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BJU INTERNATIONAL

BAUS Annual Meeting, 18–22 June 2007, SECC, Glasgow

Poster Sessions

Tuesday 19 June 2007

18 Poster Session 1
1130–1230 Lomond Auditorium
Bladder Cancer
Chairmen: Mr David Gillatt and Mr Adam Jones
Posters P01 – P06

19 Poster Session 2
1330–1430 Boisdale Room
Stones
Chairmen: Mr Adrian Joyce and Mr Daron Smith
Posters P7 – P15

22 Poster Session 3
1430–1530 Boisdale Room
Bladder Cancer – Diagnosis
Chairmen: Mr John Anderson and Mr Derek Rosario
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24 Poster Session 4
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Governance – Clinical
Chairmen: Mr Derek Fawcett and Mr Kieran O'Flynn
Posters P23 – P30

Wednesday 20 June

26 Poster Session 5
1130–1230 Lomond Auditorium
Bladder Dysfunction and Female Urology
Chairmen: Mr Simon Harrison and Mr Julian Shah
Posters P31 – P39

29 Poster Session 6
1330–1500 Lomond Auditorium
Basic Science – Prostate
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Posters P40 – P49

Tuesday 19 June 1130–1230
Bladder Cancer
Chairmen: David Gillatt and Adam Jones

P01

Intravesical BCG and superficial bladder cancer. Outcome of 100 consecutive patients with 5–15 years follow up

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Introduction: This study looks at long term follow up of patients who received intravesical BCG in our unit as immunotherapy to treat bladder cancer.
Patients: A total of 100 consecutive patients received intravesical BCG treatment between 1991 and 2001. The majority (78) had CIS and poorly differentiated superficial disease, the remainder had G1 or G2 (pT1) disease (19) and G2pT2 (3).
Results: Forty-nine (62.8%) of patients who had high grade superficial disease had disease recurrence during their follow up. At 3 months 20 (25.6%) had recurrence with six (7.7%) patients progressing to invasive disease. A total of 43 patients (55.1%) with recurrence subsequently underwent radical treatment, 12 (15.4%) died from disease progression and 22 (28%) were under ongoing surveillance. 75.5% of patients who developed recurrence did so by 18 months.
Conclusions: We conclude that overall 61% of patients had disease recurrence and 12% of patients died of potentially curable disease. BCG has a role in the treatment of high grade superficial bladder cancer but its limitations and the potential for disease progression must be realised when formulating treatment plans highlighting the importance of an early re-biopsy.

P02

The tolerability of two BCG maintenance regimes in the treatment of high-risk superficial bladder cancer (HRSBC)

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Introduction: SWOG 8507 demonstrated reduced progression with maintenance triplet BCG. However, 84% did not receive all scheduled treatments, in a group mean age 66 years. It is unclear what proportion discontinued maintenance or decreased their schedule to single or dual dose during this study. We reviewed our experience with two maintenance regimes.
Patients and methods: Since 2000 we commenced 71 patients with HRSBC on BCG with the intention to proceed to single (SM) or triplet maintenance (TM).
Results: Mean age was 73 years. Six failed to complete the 6 weeks of induction (8%). Of the remainder, 41 commenced TM and 24 SM. Four had non-cancer deaths. Maintenance was completely discontinued in 1 SM (4%) and 7 TM (17%) patients, due to side-effects. In total, seven progressed (10%), of which, three died, three are receiving palliation, and one remains disease-free following cystectomy - all TM. Currently 17 are tolerating and three have completed SM, with 24 tolerating and nine completed TM.
Conclusions: In our population, patients are older than in SWOG 8507. Approximately ¼ discontinue BCG at either induction or during maintenance. Drop-out during SM is less than in TM. A much larger multi-centre UK study is required to determine optimum maintenance.

P03

Can Invitro Cytoimmunoassay individualise adjuvant intravesical therapy for superficial bladder cancer

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Introduction: Intravesical therapy with drugs to reduce recurrence and disease progression have not yielded optimal results. Polychromatotropic and heterogenecity produces resistant subclones resulting in early resistance. Hence there is a need to individualize drug regime to reduce resistant subclones. Our aim was to individualize drug regimen based on Invitro cytoimmunoassay tumor cell culture.
Material and methods: A total of 110 patients, 90 males and 20 females between 17 to 78 years of age having Ta and T1 disease of all grades were randomized into two groups based on their cytoimmunoassay, Group A - 59 patients had positive while Group B - 51 patients had contaminated Invitro cell culture. Group A received drugs based on cytoimmunoassay while Group B received 120 mg of BCG weekly for six consecutive weeks. Mean followup period was for 36 months.
Result: Recurrence was 12.25% in Group A, 29.24% in Group B. Average time to recurrence and progression was 12–15 months and 18–22 months in Group A and 6–9 months and 9–16 months in Group B respectively. Toxicity rate was 10% in Group A while 31% in Group B.
Conclusion: Individualization of intravesical therapy not only reduces recurrence rate and disease progression but also is cost effective with low toxicity.

P04

An investigation into the prognostic significance of necrosis and hypoxia in high grade and invasive bladder cancer

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Introduction: The development of areas of chronic severe hypoxia in bladder cancer may result in a more aggressive tumour.
Materials and methods: Ninety-eight primary cystectomy specimens scored for necrosis on whole sections as either absent, <5 mm (comedo) or >5 mm (gross); and scored on tissue array for hypoxia-associated markers Carbonic anhydrase IX (CA IX), Hypoxia-inducible factor 1alpha (HIF1a), 2alpha (HIF2a) and Bcl2/adenovirus-sEIB19kD-interacting protein 3 (NIP3).
Result: Clinical data was available in 91; 18 stage T0/1, 20 T2, 41 T3, and 12 T4. Median follow-up 22 months. Nodal status was only reported in 45%. The prevalence of necrosis increased with stage (T0-1 17%, T2 30%, T3 70%, T4 71%). Necrosis but not HIF1a was significantly associated with stage ($P = 0.0001$) and nodal status ($P = 0.016$). HIF1a and CA IX showed a significant association with necrosis. Stage ($P < 0.0001$), necrosis ($P < 0.0001$) and intense HIF1a positivity ($P = 0.048$) were significant prognostic factors on univariate analysis. Stage ($P < 0.001$, HR3.29 95%CI 1.80–6.04) and necrosis ($P = 0.04$, HR1.92

95%CI 1.05–3.51) were independent prognostic factors on multivariate analysis; HIF1a lost significance (P = 0.07, HR1.36 95%CI 0.98–1.88).
Conclusion: Necrosis is common in high grade and invasive bladder cancer. The presence and amount of necrosis is a prognostic risk factor independent of T stage.

