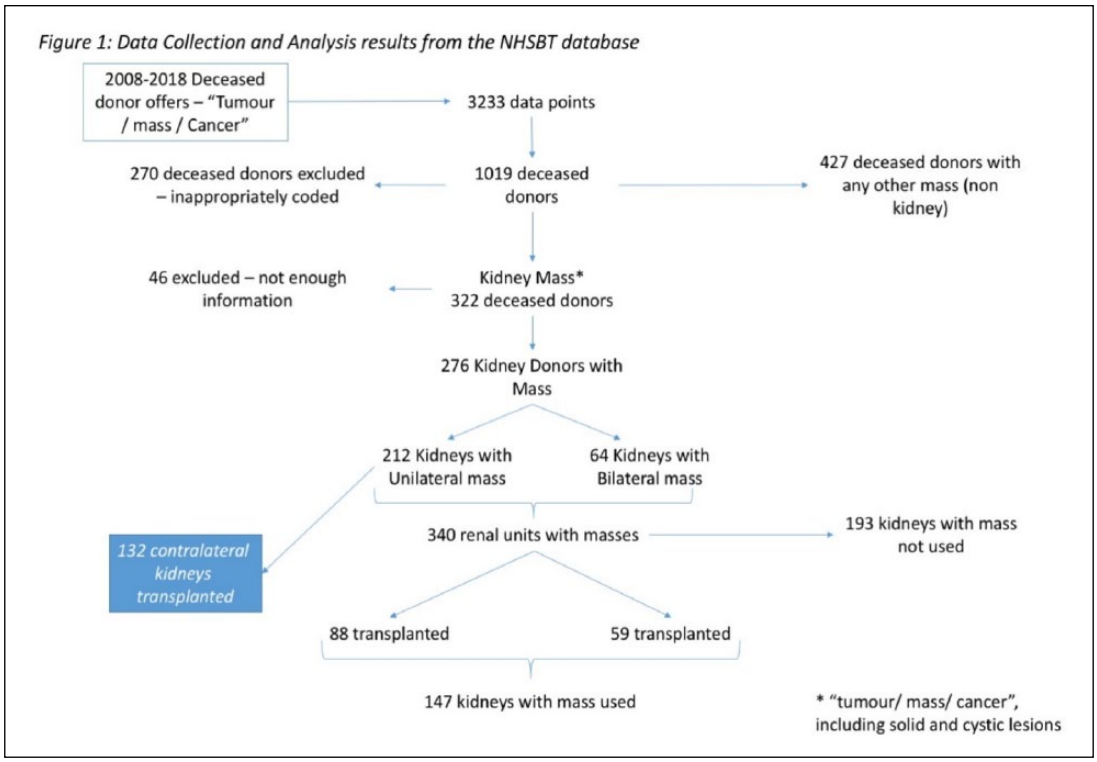


Figure 1.

Introduction: Highlighting underutilisation of organs for transplant is crucial in preventing death on waiting lists. Small renal masses ⩽4cm have very low metastatic potential and 20% are benign. We aim to report incidence of renal masses in potential donors, along with utilisation of affected and unaffected paired kidneys for transplantation.
Methods: Retrospective 10-year national data (2008 – 2018), provided by NHS Blood & Transplant, was searched using key-words "mass, tumour or cancer" in deceased donor solid organ offers. For additional donor information, the electronic offering system (EOS) was consulted. Those inappropriately coded or with insufficient data were excluded. We categorised renal mass size into small (⩽4cm), medium (5-7cm), large (⩾8cm).
Results: 12,121 deceased donor offers took place during the study period. The key-word search extracted 3233 matches in 1019 solid organ deceased donor offers. 276 potential donor offers had a kidney mass identified (64, bilateral kidney masses; 212 unilateral). This equates to 340 kidneys with a mass. Figure 1.
340 kidneys with a mass offered for transplantation, 147 (43%) were transplanted. (Size range: 0.1 –10cm.) No kidney with a large solid mass was transplanted. Of the 212 contralateral unaffected kidneys from donors with a unilateral mass, 132 (62.3%) were transplanted. Table 1.
Discussion: A large proportion of donor kidneys with masses were discarded. The recording of lesions at retrieval is insufficient to help retrospective analysis, with potential organ underutilisation. We await further data on oncological and functional outcomes and look to enable a national pathway to optimise appropriate organ allocation for transplantation.

P8-11 Management of lower ureter in nephroureterectomy ; analysis of the BAUS database

Mr Paul Cleaveland[1], Ms Sarah Fowler[2], Mr. Steve Bromage[1]
[1]Stockport NHS Foundation Trust, Manchester, United Kingdom, [2]BAUS

Introduction: Upper urinary tract TCC is a rare disease associated by poor prognosis in high risk disease. There are no randomized trials looking at lower ureteric excision techniques despite the risk of TCC seeding if the urinary tract is entered. We evaluated UK practice through analysis of the national BAUS registry.
Method: We analysed nephroureterectomy cases in the BAUS database for 2017. There were 4 options for technique of excision of the lower ureter. We analysed these against operative time, complications, length of stay and recurrence rates.
Results: 1092 nephroureterectomies were recorded, with lower ureteric technique entered for 490, which were used for analysis. Median age was 72 years and 64%

Table 1.

Comparative features of masses within donor kidneys								
Cystic Lesion **49%** (86/147 transplanted) (82/193 not transplanted)								
Single 43/86			**Multiple** 34/86			**Unrecorded** 9/86		
	T	**NT**		**T**	**NT**		**T**	**NT**
Small	35	13	Small	21	15	Small	6	5
Medium	3	3	Medium	0	4	Medium	0	3
Large	3	6	Large	3	7	Large	1	4
Unknown	2	2	Unknown	10	12	Unknown	2	8
	43	**24**		**34**	**38**		**9**	**20**
Solid Lesion **(Including benign, malignant and nodule)** **20%** (25/147 transplanted) (42/193 not transplanted)								
	T				**NT**			
Small	16				20			
Medium	2				6			
Large	0				4			
Unknown	7				12			
	25				**42**			
Mixed Lesion **(Including solid/cystic)** **4%** (2/147 transplanted) (10/193 not transplanted)								
	T				**NT**			
Small	1				6			
Medium	0				1			
Large	1				3			
Unknown	0				0			
	2				**10**			
Scarred Lesion **4%** (7/147 transplanted) (6/193 not transplanted)								
	T				**NT**			
Small	3				1			
Medium	1				0			
Large	0				1			

(Continued)

Table 1. (Continued)

Comparative features of masses within donor kidneys		
Cystic Lesion 49% (86/147 transplanted) (82/193 not transplanted)		
Unknown	3	4
	7	**6**
Unknown nature of lesion 24% (27/147 transplanted) (53/193 not transplanted)		
	T	**NT**
Small	11	6
Medium	2	3
Large	1	3
Unknown	13	41
	27	**53**

T = transplanted, NT = not transplanted.

male. 35% stage ⩾pT2 (n=172) and 45% high grade (n=222) TCC. 83% (n=405) were laparoscopic, 7% (n=34) open, 3% (n= 17) hand-assisted and 7% (n=32) robotic. Tumour site was renal pelvis 47% (n=229), upper ureter 11% (n=53) and lower ureter 24% (n=116). Lower ureter technique was endoscopic and pluck 21% (n=105), laparoscopic/robotic 36% (n=176), open extra-vesical 30% (n=146) and open intra-vesical 13% (n=63), and for lower ureteric tumours alone; 6% (n=7), 26% (n=30), 38% (n=44) and 30% (n=35) respectively. Operative time, blood loss, complications rates and length of stay were highest in open extra-vesical.

Conclusion: Lower ureteric excision technique varies widely, even when dealing with distal ureteric tumours, endoscopic pluck procedures were performed in 6%. This reflects the lack of evidence to indicate the procedure with best oncological control. Randomised controlled trials are required to evaluate this issue.

P8-12 A Cut Above? Retrospective review of a dual-centre experience – inferior vena cava resection in renal and adrenal cancer surgery of curative intention

Miss Sarah Tang[1], Mr Jonathan Noël[2], Professor David Nicol[2], Professor Roger Kockelbergh[3]

[1]Royal Free London NHS Foundation Trust, London, United Kingdom, [2]The Royal Marsden NHS Foundation Trust, London, United Kingdom, [3]University Hospitals of Leicester NHS Trust, Leicester, United Kingdom

Introduction: Intracaval extension presents a surgical challenge when renal and adrenal tumours are resected. Tumours may be adherent to the caval wall which may thus need to be resected. Resection of the involved segment without synthetic graft reconstruction has been described without prohibitive long-term morbidity.

Patients and Methods: Prospectively collected BAUS Data and Audit System records were obtained for two operating surgeons, at two specialist Urological Cancer centres. We also retrospectively reviewed case notes of patients with intracaval extensions of renal and adrenal tumours who underwent inferior vena cava (IVC) resection without reconstruction, assessing operative parameters, length of stay, complications and follow-up status.

Results: Twenty-eight patients underwent IVC resection without reconstruction between May 2013 and February 2017. No perioperative or early deaths occurred. Fourteen patients had complications: sepsis, pneumonia, congestive cardiac failure, acute kidney injury, symptomatic peripheral deep venous thrombosis, splenectomy, and chylous leak. Lower limb oedema was uncommon but invariably transient. To date, six patients have died and two progressed to metastatic disease, giving a 71% progression-free survival.

Conclusions: This case series illustrates our experience of IVC resection without reconstruction as an acceptably safe procedure. This should be considered as an alternative to the more widely advocated approach of graft replacement in this clinical scenario.

ePoster Session 9: General Urology 1 (BPH/LUTS) Tuesday 25 June 14:15-15:15 Carron Chairs: Rachel Morrison, Ased Ali & Clare Jelley

P9-1 Current Process and Outcomes of the Surgical Management of LUTS/BPE - National Snapshot Audit (AuSuM LUTS/BPE)

Miss Louise Paramore[1], Mr Gaurav Sali[1], Mr Henry Lazarowicz[2], Mr Richard Jones[2], Ms Magda Kujawa[3], Mr Rotimi David[4], Mr Amol Pandit[4], Miss Katherine Wilson[5], Mr Christopher Bates[5], Mr Christopher Bell[6], Mr Iqbal Shergill[6], Ms Christine Gan[7], Mr Bashir Mukhtar[8], Mr Timson Appanna[8], Rajan Veeratterapillay[9], Mr Jon Cobley[10], Mr Matthew Crockett[10], Ms Michelle Madigan[11], Mr Chris Dawson[11], Mr Richard Simpson[12], Mr Bachar Zelhof[12], Dr A Mitry[13], Mr Benjamin Starmer[13], Rono Mukherjee[13], S Khashaba[14], Mr Anand Dhanasekaran[14], Mr Joe Jelski[15], Mr John McCabe[16], Emma Fishleigh[16], Ms Nicola Pavan[17], Mr Greg Shaw[17], Thiru Gunendran[18], Kayree Chow[18], Mr Christopher Harding[9], Mr Christopher Betts[19], Mr Hrishi Joshi[1]

[1]University Hospital Of Wales, Cardiff, United Kingdom, [2]Royal Liverpool and Broadgreen University Hospitals NHS Trust, United Kingdom, [3]Stepping Hill Hospital, Stockport, United Kingdom, [4]Abertawe Bro Morgannwg University Health Board, United Kingdom, [5]Aneurin Bevan University Health Board, United Kingdom, [6]Betsi Cadwalader University Health Board, United Kingdom, [7]Charing Cross Hospital, London, United Kingdom, [8]Cwm Taf University Health Board, United Kingdom, [9]Freeman Hospital, Newcastle Upon Tyne, United Kingdom, [10]Gloucestershire Hospital NHS Foundation Trust, United Kingdom, [11]Good Hope Hospital, Heartlands Hospital and Solihull Hospital, Birmingham, United Kingdom, [12]Lancashire Teaching Hospitals NHS Foundation Trust, United Kingdom, [13]Leighton Hospital, Crewe, United Kingdom, [14]Sandwell and West Birmingham Hospitals NHS Trust, United Kingdom, [15]Southmead Hospital, Bristol, United Kingdom, [16]St Helens and Knowsley Teaching Hospitals NHS Trust, United Kingdom, [17]University College London Hospitals NHS Foundation Trust, United Kingdom, [18]Manchester University NHS Foundation Trust, United Kingdom, [19]Salford Royal NHS Foundation Trust, United Kingdom

Introduction: Surgical treatment for LUTS/BPH has experienced rapid changes with new treatments becoming available, however there is limited data on current national practices.

Method: A national audit was conducted for patients undergoing surgery for LUTS/BPE over an eight-week period. A two-part proforma, capturing departmental data examining processes (8 items) and patient outcome data (25 items), was designed and reviewed (NIHR Urology and BAUS Endourology committee). The proforma was completed at all sites and data analysis performed centrally.

Results: 503 patients underwent a procedure for LUTS/BPE across 19 NHS trusts in England and Wales from March-April 2018. Mean age of the cohort was 72 years (range 30-94). The most common indication for surgery was acute retention (46%) or LUTS (46%) (other 8%) with mean tissue resection of 24 grams. 54 patients had prior surgical treatment. TURP (monopolar 47%, bipolar 24%) was the commonest procedure. Immediate 14.5% (12.9% Clavien-Dindo$\leqslant$2) and delayed 9.9% (9.1%$\leqslant$2) complications were reported including four blood transfusions. Type of surgery performed (ablative vs non-ablative) was a significant predictor of immediate complications, length of stay and outcomes on multivariate analyses. NICE-approved treatments were offered often (59%) or always (18%). 65% of centres had consultant-led follow-up with 24% of centres reporting that the needs of trainees had an impact on treatment.

Conclusion: There appear to be significant variations in patient selection, pathways and treatments offered that may impact overall outcomes and resources. Newer treatments might warrant further detailed evaluation. This audit provides a framework for further focused research.