P05
Clinical understaging of muscle invasive bladder cancer
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Introduction and objectives: Despite advanced imaging techniques, including MRI and CT, clinical understaging of invasive bladder cancer is still a problem in clinical practice. We designed this study to evaluate the clinical and pathological staging in patients who underwent radical cystectomies for bladder TCC.
Material and methods: We identified 59 patients, 53 male, 6 female, who underwent cystectomies for muscle invasive bladder cancer between 1992 and 2005. The age ranged between 27 and 80, mean 68 years. Bimanual clinical examination under GA, CT & MRI findings and bladder biopsy have been compared with pathological staging after cystectomy. 43 patients had primary cystectomies and 16 patients had salvage cystectomies after failure of radical radiotherapy.

TABLE 1 Difference between clinical and pathological staging

Clinical stage	Pathological
CIS, pTa, pT1 - 14 patients	CIS, pTa, pT1 - 8 patients No tumour -3 patient T3/T4 - 3 patients
T2 - 40 patients	T2 - 14 patients T3/4 - 21 patients CIS, T1 or no tumour - 5
T3 - 4 patients	T3 - 3 patients T4 - 1 patient
T4 - 1 patient	T4 - 1 patient

Conclusion: We conclude that significant clinical understaging occurred in 25 patients (42.3%) in this study. 24 patients tumours were upstaged from T1/T2 to T3/T4 and in one case from T3 to T4.

P06
Rates of cystectomy in superficial bladder cancer patients in the UK
B.E. AYRES, S. McPHAIL, R. PERSAD, B. COTTIER, J. VERNE and D. GILLATT
Bristol Urological Institute and on behalf of the BAUS Cancer Registry Project with The South West Public Health Observatory and The National Cancer Surveillance and Analysis Team, Bristol, UK

Introduction: The treatment of superficial bladder cancer is a topic under active discussion, in particular the decision to proceed to radical therapy in high grade tumours. We investigate the rate of cystectomy in superficial bladder cancer.
Methods: We have linked the Cancer Registry databases, the Hospital Episode Statistics database, and the clinical database of the British Association of Urological Surgeons on a patient-by-patient basis. These sources respectively contribute a population based registry of cancer cases, a record of in-patient procedures, and a clinical definition of the stage at diagnosis. This creates a cohort of 9154 patients with high risk (T1 or TaG3) and 9732 patients with low risk (TaG1-2) superficial bladder cancer, diagnosed over a period of 6 years. Uniquely, we are able to follow subsequent in-patient procedures to the time of death.
Results: Analysis on data from one geographical region (about 10% of the patient cohort) finds that 4% (high risk) and 0.5% (low risk) of patients receive a cystectomy. In addition, 50% (high risk) and 39% (low risk) of patients undergo multiple inpatient endoscopic resections or cystodiathermies.
Conclusion: This analysis indicates that the rate of cystectomy in high risk superficial bladder cancer is lower than comparable international rates.

Tuesday 19 June 1330–1430
Stones
Chairmen: Adrian Joyce and Daron Smith

P07
Paediatric bladder stone disease: a study of nutritional factors predisposing to its cause.
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Introduction: To study the dietary habits and socioeconomic factors contributing to formation of bladder stones in children.
Materials and methods: The study was conducted between August 2001 and July 2003. It was a prospective, descriptive and non-interventional study. A record of all paediatric patients admitted during the period was kept. Of all the paediatric patients presenting to our department, those with lower urinary tract symptoms were routinely examined and investigated and a convenience sample of 52 patients having bladder stones was taken according to the specified criteria. Their nutritional habits were recorded. Malnutrition if detected was classified according to the WHO criteria.
Results: Malnutrition was detected in a total of 30 patients (57.6%) with vesical calculi. Of these, 23 patients (82.1%) had idiopathic stone disease, two patients (6.66%) had anatomical abnormalities, one patient (3.33 %) had metabolic abnormalities, three patients (10%) had infective stones and one patient (3.33%) had associated neurological abnormalities.
Conclusions: Malnutrition and poverty contribute tremendously to the formation of bladder calculi in children in whom bladder outlet obstruction, infection and neurological abnormalities are absent. This trend depicts the endemic nature of the disease.

P08

Incidence and management of bladder stones in patients with long-term urinary catheters: The Catheter Research Clinic

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Introduction: Patients with long-term catheters mainly consist of elderly people who suffer from chronic disabilities, and about 50% of them experience recurrent catheter encrustation and blockage. We introduced the idea of managing such patients in a dedicated clinic, and the incidence of bladder stones was also established.
Methods: A total of 260 consecutive new patients were prospectively assessed between February 2002 and October 2006. Patients with bladder stones were screened for recurrence at 3, 6 and 12 months after treatment.
Results: In all, 117 males and 143 females were analysed (mean age 67.7 years, range 23–97). 147 (55.5%) had visible catheter encrustation. Flexible cystoscopy revealed that 66 of the 147 patients (45%) had bladder stones. In 48 patients (73%), stones were removed with the help of a tipless stone basket at the same clinic appointment. Eighteen patients (27%) were referred for inpatient treatment. 30% patients formed recurrent bladder stones (mean follow-up 8.1 months, range 3–18 months).
Conclusion: The introduction of a dedicated catheter clinic, equipped with facilities such as flexible cystoscope and a hoist, enables patients to be seen in an environment that meets their needs and potentially reduces the risk of more complex stone removal and catheter problems at a later date.

P09

7 mm. is an appropriate cut off for treatment of distal ureteric stones by single session in situ extracorporeal shock wave lithotripsy

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Objectives: To determine an appropriate cut off for treatment by single session in situ extracorporeal shock wave lithotripsy (SWL) for distal ureteric stones using efficiency quotient (EQ).
Methods: This is a review of a series of patients undergoing SWL for primary, single distal ureteric stones. All 153 patients were treated on a Dornier MPL 9000 lithotripter in prone position under intravenous sedation. The stone size was measured in two dimensions (parallel and perpendicular to the long axis of ureter). The EQ was calculated, using standard formula.
Results: A total of 141 (92.2%) were stone free in the mean period of 12.2 +/- 12.2 days EQ of 69. There were no significant complications and none of the patients required admission. The treatment failed in 10 (6.5%) patients, who subsequently required ancillary procedures in the form of ureteroscopy. Statistically, 7 mm is an appropriate cut off for treatment by *in situ* SWL. The EQ for stone >7 mm and <7 mm was 58 and 81.
Conclusions: Ultrasound-guided shock wave lithotripsy is an efficient and safe modality for the treatment of distal ureteric stones <7 mm. On an echo-guided lithotripter it is a radiation free, day care procedure performed under sedo- analgesia with only 11% requiring re-treatment.

P10

***In vitro* evaluation of the StoneBreaker™: a novel cordless pneumatic lithotripter**

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Aims: To evaluate the safety of the StoneBreaker™ (LMA Urology, Switzerland) in an acute ureteral perforation model. Secondly, we compared the fragmentation efficiency of the StoneBreaker™ to the Swiss Lithoclast™ (EMS, Switzerland) in an *ex vivo* model.
Methods:

1. A freshly harvested porcine ureter was ligated and distended with methylene blue. The 1 mm StoneBreaker™ probe was advanced under endoscopic vision to the wall and fired one hundred times. The number of pulses required to perforate was recorded.
2. The StoneBreaker™ was set at an artificially high pressure and the device was fired directly at a distended ureter in a live pig. Serial segments were harvested for histology.
3. To compare fragmentation efficiency, the number of hits required to break Ultracal-30 stone phantoms to fragments smaller than 7 mm was recorded for both the StoneBreaker™ and the Swiss Lithoclast™.

Results: No evidence of perforation was seen even at high pressure settings. For large stone phantoms (mean 7.4 g), the Lithoclast™ required an average of 307 fires, as compared to 77 for the StoneBreaker™ ($P < 0.001$).
Conclusions: In the porcine model, the StoneBreaker™ does not perforate the ureter. The StoneBreaker™ is more efficient than the Swiss Lithoclast™ at fragmentation of stone phantoms *ex vivo*.

P11

A systematic review of studies reporting complications of upper urinary tract stone ablation using the Holmium:YAG laser

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Introduction: We performed a systematic review of the literature of studies reporting complications of upper urinary tract stone ablation using the Holmium:YAG laser.
Patients and methods: Electronic databases were searched using specific keywords to identify relevant studies. Reference lists of identified articles were scrutinised for other studies and searches were conducted using the names of authors known to have published widely in this field. Two reviewers assessed retrieved articles for inclusion and exclusion criteria. Disagreements in either study inclusion or data extraction were resolved by a third reviewer. Patients <16 years old were excluded.
Result: A total of 3521 patients were identified from 38 studies published between 1995 and 2006. Overall, 148 (4.20%) complications were identified (see table). No deaths were reported. Considerable variation was observed between studies in terms of stone size and position, and previous attempts at ablation.

Complication	Number (%)
Sepsis	39 (1.11)
Ureteric perforation	27 (0.77)
Ureteric stricture	21 (0.60)
Urinary retention	8 (0.23)
Laser malfunction	8 (0.23)
Other minor	43 (1.22)
Other major	2 (0.06)

Conclusion: Upper urinary tract stone ablation using the Holmium:YAG laser is safe and reliable with few reported complications. Follow-up imaging to detect procedure-specific complications is not routinely indicated given the low complication rate.

P12

Rapid de-blocking of ureteric stones with extracorporeal shockwave lithotripsy (SWL) is cost effective!

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We analysed savings of SWL for ureter stones within 72 h of symptoms as opposed to a conservative approach with delayed treatment. A total of100 consecutive patients with a single obstructing non-infected ureter stone were analysed. 49 patients were treated within 72 h of onset of symptoms, 51 later than that. We calculated hospital days, out-patient consultations, adjuvant treatments, ambulance transports, investigations, and potential time off-work. The Wilcoxon Rank-Sum (Mann–Whitney) test was used for the statistical analysis. Time to stone-freeness was 3 days with rapid SWL and 93 days with delayed SWL. Epidemiological-, stone-, and treatment-data were comparable in both groups. Total costs for rapid SWL were £2760 and for delayed SWL £3650. Cost saving through rapid SWL is £891 per patient (24%) ($P < 0.001$). Every day until stone-freeness is a potential day off-work calculated by the British industry as £50/ day. There is a potential saving of £4650. Rapid SWL within 72 h of onset of symptoms for non-infected obstructing ureter stones leads to significant cost savings through faster results. This justifies the necessary infrastructure to provide the service, i.e. manpower, out-of-hours treatments etc.

P13

The development of an algorithm from measurements in non-contrast computerized tomograms to improve selection of upper ureteric stone for shock wave lithotripsy

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Introduction: To formulate clinical algorithm, based on parameters measured by non-contrast CT (NCCT), for improvement of patient selection for ESWL.
Patients and methods: Patients with upper ureteric stone of size ≥ 5 mm and planned for ESWL were recruited. Primary outcome was stone-free rate at 3-month after one session of ESWL (SFR). Multivariate analysis was performed to assess the role of various CT parameters on SFR.
Results: Fifty-five patients were recruited. The overall SFR was only 52.7%. Patients were divided into two groups, stone volume (SV) ≤ 0.2 cc and >0.2 cc. For patients with SV ≤ 0.2 cc (20), SFR was 85% and was independent of all CT parameters. However for patients with SV > 0.2 cc (35), SFR was only 34.3% and multivariate analysis showed mean stone density (MSD) and skin to stone distance (SDep) were significant predictors for SFR. Amongst these, for patients with either MSD ≤ 600 or Sdep ≤ 85 mm, SFR were 53.9%(9/17). Overall speaking, for stones with SV ≤ 0.2 cc or MSD ≤ 600 or Sdep ≤ 85 mm, SFR improved to 70.3%(26/37).
Conclusions: SV, MSD and SDep were significant predictors for SFR of ESWL for upper ureteric stone. By formulating algorithms based on these parameters, SFR can be improved.