P9-2 The cost-effectiveness of thulium laser transurethral vaporesection of the prostate versus transurethral resection of the prostate

Dr Aideen Ahern[1], Dr Jo Worthington[1], Dr Athene J Lane[1], Ms Hilary J Taylor[1], Miss Grace Young[1], Professor Paul Abrams[2], Ms Lyndsey Johnson[2], Miss Aida Moure Fernandez[1], Professor Hashim Hashim[2], Mr Rafiyah Khan[2], Mr Tobias Page[3], Mr. Satchi Swami[4], Dr Sian M Noble[1]

[1]Bristol Randomised Trials Collaboration (BRTC), Population Health Sciences, Bristol Medical School, University of Bristol, Canynge Hall, 39 Whatley Road, Bristol, BS8 2PS, United Kingdom, [2]Bristol Urological Institute, Level 3, Learning and Research Building, North Bristol NHS Trust, Southmead Hospital, Bristol, BS10 5NB, United Kingdom, [3]Department of Urology. The Newcastle upon Tyne Hospitals NHS Foundation Trust, Freeman Hospital, Freeman Road, High Heaton, Newcastle upon Tyne, NE7 7DN, United Kingdom, [4]NHS Grampian, Department of Urology, Aberdeen Royal Infirmary, Foresterhill, Aberdeen AB25 2ZN, United Kingdom

Introduction: Transurethral resection of the prostate (TURP) is the most common procedure for benign prostatic obstruction (BPO) in the UK. New technologies are emerging to rival TURP, such as transurethral vaporesection of the prostate (ThuVARP). The UNBLOCS randomised controlled trial conducted within seven UK centres demonstrated

similar outcomes of ThuVARP compared with TURP, here we estimate the within trial cost-effectiveness of TURP versus ThuVARP.

Patients and Methods: Secondary care resource-use related to surgery and follow-up were collected from hospital records and trial participants for 1-year post surgery and valued using UK reference costs. QALYs (quality-adjusted-life-years) were calculated from the EQ-5D-5L questionnaire. Total adjusted mean costs, QALYs and incremental Net Monetary benefit values were calculated. Cost-effectiveness acceptability curves (CEAC) and sensitivity analyses addressed uncertainty.

Results: The total adjusted mean secondary care NHS cost in the TURP arm (£4185) was £71 (95% CI of -£486 to £343) lower than the ThuVARP arm (£4256). The ThuVARP operation took on average 20 minutes longer than the TURP procedure. The adjusted mean differences between the arms were similar in terms of Quality Adjusted Life Years (QALYs) (0.01 favouring TURP, 95% CI of –0.02 to 0.04). At the £20,000 per QALY NICE willingness to pay threshold there is an 81% probability that TURP is the cost-effective option compared with ThuVARP.

Conclusion: The expected reduction in costs of ThuVARP resulting from its ability to be done as a daycase did not materialise. Cost-effectiveness confirmed the conclusion from the effectiveness outcomes that TURP remains the gold standard procedure.

P9-3 The use of an adjustable male sling, Argus-T, for the treatment of stress urinary incontinence post-radical prostatectomy

Mr John Donohue[1]
[1]*Maidstone And Tunbridge Wells Nhs Truat, Maidstone, United Kingdom*

Introduction: The male sling has become a very attractive alternative to the artificial sphincter in recent years. We report our experiences of the first use of the Argus-T adjustable male sling in the UK.

Methods: Between October 2012 and November 2018, 40 men with stress urinary incontinence, following radical prostatectomy, had a sling inserted. The Argus-T system (Promedon, Cordoba, Argentina) comprises a silicone foam pad for soft bulbar urethral compression. The pad is attached to silicone cone columns that, after being passed with needles from the perineum through the obturator foramen, are adjusted with silicone washers to regulate and keep the desired tension against the urethra. The degree of tension is determined by using a cystoscope to measure the retrograde leak point pressure from the urethra to the bladder and tightening the system until the pressure is increased to 35 cm H2O. The primary end point was pad usage.

Results: The mean pad usage per day prior to surgery was 6.6 (2-14); 3 used convenes. 20 men required readjustment to tighten the slings. Total continence (zero pads) was achieved in 35 (88%) patients while the remaining 5 used 1 pad. They declined further surgery to adjust the sling. Three patients had their slings removed - two for infection and the other for pain. There were 4 cases of prolonged discomfort that settled and two case of retention, which resolved.

Conclusion: This new adjustable male sling safely and effectively controls sphincter incontinence in men after prostate surgery, with very encouraging results.

P9-4 TURP in urodynamicaly proven hypocontractile detrusor. Are we doing justice to our patients??

Dr Pratikkumar Shah[1], **Dr Gopesh Panwar**[1], **Dr Neeraj Sharma**[1], **Dr Vivek Joshi**[1], **Dr Jitendra Amlani**[1]
[1]*B.t. Savani kidney institute, Rajkot, India*

Introduction: In a small subset of patient's bladder outlet obstruction and detrusor hypo contractility overlap each other for LUTS.

Aim: To evaluate the efficiency of TURP in hypo-contractility detrusor patients.

Patients and methods: After institutional scientific and ethical committee approval prospective data of patients ($>$ 50 yrs) having symptoms of LUTS (IPSS $>$ 8) (Qmax $<$ 10 ml/sec) along with prostatomegaly (prostate volume $>$ 50cc) and with detrusor under activity (DUA) was collected during period from January 2015 to January 2017. Hypocontractile detrusor on urodynamic study was defined as Pdet Qmax$<$ 30 cm H2O and BOO was judged based on prostatomegaly on USG (prostate $>$50cc) with Qmax$<$10 ml/sec. Patients having carcinoma prostate on TURP histopathology reports & diabetics were excluded from study. Outcomes were determined by comparing pre-operative & post-operative values of IPSS score, QOL score, Qmax, PVR and Pdet@Qmax after 3 months of TURP.

Results: Out of initial 52 enrolled patients 36 were available for follow up. The mean duration of follow up was 16 months. Mean IPSS values improved from 21.1 to 16.3, QOL improvement from a preoperative mean value of 3.7 to postoperative value of 2.3 (p value $<$ 0.001). The Qmax improved from mean value of 7.5 preoperatively to 13.9 postoperatively. The PVR values reduced from 229 ml to 84 ml and bladder voiding efficiency improved from 46% preoperatively to 77% post operatively.

Conclusion: Patients who undergo TURP for BOO, despite having DUA, have significant improvement in their IPSS score and quality of life.

P9-5 Early single centre experience of prostatic urethral lift (PUL) using 4D technique for treatment for symptomatic benign prostatic hyperplasia (BPH)

Dr Raghav Varma[1], Mr Keng Ng[1], Mr Neil Barber[1]
[1]Urology Department, Frimley Park Hospital, Camberley, United Kingdom

Introduction: PUL, a minimally invasive procedure has been shown to be effective in treatment of BPH with no significant impact on sexual function (EAU guidelines). 4D Urolift is a new technique in implant delivery (P. Chin, Australia) used to maximally widen the prostatic urethra at the bladder neck and with the ability to manage obstructing median lobes.
Materials & Methods: The 4D Urolift technique places four implants at four quadrants of prostate towards the bladder neck; compared to standard PUL approach. Results of patients who underwent 4D UroLift from September 2017 to September 2018 were collected: pre and post-operative International Prostate Symptomatic Score (IPSS + QoL), sexual function (IIEF + MSHQ-EjD) questionnaires and uroflowmetry data. Statistical analysis was completed using paired t-test.
Results: 50 patients underwent 4D UroLift with mean age of 66 (50-87). There was 54% reduction in mean IPSS from 22.3 +/− 7.2 to 11.9 +/− 6.9 ($p < 0.001$). Significant QoL scores improved from 4.6 +/− 1.1 to 2.1 +/− 1.8 ($p < 0.001$). Improvement in Qmax from 10.1 +/− 2.6 to 14.6 +/− 6.4 mls/sec (p 0.002) was noted. There were no reports of worsening sexual function and retrograde ejaculation. These improvement in results were comparable to previous studies (Graph 1).
Conclusions: Initial results from 4D Urolift has shown good comparable, if not better outcome, with improvement of lower urinary tract symptoms without compromising sexual function. Further larger trials with longer follow up for 4D PUL technique will be useful to confirm these early promising results.

P9-6 Early Results of Prostatic Urethral Lift in Subjects with Acute Urinary Retention

Mr Mark Rochester[1], Mr Toby Page[2], Mr Neil Barber[3], Mr Oliver Kayes[4]
[1]Norfolk & Norwich University Hospital, Norwich, United Kingdom, [2]Newcastle Freeman Hospital, Newcastle, United Kingdom, [3]Frimley Park Hospital, Firmley, United Kingdom, [4]Leeds Teaching Hospital, Leeds, United Kingdom

Introduction: This study is the first assessment of feasibility and safety of Prostatic Urethra Lift (PUL) in patients with acute urinary retention (AUR) secondary to BPO.
Methods: Males ⩾ 50 years of age with symptomatic BPH, prostate volumes ⩽ 100 cc, and a failed trial without catheter (TWOC) while on alpha blocker were enrolled. Void trials were performed 3 days post-procedure and IPSS, QoL, BPHII, Qmax and PVR were assessed at 6-week follow-up. Successful first TWOC, mean time to catheter independence, adverse events and surgical interventions were analyzed.
Results: Thirty subjects who underwent PUL across 4 sites in the United Kingdom were enrolled. Mean prostate volume at baseline was 56.9cc and mean duration of most recent retention episode prior to PUL was 83.4 days. Retention status precluded baseline assessments, but at 6-week follow-up mean IPSS (9.7), QoL (1.3), BPHII (1.8), Qmax (8.7ml/s) and PVR (112.1ml) were available for at least 19 patients (Table 1). Results were compared to L.I.F.T 3-month outcomes and revealed many similarities, however, AUR subjects experienced lower QoL and Qmax scores ($p < 0.01$). Over 60% of

Table 1. Early outcomes for acute urinary retention patients in reponse to PUL.

Measurement		Timepoints		p-value
		PULSAR 6 weeks	LIFT 3 month	
IPSS Total Score	mean, median, SD [min - max], (n)	9.7 7.0, 7.2 [2 - 26], (21)	11.2 10.0, 7.68 [0-35], (136)	0.4
IPSS QoL Score	mean, median, SD [min - max], (n)	1.3 1.0, 1.2 [0 - 4], (21)	2.4 2.00, 1.72 [0-6], (136)	<0.01
BPHII Impact Score	mean, median, SD [min - max], (n)	1.8 1.0, 2.2 [0 - 7], (21)	2.9 2.00, 3.00 [0-13], (136)	0.1
Qmax (mL/sec)	mean, median, SD [min - max], (n)	8.7 8.1, 4.0 [4 - 20], (20)	12.4 11.0, 5.39 [3-28] (123)	<0.01
PVR (mL)	mean, median, SD [min - max], (n)	112.1 60.0, 134.4 [0 - 498], (19)	76.1 57.50, 83.10 [0-503], (136)	0.1

AUR subjects achieved a successful TWOC and 70% were catheter free by 1 month. Most adverse events were mild to moderate and resolved within two weeks. Only three subjects experienced serious adverse events that resolved by two weeks and one subject underwent a HoLEP 114 days post-procedure.
Conclusions: PUL facilitates spontaneous micturition in patients suffering from AUR and can offer an alternative to long-term catheter management or more invasive surgery.

P9-7 Comparative cost effectiveness of UroLift procedure to TURP

Miss Anne Carrie[1], Mr Hemant Nemade[1]
[1]Northampton General Hospital, Northampton, United Kingdom

Introduction: Since the beginning of the 20th century trans urethral resection of prostate (TURP) has been the first line treatment of benign prostatic hyperplasia (BPH). In 2015 the National Institute of Clinical Excellence (NICE) approved the use of prostatic urethral lift (UroLift) in the UK. Since the introduction of UroLift in Northampton General Hospital in 2018, it has been proven to be a cost-effective alternative treatment for BPH.
Method: A retrospective collection of data comparing cost and outcomes of 20 UroLift procedures compared to 20 TURP. The cost of each procedure was calculated using several parameters including the length of hospital stay, theater time and the income received by the hospital.
Results: The cost to the hospital of 20 UroLift was £45,194 and 20 TURP was £62,613. The NHS tariff paid to the hospital was £45,932 for 20 UroLift versus £41,856 for 20 TURP.
The cost saving for UroLift was £738 after 20 procedures versus a cost deficit of £20,758 for 20 TURP.
Conclusion: The minimally invasive UroLift procedure has proven to be cost effective when compared to the alternative TURP procedure and has even proved profitable.
Patient outcomes and length of stay have also significantly improved with UroLift compared to TURP.

P9-8 Greenlight photoselective vaporisation of the prostate in high-risk patients: outcomes from a single-centre series

Mr Matthew Trail[1], Mr Alexander Laird[1,2], Miss Jennifer Jones[1], Mr Lewis Green[2], Miss Joanne Kiang[2], Mr Antony CP Riddick[1], Mr Prasad Bollina[2], Mr Mark L Cutress[1], Mr Simon Phipps[1]
[1]Western General Hospital, Edinburgh, United Kingdom, [2]University of Edinburgh, Edinburgh, United Kingdom

Introduction: Greenlight laser photoselective vaporisation of the prostate (GL-PVP) has emerged in recent years as an alternative to TURP in the surgical management of

Northampton General Hospital - Urology
Urolift Savings - 20 FCEs
As of October 2018

	Urolift	TURP
Tariff for treating 20 FCEs	£45,932	£41,856
Treatment cost for 20 FCEs	£45,194	£62,613
Net income from tariff	£738	-£20,758
Net saving for 20 FCEs using Urolift treatment vs TURP		£21,495
Bed Days Freed by using Urolift		36.7
Theatre Hours freed by using Urolift		8.4
8.4 Theatre Hours Freed at £743 per hour gives a saving of		£6,242
36.7 Bed Days Freed at £270 per day gives a saving of		£11,529
Flexible Cystoscopy - increased activities (net profit)		£1,043

LUTS secondary to BPE, with RCTs reporting similar efficacy with fewer adverse outcomes. As a consequence, NICE recommends GL-PVP for patients with LUTS secondary to BPE but cites insufficient evidence to advocate its use in higher risk patients.
The aim of this study was to assess the safety and efficacy of GL-PVP as a treatment option in 'high-risk' groups - specifically patients on anticoagulation and those with large prostates, in urinary retention or with significant co-morbidity.
Methods: All patients who underwent GL-PVP at a single centre over a seven-year period (2010-2017) were identified using a prospectively-collected operating theatre database. Retrospectively, demographics and various pre-operative clinical data were collected to identify patients fulfilling the 'high-risk' criteria. Surgical and functional outcomes were compared in patients with and without high-risk parameters.
Results: From preliminary analysis of over 900 patients, 31.7% of patients were anticoagulated or taking antiplatelet therapy, 34.7% had urinary retention and 8.1% had prostate volume >100cc. The incidence of major perioperative adverse events in high-risk patients was low. Median length of stay was one day, with 25% of patients treated as a day-case. Functional outcomes in 'high-risk' patients were comparable with the published literature for TURP.
Conclusions: From this cohort, GL-PVP can be considered a safe and efficacious procedure in 'high-risk' patients. There is potential to optimise health service efficiency by offering day-case GL-PVP in selected patients.