P14

A retrograde approach is an effective management option for large renal calculi

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Introduction: Large renal calculi have historically been managed with PCNL or ESWL, with associated morbidity, mortality and treatment failure. We present our data using a retrograde approach to large renal stones when PCNL/ESWL are contraindicated, failed or refused.
Patients and methods: Rigid/flexible URS with holmium laser or lithoclast lithotripsy was used, leaving an end-flushing or JJ stent. Patients were prospectively entered onto a database. Casenotes and imaging were systematically reviewed.
Result: Twenty-eight patients were analysed. Mean stone size was 2.7 cm (range 2.0–6.0 cm). Common indications were ESWL failure (39%), anatomical/obesity (21%) patient choice (11%) and failed PCNL access (7%). Stone clearance (no fragments >3 mm on follow-up imaging), was found after one URS treatment in 68%, with 53% of these patients requiring post-operative ESWL (eight patients) or PCNL (two patients). Two URS sessions were required in 25% of patients (two required ESWL/ PCNL). Three URS sessions plus ESWL was used in a cysteinuria patient. Median operating time was 60 min. Complications were minimal: four patients had UTI, one failed TWOC, one AF, and one stent migration.
Conclusion: Retrograde URS treatment is safe and effective in large intra-renal calculi, either with the intention of stone clearance or de-bulking prior to other treatment.

P15

Role of inflammatory markers as an aid to emergency management of the obstructed kidney

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Introduction: We investigated the relationship of inflammatory markers: WBC, absolute neutrophil count and C reactive protein in predicting the emergency management of the obstructed kidney.
Methods: A prospective study was conducted at our hospital. Patient inclusion criterion was: acute renal colic due to urolithiasis. CRP (units), WBC, urea and creatinine were measured on acute admission. A logistic regression was used to identify variables, which might predict the need for intervention. Receiver Operating Characteristic (ROC) curve areas were calculated and compared.
Results: Between May 2005 to December 2006, 104 patients presented with acute renal colic. On clinical grounds 31 (30%) required emergency intervention. On logistic regression, CRP ($P < 0.0001$) and creatinine ($P = 0.0052$) significantly predicted the need for an intervention (Chi square $P < 0.0001$). The ROC curve areas predicting intervention depending on creatinine, CRP, and the combination creatinine and CRP were 0.78, 0.87 and 0.89 respectively. There was no significant difference between ROC areas for CRP alone or the combination CRP and creatinine ($P = 0.662$, CI for difference -0.06 to 0.09).
Conclusions: CRP is a well-recognised, though non-specific inflammatory marker. This is the first time its potential value in obstructed kidney has been demonstrated. Serum CRP may help in the management of renal colic patients.

Tuesday 19 June 1430–1530
Bladder Cancer – Diagnosis
Chairmen: John Anderson and Derek Rosario

P16

The role of urine cytology in the initial assessment of patients with haematuria

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Introduction: All haematuria protocols include urine cytology as part of the investigations. This prospective study evaluates its role in a one-stop haematuria clinic.
Patients and methods: A total of 238 patients attended from January to October 2006. The protocol for investigating patients included MSU, urine cytology, flexible cystoscopy, and renal USS. Most also underwent IVU or CT.
Results: Malignancy was detected in 57 patients (23.9%); 47 had bladder tumours (46 TCC, 1 SCC), six upper tract TCCs, three RCCs and one lymphoma. 31 cytology samples were consistent with or suspicious of malignancy. Within this subset, 30 cases of TCC (25 bladder, five upper tract) were diagnosed with other protocol investigations. No malignancy was detected in the remaining case despite an IVU, retrograde pyelograms and bladder biopsies. 54.3% of 46 patients with bladder TCC and 83.3% of six with upper tract TCC had positive cytology. All urothelial malignancies were diagnosed with protocol investigations other than urine cytology. The cost of each urine cytology was approximately £19.74.
Conclusion: No urothelial maligancy would have been missed without routine use of urine cytology and hence its continued utilisation cannot be supported.

P17

Urine cytology in the investigation of haematuria – Is it really worth it?

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Introduction: Current guidelines recommend urine cytology in the routine assessment of haematuria to help identify occult upper tract tumours. We reviewed the costs and benefits of this approach for the patient and healthcare provider.
Patients and methods: All urine cytology was reviewed over a 32 month period. Patients with atypical cytology (C3-5) and no diagnosis using standard assessment (cystoscopy and renal imaging) were reviewed to determine if additional cancers were detected on re-investigation; the morbidity of investigations; the estimated cost and any beneficial effect on survival or recurrence.
Result: Nine per cent of 1829 samples were atypical, of which 40% had no diagnosis after initial assessment. Further upper tract assessment revealed no additional tumours (10% experienced significant morbidity). During a median 30 month follow-up, no additional tumors became apparent and no additional patients died. The estimated cost was £51 908 for the cytology alone.
Conclusion: Urine cytology added significantly to the cost and morbidity of haematuria assessment without influencing cancer detection or survival. Whilst routine urine cytology is known to pick up the odd upper tract tumour, it seems hard to justify in the current financial climate. We suggest further research would help identify high risk groups for whom it should perhaps be reserved.