P9-9 Is Rezum Water Vapour Therapy a feasible option for men with larger prostate glands?

Miss Somita Sarkar[1], Mr Max Johnston[1], Dr Tom Farmer[1], Dr Andrei Dontu[1], Ms Tina Gehring[1], Mr Govinda Rajkumar[1], Mr Tim Nedas[1], Mr Amr Emara[1], Professor Richard Hindley[1]
[1]Basingstoke And North Hampshire Hospital, Basingstoke, United Kingdom

Introduction: Rezum water vapour therapy is a minimally invasive treatment for symptomatic BPH. The surgical treatment options for men with larger prostate glands are rather limited, and invariably involve a significant inpatient stay.
Methods: This study involves a prospective analysis of data for men undergoing Rezum comparing pre-treatment assessments with 3 months follow-up data. Gland volumes in the cohort ranged from between 20 and 120ml. We compared men with glands <80mls and >80mls. Pre and post procedure assessments included validated questionnaires (IPSS with QoL, IIEF-5), urinary flow rate (Qmax), prostate volume and length of stay. 125 patients were included of whom 19 had gland volumes >80 mls.
Results: The mean IPSS before and 3 months after treatment for the cohort was 22.0 and 5.6 respectively (22.6 for small glands and 21.0 for large glands pre, p=0.44 and 5.6 vs. 5.7 post, p=0.89). The QoL scores in small and large glands were 4.4 and 4.3, p=0.83 pre-treatment and 1.4 vs. 1.0 post, p=0.44. There were no significant differences in flow rate or length of stay. A single patient in each group required bladder washout in theatre due to secondary haemorrhage. 6 patients in the small gland group were treated for UTI compared to 1 in the large gland group.
Conclusion: In this series there was no significant overall difference in early post treatment outcomes when comparing both groups. Further studies are necessary to determine a sensible 'upper limit' in gland size for those wishing to consider this new therapy.

P9-10 Morbidity and Economic Burden of Catheterised Patients on TURP Waiting List

Miss Maire Mageean[1], Mr Matthew Tyson, Mrs Siobhan Woolsey, Mr Ajay Pahuja
[1]Belfast City Hospital, Belfast, United Kingdom

Patients who are on the waiting list for TURP with a catheter in situ encounter a number of issues whilst awaiting surgery. Data collected found that the longest waiter was 765 days, which lies well outside target. We have calculated the cost of a TURP to be £4224 and compared this to the economic burden of catheter associated issues, to see if there is benefit to operating earlier.
The patients on the TURP waiting list with a catheter in situ were included in the Audit.
A "morbidity" included any ED attendance which required intervention for catheter problems, such as catheter change, UTI, bleeding, and blockage. We also included any inpatient admissions as a result of catheter associated problems. It is estimated that 55% of patients on the waiting list attended ED. Furthermore, 45% of patients required an Inpatient admission. The cost of ED attendances was calculated to be £9676 and inpatient admissions totalled £30,440.
This data supports one of the recommendations included in the "Getting It Right First Time" campaign. There is definite room for improvement both economically and also to improve the quality of life of the patients under our care.

ePoster Session 10: Getting it Right First Time (GIRFT) Tuesday 25 June 14:30-15:10 Clyde Auditorium Chairs: Luke Forster, Simon Harrison & James Green

P10-1 Improving patient outcomes, trainee supervision and resource allocation with acute operating lists

Dr Ajanthan Loganathan[1], Dr Philip Smith[1,2,3], Dr Stefan Antoniou[1,2,3], Dr Garrath Evans[1,2,3], Dr Simon Pridgeon[1,2,3]

[1]Cairns Hospital, Cairns, Australia, [2]Northern Urology, Cairns, Australia, [3]James Cook University, Cairns, Australia

Introduction: We introduced a regular acute urology operating session in 2015 with the aim of ensuring high quality consultant led emergency care, improving trainee supervision and increasing primary ureteroscopy for patients with urinary tract stones.

Methods: We examined a prospectively collated database of the acute-list operations and analysed outcomes and the potential benefits for surgical resources and training.

Results: Since 2015, 608 patients have been treated on the acute urology operating list. All lists were directly supervised by a consultant urologist and staffed by urologically trained theatre staff. 89% of cases were performed by a urology trainee under direct consultant supervision; 11% of cases were performed by a consultant urologist. There has been a year-on-year reduction in out of hours operating with proportion of out-of-hours procedures being 44%, 33%, 30% and 11% for the consecutive years 2015-2018. There was also a reduction in the number of emergency cases being treated on elective surgical lists from 40% to 15%. 96% of patients with non-infected ureteric stones who were treated on the acute list had an attempted primary ureteroscopy with a stone clearance rate of 85%.

Conclusion: The introduction of the designated urological acute theatre has allowed supervised emergency surgery to be carried out in a safe environment with appropriate consultant cover. The ability to perform regular primary ureteroscopy has reduced the burden of stent related morbidity and impact on elective operating lists for staged stone surgery.

P10-2 Implementation of MDT evaluating multi-parametric prostate MRI: Is double reporting needed?

Mr Mohamed Noureldin[1,2], Mariana Tanaka[1,2], David Eldred-Evans[1,2], Feargus Hosking-Jervis[1,2], Martin Connor[1,2], Deepika Reddy[1,2], Taimur Shah[1,2], Saiful Miah[1,2], Charlie Khoo[1,2], Arnas Rakauskas[1,2], Shahzad Ahmad[4], Kaljit Kaur[4], Neha Sihra[3], Emma Cullen[1], Joahnnes Jaenicke[1], Marwa Jama[4], Andrew Brown[4], Dione Lother[4], Heather Bhola-Stewart[2], Joanne Sethi[2], Alexandra Frode[2], Amish Lakhani[2], Andrea Rockall[2], Nishat Bharwani[2], Siham Sudderuddin[2], Victoria Stewart[2], Andrew Smith[2], James Carton[2], Josephine Lloyd[2], Ethna Mannion[2], Suchita Joshi[5], Elizabeth Pegers[5], Kunju Harikrishnan[4], Kashif Burney[4], Nalin Khosla[4], Amy Davis[4], Pieter LeRoux[4], Tharani Nitkunan[4], Kathie Wong[4], Rami Issa[3], Chris Anderson[3], Martin Clark[2], Henry H Tam[2], Manit Arya[1,2], David Hroud[2], Mathias Winkler[1,2], Stephen Gordon[4], Hasan Qazi[3], Hashim U Ahmed[1,2]

[1]Imperial Prostate, Department of Surgery and Cancer, Faculty of Medicine, Imperial College London, London, UK, [2]Imperial Urology, Imperial College Healthcare NHS Trust, Charing Cross Hospital, London, UK, [3]Department of Urology, St George's Healthcare NHS Trust, Blackshaw Road, UK, [4]Department of Urology, Epsom, Epsom and St Helier, University Hospitals NHS Trust, Surrey, UK, [5]RM Partners, 5th Floor, Alliance House, 12 Caxton Street, UK

Introduction and Objectives: MDTs are under increasing pressure in terms of workload volume and complexity. Our diagnostic pathway was initially set up with prospective double reporting of mpMRI scans via a dedicated MDT. We aimed to determine the impact of this process.

Materials and methods: Of 580 biopsy-naïve patients who underwent pre-biopsy mpMRI, 273 had a second report carried out (April/2017-October/2018). Both reporters were expert uro-radiologists each with over 5 years' experience in mpMRI prostate reporting.

A second mpMRI review 1-2 weeks after the initial report occurred within a MDT as a quality control measure. Men were recalled for a targeted and systematic biopsy if MRI scores were changed from non-suspicious to suspicious (4 or 5 or score 3 with PSA-Density >0.12).

Results: Mean PSA 7.4 (SD$\pm$4.8) ng/ml and PSA-density 0.18 (SD$\pm$0.16).

MRI Likert scores were concordant in 248/273 (90%) and 25/273 (9.1%) were discordant. 8/25 (32%) discordant reports were 'down-scored' and 7/25 (28%) were 'up-scored'.

Of the discordant cases, only 4/273 (1.4%) required a change in management from 'no biopsy advised' to 'biopsy advised' and were recalled. Two of these had no cancer on subsequent biopsy whilst one had 2mm Gleason 3+3=6. One patient had 3mm 3+4=7 subsequently managed with active surveillance.

Conclusion: We have shown that variability between expert uro-radiologists for mpMRI is low. The MDT double reporting had minimal clinical impact on biopsy rates and significant cancer detection rates. Shifting to single reporting would save 60 minutes of MDT time per month estimated at £30,303 per annum.

P10-3 Acute Ureteric Stones - Using Quality Improvement Processes to Achieve the New BAUS and GIRFT Targets

Dr Edward Balai[1], Dr Shelina Runa[1], Mr Samuel Folkard[1], Mr Christopher Bastianpillai[1], Mr Stuart Graham[1], Professor James Green[1], Ms Pallavi Pal[1]

[1]Department of Urology, Whipps Cross University Hospital, Barts Health NHS Trust, London, United Kingdom

Introduction: Guidelines from the British Association of Urological Surgeons (BAUS) provide management standards for acute ureteric stones. These include a 4-week target for time from diagnosis-to-definitive management for those requiring intervention, and from diagnosis-to-clinic review in patients managed expectantly. The Urology GIRFT Report 2018 recommended that patients are offered specific stone clinics to offer conservative treatment; offered this follow-up in a timely manner; and provided timely readmission for definitive surgery where required.
We aimed to use quality improvement measures through plan-do-study-act (PDSA) cycles to try and improve our acute service and achieve these BAUS standards and GIRFT recommendations.
Materials and Methods: First cycle changes aimed for a definitive procedure within 12 weeks and introduced a stent theatre diary and stent education leaflet. The second cycle involved the introduction of a Consultant-led Acute Stone Clinic with a pathway for primary URS. The time to definitive procedure was re-examined after each cycle.
Results: Percentage of patients receiving definitive procedure within 4 weeks improved from 3.2% to 98%. Over 50% of patients were seen in the clinic within 1 week of diagnosis; of those managed expectantly, 59% had a second clinic review within 4 weeks. Rate of re-presentation to A&E was reduced from 3.6 to 1.6 episodes/month.
Conclusions: These processes have improved early definitive management rates as per BAUS and GIRFT guidelines. This has led to improved patient outcomes and experience, while helping to reduce the burden on our busy Emergency Department.

P10-4 Re-thinking the prostate cancer diagnostic pathway: the acceptability of the Rapid Access Prostate Imaging and Diagnosis (RAPID) pathway

Dr Mariana Bertoncelli Tanaka[1,2], Mr David Eldred-Evans[1,2], Mr Feargus Hosking Jervis[1], Mr Martin Connor[1,2], Miss Deepika Reddy[1,2], Mr Taimur Shah[1,2], Mr Saiful Miah[1,2], Mr Christopher Khoo[1,2], Mr Mohamed Noureldin[1,2], Mr Arnas Rakauskas[1,2], Mr Shahzad Ahmad[4], Miss Kaljit Laur[4], Miss Neha Sihra[3], Miss Emma Cullen[1], Mr Johannes Jaenicke[1], Miss Marwa Jama[4], Mr Andrew Brown[4], Dione Lother[4], Mrs Heather Bhola-Stewart[2], Mrs Joanne Sethi[2], Miss Alexandra Forde[2], Dr Amish Lakhani[2], Dr Andrea Rockall[2], Dr Nishat Bharwani[2], Dr Siham Sudderuddin[2], Dr Victoria Stewart[2], Dr Andrew Smith[2], Dr James Carton[2], Dr Josephine Lloyd[2], Dr Ethna Mannion[2], Miss Suchita Joshi[5], Mrs Elizabeth Pegers[5], Dr Kunju Harikrishnan[4], Dr Kashif Burney[4], Dr Nalin Khosla[4], Dr Amy Davis[4], Mr Pieter LeRoux[3], Miss Tharani Nitkunan[4], Miss Kathie Wong[4], Mr Rami Issa[3], Mr Chris Anderson[3], Dr Martin Clark[2], Dr Henry Tam[2], Mr Manit Arya[1,2], Mr David Hrouda[2], Mr Mathias Winkler[1,2], Mr Stephen Gordon[4], Mr Hasan Qazi[3], Professor Hashim U. Ahmed[1,2]
[1]Imperial Prostate, Department of Surgery and Cancer, Faculty of Medicine, Imperial College London, London, United Kingdom, [2]Charing Cross Hospital - Imperial College Healthcare NHS London, London, United Kingdom, [3]Department of Urology, St George's Healthcare NHS Trust, London, United Kingdom, [4]Department of Urology, Epsom, Epsom and St Helier, University Hospitals NHS Trust, Surrey, United Kingdom, [5]RM Partners, London, United Kingdom

Introduction and Objective: Our new 'one-stop' Rapid Access Prostate Imaging and Diagnosis (RAPID) pathway, across three hospitals in our region, streamlines the traditional pathway. We aimed to determine patient acceptability of the combination of same-day mpMRI, clinical review and transperineal prostate biopsy or discharge.
Methods: Consecutive patients on the RAPID pathway were approached for detailed feedback via standardised questionnaires through an independent third party to minimize data collection bias. Patients were approached on only certain days.
Results: Of 837 patients within RAPID (April/2017 to September/2018), 62 completed the questionnaire. The mean time from referral to mpMRI +/− biopsy was 10.3 (7 to 13) days. 83% (52/62) thought that time from GP referral to first appointment was sooner than expected. 66% (41/62) of patients stated that time from referral to final diagnosis was shorter than expected. 12.9% (8/62) would have preferred the mpMRI and biopsy on different days. The overall patient's experience was rated as very good by 54/62 of patients, fairly good in 7/62 of cases and only one report as neutral experience. There was no negative experience reported. All patients stated that there was a good interaction between primary and specialist care whilst in the pathway.
Conclusions: The RAPID pathway provides a fast-access, robust, one-stop approach to prostate cancer diagnostics. Patient acceptability is high. As a result of our clinical and patient acceptability, further roll-out to 3-4 more centres is underway.

P10-5 Improving secondary care pathway for patients with ureteric colic: Feasibility and outcome of primary ureteroscopy in emergency theatre at a large district general hospital

Mr Kee Wong[1], Dr Jeffy Paul[1], Mr Snehal Patel[1], Mr James Glendinning[1]
[1]Wirral University Teaching Hospital, Wirral, United Kingdom

Introduction: In line with the GIRFT report, we began to adopt the recommendation to provide definitive treatment for suitable patients with ureteric stones, rather than interim ureteric stent. We assessed the feasibility and outcome of performing primary ureteroscopy in emergency theatre.
Patients and Methods: From June till November 2018 (6 months), all patients with CT confirmed ureteric stones requiring intervention in emergency theatre were included. Data regarding demographic, stone, various outcomes including timing of procedure, length of hospital stay, complications and re-admission were prospectively recorded.
Results: A total of 37 patients (11 female: 26 male; mean age 50, range 17-87) were included. 70%(26/37) had primary ureteroscopy. Out of 11/37 patients who had stent only, three had access failure, five had ureteroscopy abandoned due to initial pus drainage and three had pre-operative decision to stent only due to associated infection.
For primary ureteroscopy, mean stone size was 6.5mm(2-19). One patient had bilateral ureteric stones and three ipsilateral ureters had more than 1 stone. The ratios for stone location upper:mid:distal were 7:2:18 respectively(27 ureters). Majority of cases(73%) were performed within the same proposed day of listing on emergency theatre. Mean operative time was 41 minutes(13-121). Median length of stay post-operation was 1 day(0-12).
For complications, 2 patients had prolonged admission (one post-operative pain, another with non-urological issue) and 1 with ureteric perforation. 8%(2/26) had non-elective re-admission within 30 days. 12%(3/26) required further ancillary procedure.
Conclusion: In our experience, primary ureteroscopy in emergency theatre is safe, practical and achievable in appropriated selected patients.

ePoster Session 11: Stones, Imaging and Upper Tract Disorders 2
Tuesday 25 June
15:45-16:45
Boisdale
Chairs: Jake Patterson, Khurshid Ghani & John Withington

P11-1Total radiation burden in patients presenting with acute ureteric colic in the modern era

Mr Hugo Lavigueur-Blouin[1], Miss Neha Sihra[1], Miss Elsie Mensah[1], Miss Natasha Bauer[1], Mr Ken Anson[1], Mr Marco Bolgeri[1]
[1]St George's Hospital, London, United Kingdom

Introduction: Non-contrast CT KUB (NCCT) has become the gold standard in the diagnosis of acute ureteric colic, though the undisputed advantages need to be weighed against radiation risk. We aim to determine the total radiation burden associated with a single acute ureteric colic episode at our tertiary institution in the era of NCCT.
Patients and Methods: We reviewed the records of 51 consecutive patients with NCCT-confirmed acute ureteric colic.
Each episode was defined from the time of presentation to either the time of imaging-confirmed stone passage (SP), or last intervention (I) required for stone clearance. Total radiation doses were calculated for each episode.
Results: SP occurred in 52% patients with a median episode duration of 72 days. Mean stone size was 6.8 mm (range 2-28). All patients had at least one NCCT. 34% had 2 and 4% had 3 scans.
The average total effective dose received during an acute episode was 10.60 mSv (range 1.94-45.78 mSv; 8.80 mSv (SP) vs 12.53 mSv (I)). For patients requiring intervention, 33% received a total effective dose between 10-20 mSv, and 19% received $>$ 20 mSv.
The relative contribution of NCCT encompassed 87.9% of total effective radiation (95.5% (SP) vs 79.5%(I)). For patients requiring intervention, the average procedure-related total effective dose was 1.76 mSv.
Conclusions: Total radiation exposure for an acute ureteric colic episode at our institution is approximately 10mSv. Most of it is NCCT-related. This is useful benchmark for the development of future practice to reduce radiation and for comparison with other institutions.

P11-2 What happens to patients who have a negative CT KUB for ureteric colic?

Mr Joachim Jimie[1], Dr Anthony Mitry[1], Mr Ben Starmer[1], Mr Rono Mukherjee[1]
[1]Leighton Hospital, Crewe, United Kingdom

Introduction: CT KUB is the gold standard in diagnosing ureteric colic. Timely diagnosis allows urologists to reassure patients that no acute intervention is required if the stone is small, pain controlled and there is no sepsis / AKI. If CT KUB excludes urolithiasis then urology admission may be avoided altogether. We aim to assess the outcomes of patients who present to A&E with suspected renal colic and no evidence of ureteric calculi on immediate CT KUB.
Patients and Method: Retrospective review of patients undergoing immediate CT KUB in A&E for suspected ureteric colic between 01/01/2016 & 31/12/2017.
Results: 850 CT KUB examinations were performed.
545 (64%) were negative for ureteric stones. 90 (11%) were admitted with an alternative diagnosis to a different speciality (69 general surgery, 11 O&G, 7 medicine). 99 (12%) patients were admitted to urology (pyelonephritis,

recently passed stone, renal stones). 3 (0.4%) life threatening emergencies were diagnosed (AAA, aortic dissection and spontaneous renal artery bleed). 356 (42%) patients were discharged from A&E.
The remaining 275 (32%) showed a ureteric stone [median stone size = 4mm]. 173 of these were admitted (20%). Median LOS = 1 night. 102 (13%) were discharged from A&E.167 (61%) had successful stone passage without definitive treatment.
In total 458 (54%) patients were discharged from A&E following their urgent CT KUB and 68% patients avoided urology admission.
Conclusion: Immediate CT KUB in A&E helps facilitate immediate discharge in 54% of patients. Urology admission was avoided in 68% of cases.

P11-3 Incidental findings of bladder lesions during radiological investigation

Mr Morkos Iskander[1], Dr Jane Belfield[1], Ms Rebecca Hamm[1]
[1]Royal Liverpool And Broadgreen University Hospitals, Liverpool, United Kingdom

Background: With increasing use of detailed cross-sectional imaging for investigation and staging of disease there is a rise in incidental findings the relevance of which is uncertain. Resulting investigations place additional demands on radiology and other specialties, cause anxiety to patients and escalate the cost to healthcare providers. The diagnostic accuracy of these 'incidentalomas' in the lower urinary tract is not well reported.
Methods: A search of all radiology requests and reports using the terms 'urology referral', 'urological referral', 'cystoscopy', 'cystoscopic', 'bladder mass, 'bladder tumour' and 'muscle invasive' was made for 2017. Case notes were reviewed for all identified patients. Those with prior history of urological malignancy, existing referral to urology, or requests made by urologists were excluded.
Results: 664 cases were identified and screened, with 36 eligible for inclusion. Out of 13 lesions on ultrasound four cases were confirmed to be bladder tumours (30.77%). Of 23 abnormalities on CT 10 were bladder tumours, 3 tumours in the lower ureter and one locally advanced prostate cancer (60.87%).
Discussion: The diagnostic accuracy of malignancy in these incidental bladder lesions both on ultrasound (30.1%) and CT (60.9%) is higher than that of visible haematuria and as such further urgent investigation is warranted and should be prioritised in line with 2 week wait criteria.

P11-4 Does relative renal function improve after intervention for chronic ureteric obstruction?

Dr Zhi-Yang Low[1], Mr Vimoshan Arumuham[1], Ms Siân E Allen[1], Professor Jamshed Bomanji[2], Mr Daron Smith[1]

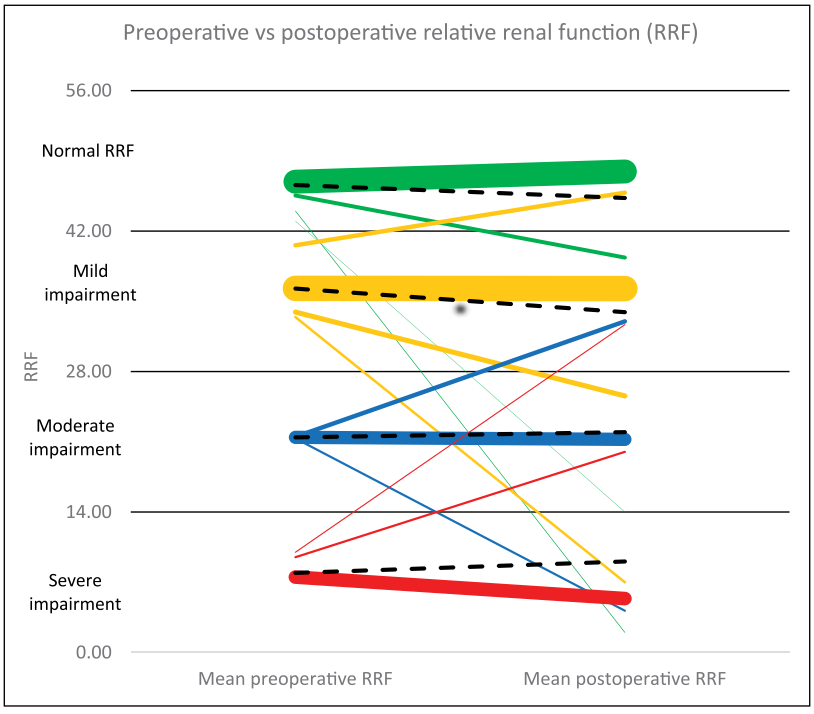


Figure 1. Mean preoperative vs postoperative relative renal function (RRF) stratified into categories; widths of lines are proportional to number of patients. Dotted lines show the overall trend within each category.

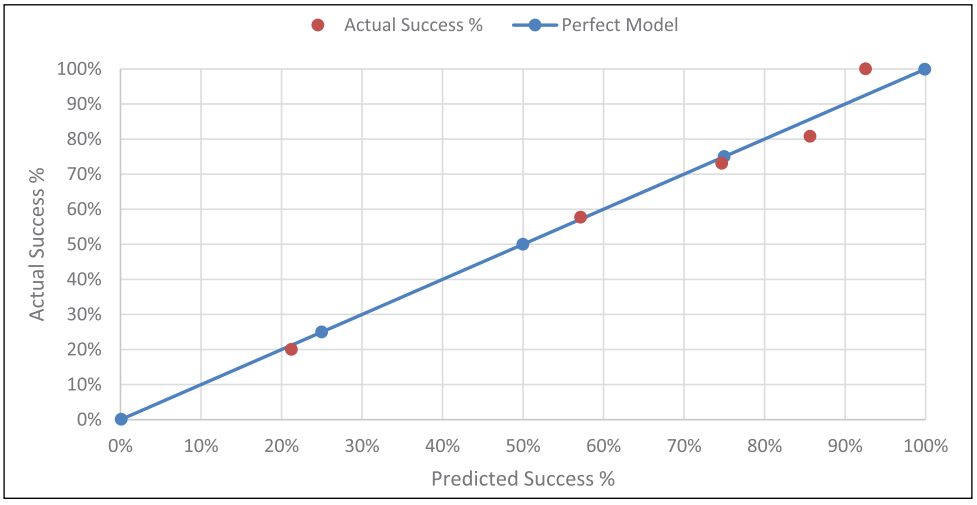
[1]Institute of Urology, University College London Hospitals NHS Foundation Trust, London, United Kingdom, [2]Institute of Nuclear Medicine, University College London Hospitals NHS Foundation Trust, London, United Kingdom

Introduction: Unilateral renal function often deteriorates with chronic ureteric obstruction. Our objectives were to determine the change in relative renal function (RRF) by MAG3 renography after intervention for ureteric obstruction, and to identify any clinical/epidemiological factors which influence long-term outcomes.
Methods: We identified 281 patients who had MAG3 renography before and after intervention for unilateral ureteric obstruction. Patients were divided into categories with normal preoperative RRF (43-57%), mild (29-42%), moderate (15-28%) and severe (<15%) impairment of preoperative RRF in the affected kidney. Patient demographics, type of obstructive uropathy and type of intervention employed were analysed. Each group was assessed both for the absolute change in RRF and change in RRF category postoperatively.
Results: The mean patient age (SD) was 50.2 (16.4) with 61.6% being female. Overall, the mean pre- and postoperative RRF did not differ significantly (31.69 [14.0]% vs 30.75 [15.4]%, P=0.07). The majority of patients remained in their preoperative RRF group: 82.3% of normal, 67.7% of mild, 66.7% of moderate and 80.4% of patients with severe RRF impairment, as shown in Figure 1.
Patients with mildly impaired preoperative RRF showed a significant worsening postoperatively (36.27% vs 33.92%, P=0.006). The other three groups showed no significant change in RRF postoperatively.
Multivariate logistic regression analysis showed receiving a nephrostomy (OR 10.52, 95% CI 1.60-69.13) was a positive predictor of improvement in RRF category postoperatively.
Conclusions: Our results show that RRF does not improve significantly after intervention for ureteric obstruction. The aim should therefore be maintaining existing renal function and relieving symptoms.

P11-5 An algorithm based upon prognostic factors to guide patient selection when managing ureteric stones with Shock Wave Lithotripsy

Mr Joshua Hemmant[1], Mr Christos Pournaras[1], Mr Steven Wood[1], Miss Emma Baston[2], Mr Karyee Chow[1], Mr Graham Young[1]
[1]Manchester University Hospitals NHS Foundation Trust, Manchester, United Kingdom, [2]Salford Royal NHS Foundation Trust, Manchester, United Kingdom

Introduction: Shockwave lithotripsy (SWL) is considered to be an effective non-invasive treatment option for ureteric stones. The aim of this study was to create an algorithm based upon significant prognostic factors to guide patient selection for SWL.
Patients and Methods: We identified 150 patients attending for SWL for ureteric stones between October 2010 and February 2016. Data was collected retrospectively from electronic case notes and radiological images. All patients were treated with an on-site Storz Modulith SLX-F2 lithotripter. An algorithm was created using 'R'.
Results: 133 patients were treated and 66% of those were deemed radiologically stone free with SWL. Four factors were found to be independently statistically significant with regards to stone free status; age (p=0.003), Hounsfield units (p=0.002), prior nephrostomy insertion (p=0.022) and prior stent insertion (p=0.002). Our resulting algorithm is:



Probability of Success = 1 / (1 + Exp (-x))
x= 6.601-(0.043*Age) - (0.004*[Hounsfield Units]) - (1.694*[Has Neph]) - (2.761*[Has Stent])

Conclusion: Our SWL success would likely increase with improved patient selection. Age appears to be a novel significant factor in stone passage. This is an interesting observation worthy of further study given ageing populations in the developed world. It may be explained by difficult patient positioning or anatomical and physiological changes, as found in cadaveric and animal studies. The algorithm will require further validation in order to confirm our findings, however based upon our perfect predicted success model versus actual algorithm success, the results have proven very encouraging.
Graph demonstrating the predicted success of the algorithm versus the actual success seen.