P18

CT urogram as an initial investigation for frank haematuria

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Aims: We offered a CT urogram (CTU) as an initial investigation for frank haematuria in an attempt to cut waiting times and reduce unnecessary investigations.
Patients and methods: Any patient over 40 years with frank haematuria attended straight from the GP for CTU (and blood tests as well as urine cytology) and flexible cystoscopy the same afternoon. We audited 13 months (Aug 2005 : September 2006).
Results: CTU (n = 269) revealed evidence of: Carcinoma [renal (n = 2), ureteric (n = 1), bladder (n = 17)], calculi [ureteric (n = 4), renal (n = 13), bladder (n = 2)], and other pathologies (n = 16). In those with bladder tumour no cystoscopy was performed, instead a date for definitive treatment was arranged. Cystoscopy revealed a further 16 bladder tumours (49%). PSA testing revealed four cancers (from 26 biopsies). Time lapse from referral to date of attendance was a median of 36 days and from referral to date of first treatment for cancer patients was a median of 65 days.
Conclusions: All patients with frank haematuria over 40 require a CTU. Carrying out an initial CTU cuts waiting times significantly, eliminates need for other investigations and provides staging information. However it is not sensitive enough to replace flexible cystoscopy as a complete investigation for frank haematuria.

P19

Narrow band imaging flexible cystoscopy in the detection of recurrent urothelial cancer of the bladder

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Introduction: Narrow band imaging (NBI) is an optical image enhancement technology, narrowing the bandwidth of light output from the Olympus Exera II system to 415 nm and 540 nm. This narrow bandwidth of light penetrates only the surface of tissues, increasing the visibilty of capillaries and delicate surface tissue structures. We investigated NBI's potential to enhance the detection of recurrent urothelial cancers (UCs) of the bladder.
Patients and methods: Over a 12-month period at The Queen Elizabeth Hospital, Birmingham, NBI flexible cystoscopy was performed on 25 patients with known recurrences of urothelial cancer (UC) of the bladder following initial conventional white light imaging (WLI) flexible cystoscopy with the same instrument.
Results: Subjectively, NBI provides a much clearer view of UCs and in particular their delicate capillary architecture. Objectively, NBI detected 12 additional UCs in nine of the 25 patients, as compared with WLI,

a mean difference of 0.48 UCs per patient with a Wilcoxon signed rank test *P* -value of 0.03.
Conclusions: NBI provides an important and significantly increased detection rate for recurrent bladder UCs than conventional WLI. Further evaluation of NBI flexible cystoscopy in a larger number of patients is ongoing in our unit.

P20
Does Fluorescence enhanced Cystoscopy (FC) and transurethral resection of bladder cancer improve accuracy and as a result patient care?
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Department of Urology and Department of Pathology, University Clinic of RWTH Aachen, Germany

Introduction: The impact of intravesical instilled 5-aminolevulinic acid (ALA) enhanced FC in the diagnosis and transurethral resection of bladder tumors (TURBT) is still under debate. Prospectively we evaluated if ALA-FC compared to white light cystoscopy (WLC) improves staging accuracy, subsequently the choices of adjuvant therapy and thus patient care.
Patients and methods: A total of 49 patients underwent WLC and ALA-FC enhanced TURBT by the same surgeon. The total number of tissue samples was 277; from these 48 were Ta tumors, nine were T1 tumors and 21 CIS resulting in a 97.3% sensitivity and 97.1% specificity.
Results: In 15 out of 49 patients (30,6%) ALA FC revealed tumors or CIS which were overlooked with WLC. Nine of the 48 Ta tumors (18,7%) and 13 (five first time, seven on 2nd look TUR, one recurrence) of the 21 CIS (61%) were overlooked with WLC. Subsequently treatment of six patients (12%) changed substantially with the help of ALA FC due to improved CIS staging.
Conclusions: ALA fluorescence enhanced cystoscopy and transurethral resection improves the diagnostic accuracy of bladder cancer staging, especially in CIS. As a result the therapeutic management plan may change allowing to choose the most beneficial treatment for the patient.

P21
Hexylaminolevulinate Photodynamic Diagnosis (HPD) following intravesical Bacille Calmette Guerin (BCG) for superficial bladder cancer
E.R. RAY, K. CHATTERTON, N. COULL, K. THOMAS, M.S. KHAN and T.S. O'BRIEN
Guy's and St. Thomas' NHS Foundation Trust, London, UK

Introduction: The ability of photodynamic diagnosis to diagnose occult carcinoma-in-situ in patients previously treated with BCG demands evaluation. Anecdotal reports suggest chronic inflammation produces problematic non-specific fluorescence with 5-aminolevulinic acid; this study evaluates the novel photosensitizer hexylaminolevulinate.
Patients and methods: A total of 27 patients undergoing 32 rigid cystoscopies were recruited prospectively. The photosensitizer was Hexvix® (PhotoCure). 10 patients receiving BCG in 2004 who underwent white-light cystoscopy alone acted as a control.
Results: The median age was 70 years (range 49–82). 36% of fluorescent biopsies contained tumour (true positive) whilst 64% were benign (false positive). The true positive rate rose to 65% in the eight patients in whom pre-operative urine cytology was suspicious. The median number of days after the last dose of BCG was 59 (range 29–226). There was no relationship between rates of false positive biopsies and time since last BCG. Additional pathology was detected by fluorescence alone in five patients: one(3%) prostatic extension; one(3%) pT1G3 plus carcinoma *in situ* and three(9%) hyperplasia/dysplasia. The false positive biopsy rate in the control group was 94%.
Conclusion: HPD within 3 months of BCG treatment can detect significant occult pathology. The false positive biopsy rate, although high, compares favourably with that seen during conventional white-light cystoscopy.