P11-6 Is a CT KUB on the day of surgery for ureteric stones effective from a clinical and organisational perspective?

Mr Kelvin Adasonla[1], Mr Hamid Abboudi[1], Mr Ali Tasleem[1], Mr Giuseppe Celentano[1], Dr Martina Smekal[1], Mr Vimoshan Arumuham[1], Mr Simon Choong[1], Miss Siân Allen[1], Dr Clare Allen[1], Mr Daron Smith[1]
[1]Institute of Urology, University College London Hospitals, London, United Kingdom

Introduction: A CT KUB on the day of surgery for patients with ureteric stones but without renal calculi helps reduce pre-operative imaging and avoids a possible "negative ureteroscopy". We aimed to evaluate the effectiveness of on the day CT KUB for scheduled patients and for its potential to cause theatre under-utilisation.
Methods: We retrospectively audited patients with ureteric stones listed for planned ureteroscopy in a dedicated stone and endourology theatre, between 01/08/2016 and 31/08/2018, reviewing on the day imaging to determine who had already passed their stones by the day of surgery. We then analysed theatre utilisation reports on the days where a ureteroscopy was cancelled due to CT-confirmed passage of ureteric stone.
Results: 30% (20/67) patients audited had passed their stone by the day of the procedure, occurring over 17 theatre lists. Additional emergency / un-planned procedures took place on 15 out of 17(88%) of these lists during which a total of 21 emergency/unplanned procedures were performed. The most common emergency procedures were nephrostomy-related and cystoscopic insertion of ureteric stents (9 and 6 cases respectively). However, 4 primary ureteroscopies for acute ureteric colic patients were also performed.
Conclusion: A Low dose CT KUB on the day for elective patients avoids an unnecessary general anaesthetic and negative ureteroscopy whilst creating theatre capacity for emergency patients. This benefits the scheduled patient and allows the possibility for definitive treatment for emergency patients as per recent GIRFT and NICE guidance.

Emergency procedure performed utilising theatre slot created by CT KUB on the day	Frequency
Rigid Cystoscopy and Ureteric Stent Insertion	6
Nephrostomy Insertion	4
Change of nephrostomy	4
Nephrostogram	1
Ureteroscopy	4
Ureteric Stent Removal under Local Anaesthetic	2
TOTAL	**21**

P11-7 Use of a double entry database to follow up ureteric stent use and evaluate wait times to definitive ureteroscopy in obstructing urolithiasis

Dr Hamish Green[1], Mr Quinten King[1]
[1]Mid Central DHB, Palmerston North, New Zealand

Introduction & Objectives: Ureteric stents are used to relieve ureteric obstruction, facilitate endoscopic management of urolithiasis, reduce intra-operative complications and improve stone-free rates. The risks of loss to follow up are considerable. Stent use increases the risk of post-ureteroscopy sepsis and they cause unpleasant symptoms for patients. The risk of sepsis increases five-fold with stent dwell times longer than 30 days.
We evaluated our follow up rate and wait times to definitive ureteroscopy for obstructing ureteric stones using our double entry database.
Methods: An electronic database of all patients who have a ureteric stent inserted is kept along with a separate database which records the use of all stents opened. A retrospective analysis of all patients with ureteric stents inserted from December 2017 to July 2018 was performed.
Results: 140 patients were included. No patients were lost to follow up. 19% had stents placed acutely for obstructing stones with a mean time to definitive ureteroscopy of 58 days (median 43 days). Mean dwell time post-ureteroscopy for patients with urolithiasis who self-removed their stent (n=52) was 4.5 days and 31.8 days for those who required cystoscopic removal (n=17). 10% of patients re-presented to hospital with stent-related pain.

Conclusions: Our double entry system helps to ensure a 100% follow up rate. The mean time from stent placement to definitive ureteroscopy of 58 days may increase the risk of post-ureteroscopy sepsis. Further research is required to evaluate our rate of infectious complications.

P11-8 Analysis of kidney stone composition in a contemporary, large, region wide cohort from the UK; are things really changing?

Mr Alistair Rogers[1], Mr Sidney Parker[1], Mrs Susan Troupe[2], Mr David Kennedy[2], Dr Charles Thomson[1], Mr Matthew Shaw[1], Dr John Sayer[1]
[1]Freeman Hospital, Newcastle Upon Tyne NHS Foundation Hospitals Trust, Newcastle Upon Tyne, United Kingdom, [2]South of Tyne and Wear Pathology Service, Gateshead, United Kingdom

Introduction: Information on kidney stone characteristics is based on historical cohort data. There have been well documented changes in obesity rates in regions of the UK and metabolic syndrome is an important risk factor in urolithiasis. Our aim was to analyse stone composition in a large, current, region wide cohort to assess for potential changes.
Methods: A central pathology centre analyses all renal stones within the region utilising Nicolet 380 FTIR spectrometry. This database was analysed for all renal tract stones between years 2013-2018. Non-Renal/ Ureteric stones were excluded. 5998 were included in the study. In mixed stones the predominant type was when >50%. Open access government data on obesity was analysed.
Results: Median age was 57 and Male: Female ratio 1.8:1. Data from 10 hospitals was included. 63% were pure stones and 80% calcium based. Stone compositions are described in table 1. Overweight and obesity nationally have increased from 53% (1993) to 61% (2016). In parts of our region it is as high as 74%.
Discussion: To the best of our knowledge this is one of the largest contemporary cohorts of renal stone characteristics in the UK and Europe. It provides valuable insights into the current biochemical status of urolithiasis. Despite increasing obesity levels there was no increase in proportion of uric acid stones compared to previous studies. Incidence of stones in females is marginally higher than historical series and warrants investigation. Further work is underway to match serum and urine biochemistry data to stone composition.

P11-9 Racial Disparities in Uric Acid Stones: Single centre cohort study

Dr Manzoor Ahmed[1], Mr Mohammed Iqbal[1], Mr K Subramonian[1]
[1]Queen Elizabeth Hospital Birmingham, Birmingham, United Kingdom

Table 1

Composition	N=	%
Calcium oxalate	2728	45.4%
Calcium phosphate (>50%) / Calcium oxalate	1144	19.1%
Calcium oxalate (>50%) / Calcium phosphate	577	9.6%
Uric acid	546	9.1%
Calcium phosphate	388	6.4%
Struvite / Calcium phosphate	286	4.7%
Cysteine	103	1.7%
Uric acid (>50%) / Calcium oxalate	85	1.4%
Calcium oxalate (>50%) / Uric acid	60	1%
Other mixes / compositions	81	1.3%

Introduction: Common risk factors for Uric acid stones based on studies from Caucasian population are older age, high BMI, hyperuricemia, hyperuricosuria and acidic urinary pH. Little is known about the differences in patient characteristics between patients from different ethnic backgrounds. We aim to analyse differences in patient characteristics in uric acid stones.
Methods: Stone analysis data from 446 patients were analysed retrospectively. Patients with uric acid stones were identified and their age, BMI, serum uric acid level and urine pH was compared amongst different patient populations using SPSS. Mann Whitney test was used due to asymmetric distribution of data.
Results: Calcium oxalate was the commonest stone (n=301,67.5%) followed by uric acid (n=42, 9.4%). Comparison of different patient characteristics in the uric acid group between Caucasian and Asian populations are shown on the table.
Asians with uric acid stones had statistically significant lower average age compared to Caucasians. Although there was a trend towards lower BMI, higher uric acid level and lower pH, these didn't reach statistical significance.
Conclusion: Our study shows that Asians suffer from uric acid stone at a younger age and have relatively lower BMI and higher uric acid levels. This correlates with epidemiological studies of gout from Southeast Asia which confirms a lower age of onset for gout suggesting that pathogenesis of gout and Uric acid stones in Asian population is different to the caucasian population. Larger sample size is needed to confirm this finding along with metabolic screening and genetic evaluation for confirming the pathogenesis.

Factor	Ethnic group	Median	Difference	Significance
Age	Caucasian	68	+20	.004
	Asian	48		
BMI	Caucasian	30.8	+1.8	.268
	Asian	29		
Uric acid level	Caucasian	322	−60	.621
	Asian	382		
Urine pH	Caucasian	6	+0.5	.277
	Asian	5.5		

P11-10 Health-Related Quality of Life in Cystinuria Patients

Dr Puneh Shahrjerdi[1], Miss Anoopma Vijay[1], Dr David Game[1], Miss Kay Thomas[1], Mr Matthew Bultitude[1]
[1]Guy's and St. Thomas' NHS Foundation Trust, London, United Kingdom

Cystinuric patients typically suffer frequent episodes of renal colic causing disruption to normal life. The health-related quality of life (HRQOL) in a cystinuric population from a single centre was assessed using the validated Wisconsin Stone Quality of Life Questionnaire (WISQOL). An online version of the WISQOL was created and cystinuria patients asked to complete it electronically. Additional health questions were asked to stratify patients. Validity of the online questionnaire was tested using Cronbach's Alpha. To act as a comparison group, recurrent non-cystine stone formers attending our stone clinic also completed the online questionnaire.

75 cystinuric patients completed the questionnaire in a 4-week timeframe. Internal consistency of the questionnaire was high (Cronbach's $\alpha = 0.82$). Female patients, those with current stones, recent symptoms and those who had visited the emergency department within four weeks prior to the questionnaire had significantly lower (worse) overall HRQOL scores($p<0.05$). There was no significant difference in overall HRQOL in cystinuria patients for the following subgroups: family history of kidney stones; hospitalisation in previous four weeks, taking stone preventative medications, altered diet and fluid intake due to stone formation ($p>0.05$). Cystinuric patients did not have significantly different mean overall or subscale scores compared to 35 non-cystinuria stone forming patients ($p>0.05$).

This study challenges the notion that male stone patients have worse HRQOL, at least in cystinuria. As expected, patients with current stones or symptoms had lower HRQOL. In previous American studies, cystine stone formers had lower HRQOL compared to non-cystine, however this was not replicated in our UK population.

ePoster Session 12: Management, Governance, Education and Quality Improvement
Tuesday 25 June
15:45-16:45
Carron
Chairs: Anna O'Riordan, Sachin Agrawal & Susan Hall

P12-1 Readmissions, Sepsis and Costs of 200,000 NHS Prostate biopsies- Interrogation of HES data for TRUS vs TP Biopsy between 2012-2018

Mr Jim Adshead[1], Mr Nick Simpson[3], Mr Omar El-Taji[1], Miss Charlotte Foley[1], Mr Ranan Dasgupta[2], Mr Rick Popert[3]
[1]Lister Hospital, Hertfordshire, United Kingdom, [2]Imperial College, London, United Kingdom, [3]Guys Hospital, London, United Kingdom

Introduction: Which of TRUS&TP biopsy is the best approach for diagnostic yield, sepsis rates, complications and NHS cost?

Hospital Episode Statistics (HES) data allows interrogation of granular detailed readmission costs as well as complication OPCS codes comparing these 2 approaches performed in the NHS. It also records costs of readmissions

Methods: Using an information request to Harvey Walsh (HES data licensed), we analysed all TRUS vs TP biopsies performed under the OPCS codes M702(TP) and M703(TRUS) between April 2012 and March 2016. We analysed all A&E and OPD readmissions in the 28 days

post procedure. Just over 195,000 biopsies were analysed.
Results: Both had a similar number of non-elective admissions within 28 days (~4%). TP driven mainly by retention and TRUS by infection.
The sepsis rates were encouragingly low in both groups but double the rate with TRUS and increased CT HES2007-2012.
Readmission costs to the tax payer were £603.28 less for TP per patient admitted CT TRUS (driven mainly for more extensive sepsis in TRUS).
Also presented will be the integrated HES and primary care data for a subset of this group to see if HES is missing complications picked up by primary care.
Conclusion: Taxpayers could save £3 million if all prostate biopsies switched to TP approach.
Introducing a national training program for LATP biopsies, overall costs and sepsis rates may be reduced without compromising diagnostic accuracy. Importance of this dataset being that it provides contemporary assessment of NHS costs of TP and TRUS, on which further assessment of LATP vs GATP can be based

P12-2 Standardisation and streamlining of multidisciplinary team meetings in prostate cancer: A win-win change

Mr Marios Hadjipavlou[1], Miss Ella DiBenedetto[1], Dr Giles Rottenberg[1], Dr Ash Chandra[1], Mr Oussama Elhage[1], Dr Ajay Aggarwal[1], Dr Kate Haire[2], Mr Ben Challacombe[1], Mr Paul Cathcart[1]
[1]Guy's Hospital, London, United Kingdom, [2]South East London Cancer Alliance, London, United Kingdom

Introduction: Multidisciplinary teams (MDTs) form the core in management of patients with suspected or proven cancer. The 2016 Cancer Research UK Report "Meeting Patients' Needs" outlined the importance of standardising and streamlining MDT processes. As part of the National Cancer Programme, we piloted and evaluated the impact of streamlining MDT meetings in prostate cancer in a single large volume cancer centre.
Methodology: Baseline data (pre-streamlining) was collected on the established MDT meetings over 4 weeks. In the next phase, predetermined standards of care (SoC) were introduced to protocolise patients that did not require full discussion at the MDT meeting as they conformed to the SoC. Data was collected for the subsequent 4 weeks (post-streamlining).
Results: Following streamlining, the average number of patients discussed at the MDT meeting was reduced from 26 patients to 3 patients. The average time discussing cases at each meeting was reduced by more than four-fold (46:30min to 11:15min) while the average time spent discussing each patient doubled from 1:49min to 3:26min. Following streamlining, 77% of cases did not require MDT meeting discussion. Cases of low-risk and intermediate-risk prostate cancer did not require discussion. Reasons for MDT meeting discussion included high-risk and metastatic disease, discordant imaging/histology and incidental findings on imaging.
Conclusions: Streamlining of multidisciplinary meetings using predetermined standards of care enables specialist time to be focused on higher-risk and complex cases not following well-established pathways while potentially increasing departmental efficiency. The impact on teaching and training will need to be further evaluated.

P12-3 The value of an upper tract urothelial carcinoma MDT: does everyone need a diagnostic ureteroscopy

Miss Li June Tay[1], Ms Kathryn Chatterton[1], Dr Josie Colemeadow[1], Ms Suzanne Amery[1], Dr Alexander Polson[1], Dr Ashish Chandra[1], Dr Davide Prezzi[1], Dr Giles Rottenberg[1], Mr Rajesh Nair[1], Mr Matthew Bultitude[1], Ms Kay Thomas[1]
[1]Guy's & St Thomas' Hospital, London, United Kingdom

Introduction: Upper Tract Urothelial Carcinoma (UTUC) remains a challenging condition to treat due to multiple co-morbidity, radiological uncertainty, difficulty with grade/stage, false negatives, seeding concerns and treatment delays. To address this, we implemented an UTUC specialist multidisciplinary team meeting (UTUCMDT) within our existing bladder cancer MDT
Methods: In addition to the bladder cancer MDT team, specialist endourologists attend this UTUCMDT. Data was prospectively recorded between January-September 2018. Clinical, radiological and pathological features were analysed.
Results: Of 893 cases in the bladder cancer MDT,167 cases (18.7% = 100 patients) were discussed in the UTUCMDT (mean 4.4 cases/meeting). Mean age 67 years (28-92). 48 patients with suspected malignancy underwent a diagnostic ureteroscopy/biopsy (22 benign, 26 malignant). The remaining 52 had diagnosis based on; imaging=37 (15 benign, 22 malignant); previous UTUC on surveillance=4, urine tuberculosis culture=1, awaiting further investigations=9, non-urological malignancy=1.25 patients underwent radical nephroureterectomy (RNU) with only half having a prior ureteroscopy. All RNUs confirmed malignant pathology,2 of which were non-urothelial in nature. Nephron-sparing surgery was attempted in 6 patients. 4 distal ureterectomy, 2 ureteroscopic treatment and subsequent surveillance. 13 patients were managed expectantly for their UTUC due to disease burden or performance status. 2 are undergoing chemotherapy. 3 declined surgery.
Conclusion: Despite current concern regarding the value of MDTs, introduction of a UTUCMDT has

Prospective clinical, cost analysis and environmental impact of a clinician-led virtual ureteric colic treatment decision pathway

Patients	Male	Female		
Total no.	517	170		
Median Age	42	39		
% at working age	91.1% (n=471)	88.8% (n=151)		
Clinical Outcome	**Discharged**	**Further VC**	**Face-to-face clinic**	**Surgical Intervention**
	14.0% (96)	14.6% (100)	52.4% (360)	19.1% (131)
		Discharged following further VC		PCNL 0.7% (5)
		14.6% (100)		ESWL 7.9% (54)
				URS 10.5% (72)
Costs	**VC cost**	**Face-to-face clinic opportunity cost**	**Cost savings**	
	£85, 103	£125, 451	£40, 348	
Environment	**Avoided Travel Distance (miles)**	**Avoided CF ($mtCO^{2e}$)**	**Projected 12-month avoided CF ($mtCO^{2e}$)**	**Trees to be planted to offset carbon footprint**
	6 009	0.45 – 1.88	1.05- 4.35	9.4

Table 1. Summary of results. VC = Virtual Clinic, CF = Carbon Footprint, $mtCO^{2e}$ =metric tonnes of carbon dioxide equivalent.

streamlined care for this complex and heterogeneous disease in particular reducing the need for ureteroscopy (24(33%) procedures saved if all had undergone ureteroscopy), reducing investigation time without compromising oncological outcomes with no evidence of benign pathology on final RNU.

P12-4 Prospective clinical, cost analysis and environmental impact of a clinician-led virtual ureteric colic treatment decision pathway

Dr Marie Edison[1], Mr Martin J. Connor[2], Mr Saiful Miah[1], Mr James Brittain[1], Miss Christine Gan[1], Mr Jalil Rozh[1], Miss Mitra Kondjin Smith[1], Mr Milad Hanna[1], Mr Tamer El-Husseiny[1], Mr Ranan Dasgupta[1]

[1]Imperial Urology, Imperial College Healthcare NHS Trust, Charing Cross Hospital, London, United Kingdom, [2]Department of Surgery and Cancer, Faculty of Medicine, Imperial College, London, United Kingdom

Introduction: Virtual clinic (VC) is a clinical consultation without a face-to-face (FTF) meeting. Incorporating innovative telehealth strategies such as a VC in the follow-up pathway for patients is one such method to clinically and fiscally accommodate the increasing service demands of uncomplicated ureteric colic.

Patients & Methods: All referrals to a single tertiary endourology unit covering two accident and emergency units were prospectively collected between August 2015 and January 2018. Ureteric colic patients requiring emergency admission were excluded. Patients of working age

Tables and Graph – Telephone Clinic Audit

Figure 1 – Pie chart to show patient preferred method of clinic

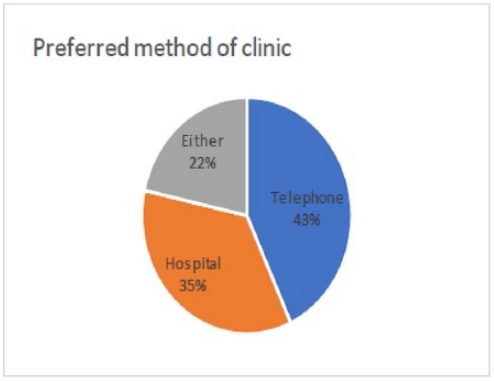


Figure 2 – Pie chart to show patient satisfaction from telephone clinic

(18-65 years), time (days) from referral to VC, VC outcome including surgical intervention were collected. A cost and environmental impact analysis was also performed.

Results: 687 patients were identified. 91% (622) were of working age. Median time from presentation to VC was 2 days (IQR 1-5). Our VC Outcomes were: 14.0% (96) discharged, 14.6% (100) discharged following further VC, 52.4% (360) FTF clinic, 19.1% (131) intervention. Our interventions arm included: PCNL 0.7% (5), ESWL 7.9% (54), URS 10.5% (72). Our VC saved an estimated £40, 348 for clinical commissioning groups. 6,009 patient journey miles were avoided which would have equated to 0.45 –1.88 metric tonnes of CO2e production and the need to plant 9.4 trees to achieve carbon balance.

Conclusion: Clinician-led VC reduces time to treatment decision to a median of 2 days. This creates additional clinic capacity, reducing the fiscal burden and carbon footprint of traditional stone clinics.

P12-5 Consultant-lead telephone follow up clinics - can these save the urology outpatient wait crisis?

Ms Nadine McCauley[1], Miss CL Foley[1], Dr Siya Lodhia[1], Mr Mohannad Hosny[1], Dr Tanvi Raghvani[1]

[1]Lister Hospital, Stevenage, Stevenage, United Kingdom

Introduction: To address a chronic outpatient follow-up backlog, we ran Consultant-lead telephone clinics at our District General Hospital for 4months.

Methods: Unscreened patients were phoned by our secretaries and offered one hour time slots in day or evening clinics. Four hour clinics were built with 5 patients/hour. Two unanswered calls constituted a DNA. Each Consultant audited at least 1 clinic. Subsequently patients were contacted for feedback.

Results: 114 interactions were audited. 89% of patients answered. Mean call duration was 6.5 minutes (range 2-21) and mean overall time per case was 13.4 minutes (range 4-49) allowing for notes reading, booking tests, prescribing, dictation and data input). 13% of patients required a face-to-face assessment. Half were discharged, a third given further follow-up, 8% booked for theatre. 7% sent a hospital prescription and 29% had tests booked. The physical hospital notes were helpful in 42%.

51 patients gave feedback. 100% felt their consultation was the right length and 97% had all questions addressed. 80% were satisfied/very satisfied. Patients slightly preferred telephone consults to hospital appointments (48% vs 38%).

No patient safety issues have emerged from decisions made in these patients.

Conclusions: Though this unselected group were satisfied, we did not realize the efficiencies we had anticipated. Consults were no quicker, DNAs were high despite agreed time-slots, 13% had a futile interaction and notes still had to be pulled. Pre-operative consenting was not possible.

Telephone clinics are acceptable, safe and environmentally friendly. We intend to reopen these in the future only for selected patients

P12-6 Innovating service delivery with 'one-stop' prostate cancer clinics to reduce cancer pathway breaches

Mr Wael Asaad[1], Miss Helen Thursby[1,2], Mr Mark Kitchen[1,2], Mr Christopher Luscombe[1], Mr Lyndon Gommersall[1,2]

[1]University Hospitals of North Midlands NHS Trust, Stoke-on-trent, United Kingdom, [2]Institute for Science and Technology in Medicine, Keele University, Stoke On Trent, United Kingdom

Introduction: Prostate cancer is the most common cancer in men in the UK. Given referral caseload, the consultations, investigations and procedures required to establish diagnosis, meeting national cancer targets for diagnosis and treatment is challenging. After process-mapping current practice, we instigated a 'one-stop' referral pathway in December 2017, to include consultation, examination,

Figure 3 – Table showing Overall Patient Experience of Telephone Clinic

	The appointment was made at a convenient time	The length of conversation just right	The information you were given was easy to understand	You were given enough opportunity to ask questions
Agree	51	49	48	48
Disagree	0	2	3	3
Percentage (%)	100	96	94	94

Figure 4 – Table Showing Outcomes of Telephone Clinic

Outcome	Number of Patients
Discharged	51
Routine follow up	35
To see in person	15
To arrange further procedure	10

mpMRI and TRUS biopsy in one visit. One-stop and standard cancer referral patient journeys were compared.

Patient/Methods: We performed a retrospective cross-sectional analysis of 24 patients (12 'one-stop' and 12 'standard' cancer pathway). Clinical and demographic data, acceptability questionnaires and times to investigation and treatment were recorded.

Results: In the standard referral pathway, mean times to MRI, TRUS biopsy and TRUS result clinic were 4, 24 and 41 days respectively; and times to decision to treat (DTT) and treatment start (TS) were 66 and 77 days (exceeding national targets). In the one-stop pathway, mean times to MRI, TRUS biopsy and TRUS result clinic were 0, 0 and 7 days respectively; mean times to DTT and TS were 27 and 45 days. All one-stop pathway wait times were significantly shorter ($p<0.05$, T-Test). 10/12 patients strongly preferred the one-stop pathway. 42% prostate cancer referral breaches were avoided using the one-stop pathway.

Conclusion: Early data suggest the one-stop pathway is preferred by patients and leads to significantly shorter waiting times and time to investigation. Delays remain where patients require/request thinking time prior to treatment. Introducing our one-stop clinic has made significant improvements in meeting national targets and reducing pathway breaches.

P12-7 Patient-led Trial Without Catheter (TWOC) - Is it feasible?

Dr Emer Hatem[1], Miss Li June Tay[1], Miss Hannah Harvey[1], Mr Gordon Muir[1], Mr Christian Brown[1]
[1]Kings College Hospital, London, United Kingdom

Introduction: Post-operative urinary catheters pose a barrier to discharge, and outpatient trial without catheter (TWOC) clinics are ever-saturated. Our centre aims to perform Greenlight laser prostatectomy as a day-case, following which we endorse TWOC between post-operative day 1–3. Factors delaying TWOC include larger, vascular prostates, longer vaporisation time or pre-operative urinary retention. This study tests the feasibility of patient-led TWOC.

Methods: We prospectively collected patients having laser prostatectomy, or other procedure requiring post-operative catheterisation from February to September 2018. Excluded were those with cognitive or social barriers, or operative factors which deemed hospital TWOC safer. Patients were taught to remove their catheter, instructed to do so early on a designated day and to attend outpatients had they had difficulty voiding by noon. An information sheet with instructions/contact details was given. Follow-up was via telephone.

Results: 62 suitable patients were included. Of these, 8 changed their mind and returned for nurse-led TWOC, 2 were constipated so did not perform the TWOC and one catheter fell out. 49 patients (79.0%) removed their catheter as directed and 45 of these (91.8%) successfully voided. Four (8.2%) failed and returned for catheterisation. All subsequently passed a nurse-led TWOC. From the successful cohort, four patients attended the Emergency Department; with haematuria, urinary tract infection, incontinence, and anxiety respectively. All were discharged. Follow-up revealed the majority of the successful (82.2%) were happy, given clear instructions to follow.

Conclusions: Patient-led TWOC is feasible and acceptable to patients, provided a clear contingency plan should they fail to void.

P12-8 A closed loop audit on ureteric stent with extraction string (tether) and a nurse led stent removal service - highlighting benefits to the patient and the urology service

Mr Subhabrata Mukherjee[1], Mr Rajeev Desai[1], Ms Carmela Popanes[1], Mr Erik Havranek[1], Mr Asif Raza[1]
[1]Northwick Park Hospital, Harrow, United Kingdom

Introduction: A ureteric stent with extraction string can save resources by obviating the need for flexible cystoscopic removal. Also, stents can be removed sooner reducing the duration of stent symptoms.
Methods: We performed a prospective audit of patients who had ureteric stent with extraction string. Our stone nurse specialist removed the stents in a newly created stent removal clinic.
Results: In the first cycle over four months (n=10) the stents were removed within 7 days. The morbidity rate was high (50%) with accidental stent dislodgement in three cases, string retraction in one case and pulling out of the string by a recovery nurse in one case. The shortcomings were addressed subsequently, and it was felt that suprapubic fixation has lesser risk of stent dislodgement than thigh fixation in females. In the second cycle over three months (n=8) the outcome was far better with only one accidental stent dislodgement (13%). Over the 7 months complication rate has reduced by 37% and we have saved 18 flexible cystoscopy slots. This equates to just over 2 saved flexible cystoscopy sessions, saving the cost of 3 doctor-sessions and ancillary staff, sterilization of equipment costs and consumable costs (roughly £760/session). These sessions have been able to be utilized for more urgent cases.
Conclusion: Careful case selection, proper string fixation, a defined stent removal pathway and general awareness amongst the urology team and other staff are crucial for managing a ureteric stent with extraction string which could save valuable resources and reduce duration of stent symptoms.