P22
Hexylaminolevulinate photodynamic assisted cystoscopy in the investigation of clinically unconfirmed positive urine cytology
E.R. RAY, N. COULL, K. CHATTERTON, A. CHANDRA, M.S. KHAN and T.S. O'BRIEN
Guy's and St. Thomas' NHS Foundation Trust, London, UK

Introduction: Photodynamic diagnosis (PDD) assisted cystoscopy may be useful in investigating patients with positive urine cytology (PUC) who have no evidence of disease after standard initial investigations.
Materials and methods: Twenty patients with PUC, but no histological evidence of cancer, were investigated. The photosensitizer was Hexvix® (PhotoCure) and the D-light system (Storz) was used to detect fluorescence.
Results: Twenty-two PDD assisted cystoscopies were done on 20 patients. 18/20(90%) patients were male and the median age was 65(range 24–80). 14/20(70%) were previously untreated for TCC whilst 6/20(30%) were under TCC surveillance. TCC bladder was diagnosed in 7/22(32%) cases; in 2/22(9%) tumour was detected under white and blue light and in 5/22(23%) by fluorescence alone. Histology included 3/22(14%) carcinoma-in-situ and 2/22(9%) dysplasia. Of PDD negative cases: 5/22(23%) had stones; 1/22(5%) had upper tract TCC and 1/22(5%) had carcinoma-in-situ diagnosed on white light 6 months later. Review of the cytology specimen by reference pathologist in 3/20(15%) patients failed to demonstrate suspicious cells. Another 3/20(15%) patients have no diagnosis after 5 months follow-up (range 0–11).
Conclusion: PDD is a key step in the management of these patients. In this series an explanation for PUC was found in 23% of cases by PDD.

Tuesday 19 June 1530–1630
Governance – Clinical
Chairmen: Derek Fawrett and Kieran O'Flynn

P23

Ultimate urology: taking one stop, one step further

N. COULL, E. JENKINS, E.R. RAY, B. COKER, M. PARDOS-MARTINEZ and T.S. O'BRIEN
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Introduction: Maximising the efficiency of outpatient practice makes clinical sense, and in the future may make financial sense if follow up visits are not to be routinely reimbursed by PCTs.
Methods: A total of 391 records of patients seen in pilot one-stop clinics were analysed. Basic diagnostic tests (flow studies, ultrasound, cystoscopy) were available in clinic. The reasons for follow-up consultations were analysed and categorised.
Results: A total of 266 patients (68%) did not require outpatient follow up. 86 patients (22%) received follow up appointments for diagnosis (Group A), and 39 patients (10%) to assess the results of drug treatment (Group B). Within Group A, patients required further diagnostic tests, either intravenous urograms, CT/MRI scans, nuclear medicine studies, urodynamics, prostate biopsies, or general anaesthetic cystoscopies (n = 8). In group B, 22 (56%) of visits were to assess LUTS; six (15%) were to review patients with UTI treated with antibiotics.
Conclusions: Prostate biopsy, urodynamics, and advanced imaging need to be incorporated into one-stop clinics, thus enabling discharge of up to 88% of patients without follow up. Telephone follow up and shared care initiatives of patients with LUTS should replace routine outpatient review.

P24

Microscopic haematuria – do urologists follow the CKD guidelines?

B.E. AYRES, H.P. BURDEN, J. REES and R. PERSAD
Department of Urology, Bristol Royal Infirmary and Backwell and Nailsea Medical Group, Bristol, UK

Introduction: The UK Chronic Kidney Disease (CKD) guidelines (2005) propose a framework for the management of microscopic haematuria. Although the majority of the work can be performed in the community it is important urologists implement it to streamline and improve patient care and educate others.
Patients and methods: A review of all urgent 'two week wait' referrals for microscopic haematuria to one hospital from March to August 2006 was performed (n = 37). All cases were assessed for serum creatinine measurement, estimated glomerular filtration rate (eGFR) calculation and analysis for proteinuria in accordance with the CKD guidelines.
Results: A urological cause was identified in 13 cases with one bladder malignancy. Excluding one patient who self-discharged, 23 patients did not have all the investigations recommended in the CKD guidelines. The serum creatinine was not measured in 10 cases and analysis for proteinuria was not recorded in 16 cases. Two patients with an eGFR of less than 60 ml/min/1.73 m^2 were not referred to a nephrologist and two with dipstick proteinuria did not have protein:creatinine ratio measurements, - contravening CKD guidelines.
Conclusion: Urologists need to be made aware of the 2005 CKD guidelines to ensure that patients with microscopic haematuria receive appropriate investigations and management.

P25

A new supra-regional penile cancer service employing an urgent fax/e-mail response system and regular multidisciplinary (MDT) meetings via teleconferencing

D.J. SUMMERTON, J.C. GODDARD, M. BAMFORD, N.J. MAYER, R. ARUMUGAM and T.R. TERRY
University Hospitals of Leicester NHS Trust, UK

Introduction: It is recommended that penile cancer (PC) is treated in networks with greater than a 4 million population. Activity before and during the first year of a new supraregional service (population 6.5 million) is presented.
Patients and methods: The details of all PC cases within the region were faxed or e-mailed on a standard proforma to the co-ordinating hospital. A management plan, based on EAU guidelines, is returned within 48 h. All cases are discussed monthly at a meeting between multiple network hospitals via a Tandberg 2500 teleconferencing system.
Results: Prior to the new service, the index hospital (population 1 million) performed five PC operations per year. In the first calendar year of the supraregional system, 53 new PC cases were discussed. The lead site has performed 17 biopsies, 14 glansectomies, 10 partial and six total penectomies, and 16 inguinal and one pelvic lymphadenectomies. Central histological review has resulted in five upgraded cancers.
Conclusion: The introduction of a supraregional system and a PCMDT has aided the rational treatment of this rare but important disease. Surgical experience has been significantly concentrated. Teleconferencing is a convenient, time-efficient and effective method. The implications, advantages and potential development of this system are discussed.