P12-9 The Acute Stone Service Clinic: A New Pathway for the Management of Patients with Renal Colic

Mr Su-Min Lee[1], Mr Mudit Matanhelia[1], Miss Lucy Simmons[1], Mr Joseph Jelski[1], Mr Salah Al-Buheissi[1], Mr Anthony Timoney[1], Mr Joe Philip[1]
[1]Southmead Hospital, Bristol, United Kingdom

Introduction: Renal colic patients presenting to the Emergency Department (ED) are typically managed symptomatically and discharged to a dedicated Stone Clinic. With increasing demands, time to follow-up has increased. To reduce this delay and associated patient morbidity, a new referral pathway is presented, the Acute Stone Service Clinic (ASSC).
Patients and Methods: The ASSC involves Stone Multidisciplinary Team (SMDT) review of all ED referrals (<1 week), nurse telephone consult (NTC) within 12 days to evaluate symptom control and discuss management, and Combined radiographer/nurse Clinic (CC). Patients requiring emergency treatment were excluded.
Results: Over five months, 365 patients were discussed in SMDT, with mean age 48 years (range 16-91) and 73% men. 103 (28%) patients had direct shockwave lithotripsy (SWL). NTC was required in 140 patients, and CC in 86 patients. Only 43% of patients required Consultant review, primarily for radiolucent, non-obstructing, or complex stones, or medical co-morbidities. After full evaluation, 7 patients were discharged, with 13 listed for surgery.
SMDT occurred within 1.9 days of referral (range 0-7) and NTC within 12 days. Over 90% of patients planned for CC were reviewed within six weeks (mean 32 days); eight further patients required immediate SWL. Overall, only 43% required a Consultant appointment.
Conclusion: The ASSC has reduced treatment delays, evaluating 100% and treating 87% of patients within 2 and 6 weeks, respectively. With accelerated care in high-risk patients, all reported greater satisfaction from the early nurse-led telephone consultation. The ASSC has reduced the risk of patient morbidity and eased clinic pressures.

P12-10 Trainee experience of emergency urological procedures: A national survey of the United Kingdom and Ireland

Miss Sophia Cashman[1], Miss Katie Chan[2], Miss Laura Derbyshire[3], Miss Dora Moon[4], Mr Joseph Jelski[5], Mr Jonathan Noël[6], Mr Owen Hughes[7]
[1]Addenbrooke's Hospital, Cambridge, [2]Royal Devon and Exeter Hospital, Exeter, [3]Royal Preston Hospital, Preston, [4]Stepping Hill Hospital, Stockport, [5]Gloucester Hospitals NHS Foundation Trust, Cheltenham, [6]London North West University Healthcare NHS Trust, London, [7]University Hospital of Wales, Cardiff

Introduction: There is concern amongst urology trainees about the exposure to emergency urology surgery during training, and inadequate preparation for consultant posts. We evaluated senior urology trainee experience in a range of emergency procedures, and whether they felt they would be confident to perform them independently by the end of training.
Materials and Methods: An online survey was created and sent to senior trainees (ST5+) in the UK and Ireland.
Results: In total, 94 responses were received. The majority of trainees surveyed had performed debridement of Fournier's gangrene (94.7%), open insertion of suprapubic catheter (81.9%) and penile fracture repair (78.7%). However only 21.3% had performed an emergency nephrectomy, over 90% had not explored a bleeding pelvis post TURP and almost half (43.6%) had not performed a loin approach to a kidney. The majority of trainees (81.9%) felt confident debriding Fournier's gangrene independently, however confidence in independently performing all other procedures was much lower. Only a third felt that by the end of training they could perform either primary repair

or Psoas hitch/Boari flap for ureteric injury, and just 8.8% felt that they would be able to independently perform an emergency nephrectomy. The majority of these procedures are in the GMC curriculum and expected to be taught and assessed for completion of training.
Conclusion: This survey highlights significant deficiencies in the experience and confidence of Urology trainees in the UK and Ireland. Methods, including the use of cadaveric courses, must be implemented to address these essential competencies in the GMC curriculum.

ePoster Session 13: General Urology 2 (Emergency/Trauma) Wednesday 26 June 11:00-12:00 Carron Chairs: Mark Speakman, Madhu Agrawal & Francesca Kum

P13-1 A new Urethral Catheterisation Device for safe urethral catheterisation in difficult cases

Dr Sarah Flückiger[1], **Professor Hubert John**[1]
[1]*Kantonspital Winterthur, Winterthur, Switzerland*

Introduction: Problematic urethral catheterisation may be painful and associated with complications. For the urologist it is a significant and time-consuming workload which can occur at any time of day or night. It is also associated with significant costs especially in an emergency situation. For these reasons we have introduced a new urethral catheterisation device (Urethrotech UCD®) in our hospital designed to manage difficult or failed urethral catheterisation.
Methods: The UCD® consists of a 3-way Foley catheter with integrated atraumatic hydrophilic Nitinol guide wire. The aim is to avoid urethral catheterisation injury (UCI) and to reduce urology consultations. Training for all emergency and theatre staff was provided. A questionnaire recorded success or any complications of UCD-catheterisation and user feedback.
Results: Over 12-months the UCD® was used in 21 men after failed standard Foley-catheterisation. In 81%(17/21) UCD-catheterisation was successful. In 19%(4/21) catheterisation failed even with the UCD® and urology referral was necessary. In 4 men, mild urethral bleeding was recorded as the result of standard catheterisation that did not interfere with UCD-catheterisation. 3 patients reported discomfort during the procedure. Managing failed standard catheterisation with the UCD® was time and cost effective. All staff were highly satisfied with the new device and would use it again as the next step to solve difficult urethral catheterization.
Conclusions: The new UCD® offers frontline staff a safe solution to proceed with transurethral catheterisation even in difficult situations avoiding the risk of UCI and hospital admission, providing cost and time effective patient care.

P13-2 Prevalence of recurrent Extended-Spectrum Beta-Lactamase (ESBL) urinary tract infections (UTIs) in patients within a Urology service and introducing the concept of Faecal Microbiota Transplantation (FMT) as a treatment modality

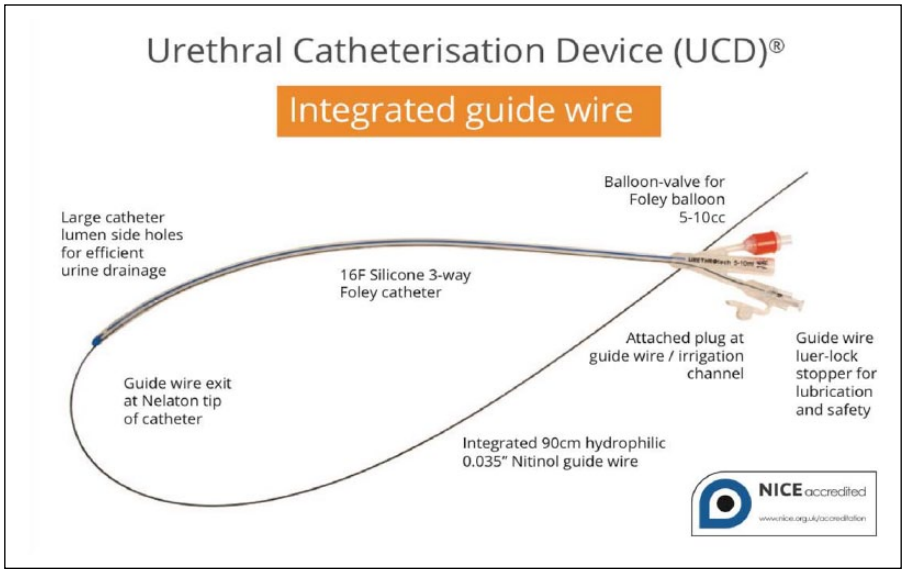


Table 1.

Diagnosis		Number
Lower tract obstruction		23
Urinary tract calculi		13
Upper tract obstruction		7
Functional including reflux		5
Uro-Oncology		5
Post-operative complication		3
Urological reconstructive surgery (n=7)	Ureteric reimplantation	4
	Ileocystoplasty	2
	Ileal conduit	1
Drainage tubes (n=40)	Indwelling catheter	18
	Intermittent self-catheterisation	13
	Nephrostomy	10
	Stent	9

Table 2.

Patient	Underlying diagnosis	Infection issue	Complications during/ immediately after FMT	Follow up microbiology
71 year old male	Renal transplant	Recurrent ESBL *Ecoli* UTI	None	One further UTI – no MDRO isolated
82 year old female	*C difficile*	Recurrent ESBL *Klebsiella* UTI	None	No further UTI over 6 month period
88 year old female	*C difficile*/major abdominal surgery	Recurrent ESBL *Klebsiella* UTI	None	No further UTI over 6 month period
58 year old female	Renal transplant	Recurrent ESBL *Klebsiella* UTI	None	One further MDRO UTI – hospital admission reduced from months to days

Dr Rohma Ghani[1], Miss Christine Gan[2], Dr Benjamin Mullish[3], Dr Vaishali Ferizoli[2], Dr Frances Davies[1], Professor Mark Thursz[3], Professor Julian Marchesi[4], Mr Ranan Dasgupta[2], Mr Suks Minhas[2]

[1]Department of Microbiology, Imperial College Healthcare NHS Trust, London, United Kingdom, [2]Department of Urology, Imperial College Healthcare NHS Trust, London, United Kingdom, [3]Department of Gastroenterology, Imperial College Healthcare NHS Trust, London, United Kingdom, [4]Department of Digestive Diseases, Imperial College London, London, United Kingdom

Introduction: Patients with an underlying urological diagnosis colonised with multidrug-resistant organisms (MDRO) such as ESBL are predisposed to recurrent UTIs. In FMT, healthy donor stool is administered into the GI tract to restore healthy gut microbiota. This is acknowledged as an effective treatment for recurrent Clostridium difficile infection, and now as an emerging method of eradicating MDROs. There are little data reporting on its therapeutic value in Urology.

Methods: Retrospective analysis of culture positive urine isolates was obtained from 2015-2018 at a tertiary level service. Clinical profiles of patients with recurrent ESBL UTIs was performed. Four patients who had ESBL UTIs underwent FMT.

Results: From June 2015-January 2018, 2059 patients under Urology services had a positive urine culture. 128

(6%) were ESBL. 456 patients had multiple positive urine cultures. Of these, 62 (14%) had multiple ESBL UTIs, constituting 8% of recurrent ESBL UTIs in the trust (806 total). 52/62 (84%) with recurrent ESBL UTIs had underlying urological diagnoses; 10/62 (16%) were purely managed for recurrent UTIs. 19/62 patients had >1 underlying diagnosis. 7/62 (11%) had urological reconstruction. 40/62 (65%) had prosthetic devices in situ (Table 1). Four patients received FMT, Table 2 describes their outcomes.

Conclusions: ESBL UTIs are highly prevalent in Urology. Underlying causes should be investigated, due to high incidence of obstructive aetiologies. Our early experience of FMT for decolonisation and prevention of transition to infection with MDROs has shown FMT to be safe, well tolerated and effective.

P13-3 Is urine dipstick testing still useful in evaluating the presence of bacteriuria in a post antibiotic era?

Mr Samih Taktak[1], Mrs Zara Gall, Mr James Dyer
[1]Stepping Hill Hospital, Stockport, United Kingdom

Introduction: Urine-dipstick are widely used to evaluate the presence of bacteriuria. Previously reported reviews have suggested high levels of sensitivity and specificity. In a post antibiotic era, with increasing resistance patterns, we aim to re-evaluate the diagnostic accuracy across an entire hospital.

Method: Consecutive results of December 2017 paired urine dipstick tests and MSU received were evaluated. Significant bacteriuria was defined as single culture >10*5 cfu/ml. The sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were calculated for nitrites/leukocytes/combinations of them. Finally, the diagnostic accuracy was stratified according to resiA 10 stance profiles.

Results: 1000 urine-dip and 1030 MSU results were analysed. Cohort results in Table 1. 57/237 MSU specimens were positive and 35/57 demonstrated resistance to either trimethoprim/nitrofurantoin/ciprofloxacin/amoxicillin.

22/45 specimens were resistant to trimethoprim. The sensitivity of the nitrite test for trimethoprim resistant bacteria was almost half that for trimethoprim sensitive bacteria. Resistance rates to other tested antibiotics was low. No differential effect was seen on sensitivity between antibiotic sensitive and resistant bacteria.

Conclusions: The presence of nitrites on urine dipstick analysis carries a much higher false negative rate than previously reported. Whilst previous reports had suggested that combining the results of nitrites and leucocytes can improve the combined sensitivity and specificity this was not found in our study. This false negative rate appears higher in trimethoprim resistant bacteria. Whilst many explanations could account for this our findings may suggest that continued antibiotic pressures and misuses may impact on the diagnostic accuracy of routinely available urine dip analysis.

P13-4 Nationwide review of suprapubic catheter insertion and the risk of bowel injury

Ms Susan Hall[1], Miss Shaista Ahmed, Mr N Thiruchelvam, Mr Richard Parkinson
[1]Nottingham City Hospital, Nottingham, United Kingdom

Introduction: Limited data exists on the risks of complication associated with suprapubic catheter (SPC) insertion. Bowel injury is a well-recognised albeit uncommon complication. Guidelines on the insertion of SPC have been developed, but there remains little evidence regarding the incidence of this complication. This study uses contemporary UK data to assess the incidence of SPC insertion and the rate of bowel injury or death.

Patients and Methods: We searched National Hospital Episodes Statistics data on all SPC insertions over an 18month period for OPCS Code M38.2 (Cystostomy and insertion of suprapubic tube into bladder). Patients age, 30day readmission rates, mortality rate within 1 month and catheter specific complication rate were collected.

To estimate bowel injury rate, we searched patients who had undergone any laparotomy or bowel operation within 30 days of SPC insertion. Trusts were contacted directly by the authors and directed to ascertain whether there was SPC-related bowel injury.

Results: 11,473 SPC insertions took place in the UK in the 18-month period. There were 142 cases that had laparotomy within 30days. We have responses from 113 of

Table 1

Test	Sensitivity	Specificity	PPV	NPV	Accuracy
Nitrite +	28.1 (17.0, 41.5)	86.1 (80.2, 90.7)	39.0 (26.9, 52.7)	79.1 (76.1, 81.8)	72.2 (66.0, 77.8)
Leucocyte +	89.5 (78.5, 96.0)	38.3 (31.2, 45.9)	31.5 (28.4, 34.7)	92.0 (84.1, 96.2)	50.6 (44.1, 57.2)
Nitrite and leucocyte +	89.5 (78.5, 96.0)	38.3 (31.2, 45.9)	31.5 (28.4, 34.7)	92.0 (84.1, 96.2)	50.6 (44.1, 57.2)

these cases with one report of SPC insertion related bowel injury.