P26

Patient's satisfaction following transfer of care from a District General Hospital (DGH) to its designated cancer centre

F. MANIZATE, D. HAYNE, C. LYNCH, B.D. SARMAH and H. OJHA
Heart of England NHS Trust, Birmingham, UK

Introduction: Cancer centres offer the potential to deliver improved outcomes but patients may be reluctant to be treated elsewhere than their local hospital.
Methods: Sixty-two consecutive patients undergoing radical prostatectomy between April 2005 and December 2006 at our designated cancer centre, having been previously assessed at a DGH, were contacted by telephone and detailed questionnaires completed. Overall patient experience was rated on a 10 point scale.
Results: Fifty patients (81%) participated. Four patients (8%) had initial concerns regarding transfer of care and 6 (12%) felt the reasons for transfer were not adequately explained. When asked about traveling distance seven patients(14%) raised personal concerns, whereas 15(30%) raised

concerns for their family. Forty-four patients(88%) felt that the transfer of care was well organized and 42(84%) felt follow up was good. Forty-six patients(92%) were satisfied with administrative aspects, 47(94%) with cancer centre staff and no patient felt discriminated against. Importantly, overall experience was rated as 8–10 by 45 patients(90%) and 48(96%) would recommend the cancer centre to other patients.
Conclusion: Overall patient satisfaction with transfer of care away from their DGH to a designated cancer centre was high supporting the model of providing high quality cancer services in high volume centres.

P27
Follow-up of stable prostate cancer patients–a novel approach
L. McLORNAN, S. LIGGAT, D. McLAREN, P. MARIAPPAN, P. BOLLINA and S.A. McNEILL
Western General Hospital, Edinburgh, UK

Introduction: The incidence of Prostate Cancer in the United Kingdom increases steadily with heightened public awareness and better detection methods. In our region approximately 297 new cases of prostate cancer are diagnosed yearly with significant implications for Urological workload. We sought to determine whether stable prostate cancer patients could be managed effectively in the community and review the impact on hospital workload.
Methods: Patients stable on treatment for 1 year were offered entry into a novel follow-up programme involving 6-monthly postal questionnaire symptom review and PSA by GP. Results were collated and monitored by a hospital-based nurse-specialist.
Results: During November 2001 to November 2005, 1151 patients were transferred to postal follow-up. 128 died during this period and 172 were fast-tracked back to consultant clinic system for management of symptoms or rising PSA. 851 patients remain on postal follow-up. We estimate that this has provided 256 h of medical time which has allowed patients with new diagnosis to be seen within 2 weeks.
Conclusion: The benefits to patients and service in reducing visits to increasingly busy clinics are self-evident. Postal follow-up is an effective means of managing stable prostate cancer patients safely at home. We continue to expand this service.

P28
Emergency (on-call) urological services: can the core urologist provide effective and competent cover?
T. GUNENDRAN[1], A.M. SINCLAIR[2], M. MOKETE[1] and I. PEARCE[3]
[1]Royal Preston Hospital; [2]Stepping Hill Hospital, Stockport; [3]Manchester Royal Infirmary, UK

Introduction: The shortened 3 year urology programme will deliver a Consultant Urologist trained only in core urology. What impact will this have on the provision of future emergency urological services?
Material and methods: A prospective analysis of all emergency urological procedures undertaken at two hospitals were recorded and future predictions made.
Results: A total of 171 emergency procedures were recorded (83 - hospital 1, 88 - hospital 2) of which 63 (36.8%) were undertaken outside routine working hours. In total, 85 (49.8%) procedures were endourological, 68 (39.7%) involved inguino-scrotal and penile surgery while 18 (10.5%) required laparotomies. Only seven (11.1%) of the total 18 laparotomies were undertaken outside normal working hours over the 1 year period with a single case being operated on between midnight and 0800 hours.
Conclusion: 89.5% of emergency urological surgery involves either endourological, inguino-scrotal or penile surgery, with a fair proportion being conducted during working hours. These emergency procedures can be safely undertaken by the Core Urologist as it forms part of the core competency skills as outlined in the updated training manual. This study enables future workforce planning and supports the provision of on-call services by the Core Urologist.

P29
The cost ineffectiveness of specialist nurses in the diagnosis of incontinence
R. MADANI and J. MALONE-LEE
University College London, Whittington Hospital, London, UK

Introduction: The deployment of clinical nurse specialists into patient diagnosis, as part of triage systems, has become popular. Adam Smith proposed the division of labour because persons skilled in a process accomplish it faster, economies are thus achieved from higher productivity. Doctors constantly train in diagnoses whereas nurses focus on care delivery.
Patients and methods: Performance data were collected over 30 months from two incontinence clinics seeing a similar patient population. One was a specialist nurse clinic (900 consultations) and the other a specialist physician clinic (3108 consultations). Outcome variables were patient numbers; new, repeat, and failed attendances and consultation times.
Results: The nurse processed daily a mean of 4.2 patients; the physician seven patients. Non-attendance (DNA) rates for the nurse were 19%, for the physician 8%. 45% of nursing DNAs and 83% of physician DNAs ultimately attended. Patients' attendances averaged 3.3 for the physician and 2.1 for the nurse. Consultation times averaged 16 min for the physician and 33 min for the nurse. Salary costs per patient consultation were £50 for the nurse and £60 for the physician.
Conclusion: These price margins refute the cost-effectiveness of specialist nurses working as diagnosticians in managing patients with incontinence.

P30
'Hospital at Home' – a service to reduce hospital stay
M. MURUGUKALAI SELVAN, G. LAMBERT, P.W. COOKE, B. WAYMONT, J.A. INGLIS and N.H. PHILP
New Cross Hospital, Wolverhampton, UK

Introduction: 'Hospital at Home' service was introduced to provide early discharge of patients following endoscopic bladder outflow surgery. Subsequently, this service has been extended to provide Trial without Catheter (TWOC) in other groups of patients including patients with acute urinary retention on alpha-blocker therapy. Our pilot study has shown that the service is safe. We evaluate the impact of this service in managing the demand for acute hospital services.
Method: After TURP, patients are discharged home usually on the first post operative day. A trained urology nurse visits the patients at home to remove catheter. Patients undergo a portable bladder scan

6 h later. If necessary, recatheterisation is performed at home. For difficult catheterisation, a direct admission policy to urology ward is in place.
Results: Between April 2002 and March 2006, 608 patients were enrolled. 492 Primary TWOC and 116 repeat TWOC were undertaken. In 463 patients one hospital bed day has been saved. In the rest, more than one hospital bed day has been saved. Readmission rate is 1%. There were no other complications.
Conclusion: As per our pilot study, this service is safe, has very low readmission rate and saves at least one hospital bed day per patient.