Conclusions: This is the largest data set reported on SPC insertions showing a lower than previously reported rate of bowel injury. We recommend the use of US in experienced hands could be reserved for cases with impalpable bladder despite adequate distension. We also recommend clinicians use a risk of bowel injury of less than 0.5% when considering SPC insertion.

P13-5 Endoscopic ureteric realignment with tandem stents: An endoluminal approach to managing ureteric injuries

Dr Mudit Matanhelia[1], Ms Jessica Gallagher[1], Mr Neil Collin[1], Mr Joe Philip[1]
[1]Bristol Urological Institute, Bristol, United Kingdom

Introduction: Ureteric injuries are a recognised complication of abdominal surgery. Further surgery to repair the defect increases fistulation risk and morbidity. Endoscopic ureteric realignment (EUR) with tandem stents averts the need for invasive surgery. Our results are discussed here.

Methods: Patients with iatrogenic ureteric injury who underwent ureteric re-alignment were included.

EUR was enabled with the patient positioned in modified 45° lithotomy, enabling antegrade interventional radiology access and retrograde semi-rigid ureteroscopy.

Laser stricturotomy was undertaken with 3-D fluoroscopic review if required. Ureteric stricture balloon dilatation was performed, with insertion of tandem 6Fr. stents. Further ureteroscopy was done at 3 months, with ureteric dilatation if necessary, before a decision to remove stents.

Results: Over a 6-year period, 28 patients underwent EUR, with 3 patients having proximal and 25 with distal ureteric strictures or transections. Average age was 61 years (20 – 93 years). Average follow-up was 16 months (1 – 67 months).

EUR was enabled in 26 patients; with 14 (54%) patients stent free. Antegrade realignment was feasible in those with ureteric orifice injuries.

Patients who were stent dependent had a colorectal associated injury, pelvic radiotherapy, or proximal ureteric injuries.

Conclusion: EUR has a 93% success rate with 54% stent free. Patients had a return to normal calibre ureter with an open scar at the site of injury; attributable to tandem stents enabling 'remodelling on scaffolding'. These long-term results suggest that EUR should be the first step in managing ureteric injuries, especially in patients with 'clean' (non-colorectal) injuries.

P13-6 A 10-year review of the management of bladder injury associated with pelvic fracture at a Major Trauma Centre

Mr Oliver Bottrell[1], Mr Davendra Sharma[1], Dr Yan Leung[1], Dr Robin Dru[1]
[1]St George's University Hospitals NHS Foundation Trust, London, United Kingdom

Introduction: This study reviews the management of bladder injury associated with pelvic fracture at a major trauma centre with a long-standing tertiary referral practice for the management of pelvic fractures.

Patients and methods: Patients were identified from our internal, and the Trauma Audit & Research Network database. Outcomes analysed included management, associated urological injury, cystography and urological complications.

Results: 43 patients were identified (26 extraperitoneal, 9 intraperitoneal or combined, 4 haematoma, 4 unclassified). Mechanisms were road traffic accident (RTA) (51.2%), RTA pedestrian (18.6%), fall (23.2%), and crush injury (7.0%). Referrals included 36 direct or local transfers and 7 overseas repatriations. Of those with extraperitoneal injury 13 underwent open cystography and 13 were managed with a catheter. All 13 extraperitoneal cystography's were performed at the same time as non-urological surgery. 6 of the catheters managed extraperitoneal injuries also underwent open pelvic or abdominal non-urological surgery. We observed a higher rate of leak at follow-up cystography (55.6% vs. 11.1%) in patients with extraperitoneal injury who were managed with a catheter vs. cystography ($p = 0.13$). Across all injury types a higher rate of urological complication (80% vs. 29.4%) was observed when associated with urethral injury ($p = 0.047$).

Conclusions: The demographic data is consistent with most series. There was however a higher percentage of patients undergoing open cystography in the management of extraperitoneal bladder injury related to the move towards early open reduction and internal fixation of pelvic fractures. Multidisciplinary team working is essential to establish best practice.

P13-7 Adaptation of Personal Information Manager (Microsoft Outlook) to maintain an Electronic Stent and Nephrostomy Register

Mr Mithun Kailavasan[1], Mr Stephen Miller[1], Mr Hari Ratan[1], Mr Dhaval Bodiwala[1], Miss Sharon Scriven[1]
[1]Nottingham City Hospital, Nottingham, United Kingdom

Introduction: Complications arising from the "forgotten" ureteric stents and nephrostomies such as medico-legal and renal impairment emphasise the important of reliable stent tracking. Various stent registries created from Commercial software (e.g. Dendrite, Ureteral stent tracker) have been trialed, however due to their complexity, uptake and maintenance of such registries is poor.

Non-commercial stent registries offer an inexpensive alternative.

We present a practical, no/low cost, minimal input stent registry created from Microsoft Outlook.

Methods: The stent registry was created from the "Task" function in Microsoft Outlook. It is maintained by a single stone surgeon weekly, but accessible and editable by any interested parties. Stent and nephrostomy input are captured using interrogation of PACS. Patient details along with insertion date and due date for change or removal is recorded. Once the due date has been reached the patients are automatically highlighted and the appropriate action taken.

Results: From our single tertiary centre, 1518 patients have been tracked on Microsoft Outlook since its implementation in May 2014. It has allowed the tracking of nephrostomy and stent insertions from multiple specialties and provided a simple mechanism to ensure that they are either changed or removed in a timely fashion and not inadvertently forgotten.

Conclusions: Non-commercial stent registries offer a no cost, simple register and have been shown at our institution to be an effective way of tracking stent and nephrostomy insertions and removals. Our system interacts with our endourologists and can be personalised to the needs of individual urology departments.

P13-8 Role of Sonourethrographic Measurement of Severity of Spongiofibrosis in Predicting the Outcome of Visual Internal Urethrotomy in Short Bulbar Urethral Strictures

Professor Dorairajan Narayanan Lalgudi[1], Dr Chayan Paik[1], Dr Ram Kumar G[1], Dr Ramanitharan Manikandan[1], Dr Kodakkatil Sreenivasan Sreerag[1], Dr Siddartha Kalra[1]

[1]Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India

Introduction: To assess the predictive value of sonourethrographic measurement of severity of spongiofibrosis in short bulbar urethral stricture disease (USD) on the outcome of visual internal urethrotomy (VIU).

Patients and Methods: Consenting patients from July 2016 to February 2018 with short (<2.5 cm) bulbar USD diagnosed on retrograde urethrogram (RUG) were studied using sonourethrography (SUG) prior to VIU. Data recorded included measurements of stricture length in RUG, SUG and VIU, minimum stricture calibre in RUG, percentage luminal encroachment using RUG (PLE-RUG), and depth (DSF-SUG) and relative depth (RDSF-SUG) of spongiofibrosis using SUG. After VIU the patients were followed up three monthly for at least six months by uroflowmetry and/or calibration. Failure was defined as inability to calibrate with 16F Foley catheter.

Results: A significant strong correlation ($p<0.001$) was found in stricture length measurement between RUG and SUG (R=0.99) and with length measured at VIU. VIU failed in five patients. Peak flow rate at 6 months (PFR) most strongly correlated with, and failure of VIU was associated with, stricture length, PLE-RUG and RDSF-SUG. On multiple regression analysis only RDSF-SUG had a significant association with PFR. On ROC analysis cut-off values for stricture length at 19.5mm and RDSF-SUG of 90.5% had an 80% sensitivity, and 91% and 85% specificity respectively, for predicting the success of VIU.

Conclusions: Preoperative sonourethrographic measurement of relative depth of spongiofibrosis predicts failure of VIU, independent of stricture length, in patients with short bulbar USD. Patients with RDSF-SUG > 90% may be considered for urethroplasty rather than VIU.

P13-9 Early UK experience of PAE in men with proven bladder outlet obstruction: a novel alternative to TURP?

Table 1. Outcomes of PAE.

	Pre	Post up to 3 months (% change)	Post up to 12 months (% change)
PSA (ng/ml)	4.99	2.76 (44.7%)	4.05 (18.8%)
Prostate volume (ml)	94.50	67.97 (28.1%)	62.57 (33.8%)
IPSS	21.7	10.8 (50.2%)	11.5 (47.0%)
QOL	4.78	2.59 (45.8%)	2.32 (51.5%)
IIEF	15	17 (13.3%)	16 (6.7%)
Qmax (ml/s)	8.22	12.52 (52.3%)	12.42 (51.0%)
PVR (mls)	189.5	118.4 (37.5%)	111.0 (41.4%)

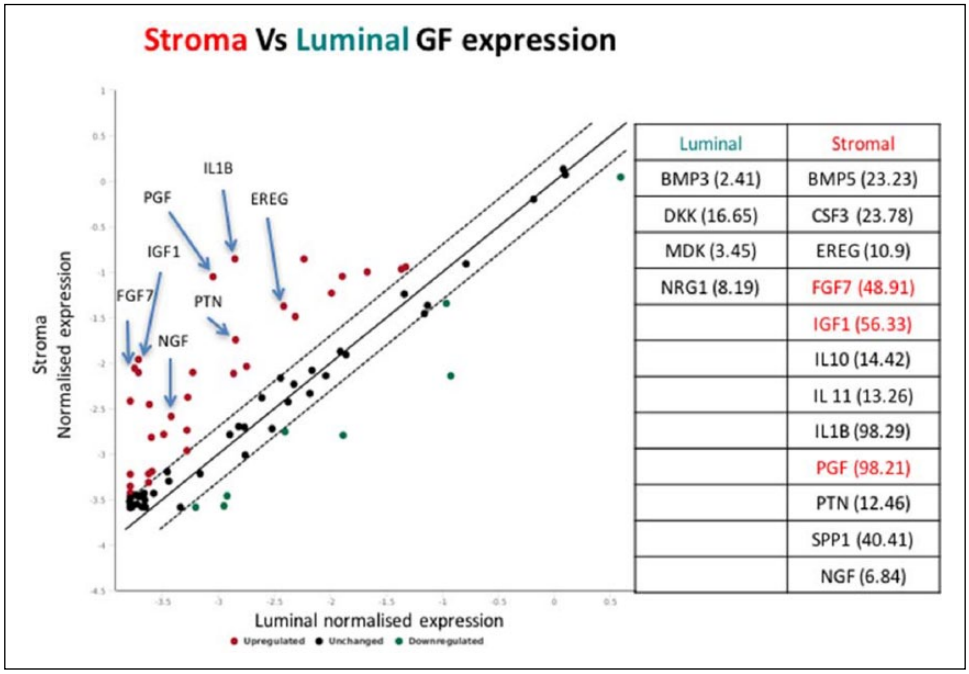
Miss Lily Whitehurst[1], Miss Sarah Prattley[1], Dr Drew Maclean[1], Dr Sachin Modi[1], Dr Tim Bryant[1], Dr Nigel Hacking[1], Mr Matthew Archer[1], Mr Jonathan Dyer[1], Mr Mark Harris[1]
[1]Southampton General Hospital, Southampton, United Kingdom

Introduction: PAE is a new technique for men with LUTS who want an alternative to traditional surgery or medication. UHS has treated men since 2012 using a standardised protocol involving UDS and CTA prior with follow-up at 3 and 12 months. All patients were asked to complete IPSS and IIEF questionnaires and have a PSA pre and post procedure.
Methods: The radiology and urology databases were analysed for outcomes related to PAE. Prospective data was also being collected including patients in the ROPE trial and initial pilot studies.
Results: A total of 120 patients were analysed with data and outcomes with a minimum of 1-year follow-up. The results are summarised in table 1 below. All cases were done as a day case, unless socially unsuitable, under local anaesthetic and catheters were required in less than 5% of cases.
Conclusions: Our experience to date suggests that PAE is a viable alternative for men with LUTS who may have specific reasons for wanting to avoid TURP/HoLEP, with good outcome data. Sexual function is preserved after with a significant improvement in objective LUTS parameters. Work is ongoing to identify the predictive factors for a good clinical outcome and who benefits most

P13-10 Placental Growth factor: another piece in the BPH jigsaw?

Mr Conor Devlin[1], Mr Matthew Simms[1], Professor Norman Maitland[2]
[1]Castle Hill Hospital, Cottingham, United Kingdom, [2]University of York, York, United Kingdom

Introduction: Benign prostatic hyperplasia (BPH) is a common disease, whose pathogenesis is not fully understood, although a number of growth factors (GFs) produced by prostate epithelial and stromal layers may play key roles. Current treatments take little account of GF-induced cell proliferation. By studying GF gene expression in enriched prostate cell subtypes we have now identified multiple novel GFs which influence BPH pathogenesis.
Materials and methods: Prostate cell subtypes were enriched directly from fresh BPH biopsies (TURP). GF mRNA array analysis was performed on six BPH samples. Placental growth factor (PGF) protein and receptor expression was validated using western blotting on tissue homogenates, immunocytochemistry on fixed cell subtypes and immunohistochemistry on tissue array samples.
Results: PGF mRNA expression in BPH was more than double that of normal prostate cells. Within BPH tissue, PGF expression was 66 times higher within the stromal population, compared to the epithelial layer. PGF was expressed at the protein level in all homogenate samples. In fixed cells, PGF expression was highest within stromal cells. Interestingly, using formalin fixed tissue arrays, PGF



Luminal	Stromal
BMP3 (2.41)	BMP5 (23.23)
DKK (16.65)	CSF3 (23.78)
MDK (3.45)	EREG (10.9)
NRG1 (8.19)	FGF7 (48.91)
	IGF1 (56.33)
	IL10 (14.42)
	IL 11 (13.26)
	IL1B (98.29)
	PGF (98.21)
	PTN (12.46)
	SPP1 (40.41)
	NGF (6.84)

Figure 1. Scatter plot of Growth factor expression differences of BPH Stroma vs Luminal cell populations.

expression was most abundant within the luminal cells, whilst also observed within the stroma. In all preparations, the principal PGF receptor - vascular endothelial growth factor receptor 1 (VEGFR1) was detectable in each cell subtype.

Conclusions: PGF appears to be an important GF in BPH, providing a potential paracrine mechanism for the maintenance of the disease, perhaps mediated by stromal cells. Growth factor receptors could provide a novel source of next-generation, rationally targeted BPH treatments.

An increase in the number of dots (red) above the unchanged expression line demonstrates that within the Stroma the expression levels of large proportion of GFs are increased compared to the Luminal cells. For example, FGF7, IGF-1 and IL10, 11 and 1B are expressed at significantly high levels. PGF expression is also increased the stroma population compared to Luminal cells (x98).