Wednesday 20 June 1130–1230
Bladder Dysfunction and Female Urology
Chairmen: Simon Harrison and Julian Shah

P31

A simple well validated method for measuring urinary urgency

S.Z. AL-BUHEISSI and J. MALONE-LEE
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Introduction: Despite the long history of studies on the overactive bladder an effective method for measuring the symptom of urgency has yet to be described. A recent publication described how the circumstances in which people noted exacerbation of their urgency could be ranked linearly in relation to frequency and incontinence. The linear qualities of these relationships suggest a simple 10-item summed scale capable of quantifying urgency.
Patients: Data from 600 patients (Female = 524; Male = 73; mean age = 56; SD = 20) were used. They suffered from overactive bladder symptoms and were followed up on treatment.
Methods: Data on treatment response, frequency, incontinence and urge score were collected. These were used to assess construct validity, internal consistency, responsiveness (through two intervention studies), test-retest and inter-observer reliability.
Results: Construct validity - there was an appropriate correlation with incontinence and frequency (R = 0.37, P <0.001) showing evidence of additional discriminating power. Internal consistency - Cronbach's alpha = 0.83. Responsiveness - The score discriminated patient groups distinguished by response grade. The score detected intervention effects in two studies of treatment used to augment standard antimuscarinic therapy.
Conclusion: This very promising new score passed all standard tests necessary to justify its validity. Its use in the future may prove valuable in discriminating between-drug efficacy.

P32

10-year experience of sacral neuromodulation in urinary retention – results from UK tertiary referral centre

S.N. DATTA, C. CHALIHA, A. SINGH, R.B.C. KAVIA, C.J. FOWLER and S. ELNEIL
Institute of Neurology, National Hospital for Neurology and Neurosurgery, London, UK

Introduction: 10 years experience of using Sacral Neurostimulation (SNS) to restore voiding in women with urinary retention is reported.
Patients and methods: Between 1996–2006, 60 patients underwent SNS. The technique changed in 2003 from implantation of the stimulator and lead as a single stage, to a 2-stage procedure with implantation of the definitive lead first and the stimulator subsequently only if the test stimulation was effective.
Results: Complications include box site pain (25%), leg pain/numbness (25%), lead migration in (17%), onset new pelvic pain (8%) lead fracture (5%), and urethral pain / bladder spasm (5%). Prior analgesia/antidepressant history was associated with a higher complication rate. Failure and complications for the 1-stage procedure were not limited to the early follow-up period.
Conclusions: The 2-stage has comparable efficacy to the 1-stage technique but it is unlikely to be associated with fewer complications long term.

TABLE: for P32. Outcome data

	Single stage procedure	Two stage procedure
Number of patients	30	30
Age at insertion	34.1 years (21.6–51.2)	37.6 years (19.3–58.6)
Follow up	84.2 months (41.5–122.0)	11.7 months (2.8–22.4)
Spontaneously voiding	21 (70%)	22 (73%)
Mean residual volume	85.7 ml	113 ml
Number requiring CISC	5 (17%)	8 (27%)
Number with complications	21 (70%)	18 (60%)

P33

Randomised controlled study of cannabis based medicine (CBM, Sativex®) in patients suffering from multiple sclerosis associated detrusor overactivity

R.B.C. KAVIA, D. De RIDDER, N. SARANTIS, C. CONSTANTINESCU and C.J. FOWLER
National Hospital for Neurology and Neurosurgery, London, UK

Introduction: Bladder problems are a common feature of multiple sclerosis (MS). This study was designed to assess the efficacy of Cannabis Based Medicine (CBM, Sativex®) in alleviating bladder symptoms in MS.

Methods: A ten-week double-blind, randomized, placebo-controlled parallel group trial was conducted. 135 subjects were randomized to receive Sativex®/Placebo. The primary end-point was reduction in number of urgency incontinence episodes. Nocturia, urgency, overall-bladder-condition, daytime frequency, quality of life, patient's global impression of change (PGIC) were also recorded.
Results: The decrease from baseline in incontinence episodes/day was in favour of Sativex® group but did not reach statistical significance. There were significant reductions in nocturia (-0.28, $P = 0.010$) and daytime voids (-0.57, $P = 0.044$) with Sativex®. A statistically significant improvement in subject's opinion of bladder symptom severity with Sativex® was reported ($P = 0.001$); and PGIC where 83.6% (Sativex®) compared with 58.2% (Placebo) considered the status of their bladder condition had improved ($P = 0.005$). The decrease in urgency episodes in Sativex® treated subjects just failed to reach significance.
Conclusions: Sativex® treatment had a positive impact on the symptoms of overactive bladder in MS patients. This therapy clearly provides qualitative and quantitative multiple symptomatic improvement and a normalisation of the symptoms of urinary frequency for many MS patients.

P34

Intradetrusor injection of botulinum neurotoxin type A (BoNT/A) in the treatment of detrusor overactivity: results of repeat injections

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The National Hospital for Neurology and Neurosurgery, Queen Square, London, UK

Introduction: BoNT/A is now accepted as an effective second line treatment of neurogenic (NDO) and idiopathic (IDO) detrusor overactivity. At present, there are only few published reports of patients having undergone repeat treatments. We present here our results of patients who have been treated over a 3-year period.
Method: Patients with urodynamically proven spinal NDO/IDO refractory to pharmacotherapy were injected with 200u (IDO) or 300u (NDO) of BOTOX®. The mean ages of patients were 47.7, 50.2, 39.0 years for the 2nd, 3rd, and 4th injections respectively (range of 20–65). Baseline and follow-up assessment at 4 and 16 weeks post-treatment included urodynamics and 4-day bladder diaries.
Results: Thirty three patients (24 NDO, 9 IDO) received 2nd injections; 10 patients (6 NDO, 4 IDO) had 3rd injections and two (1 NDO, 1 IDO), 4th injections. Significant improvement in LUTS, urodynamic parameters in both subgroups were obtained, comparable to primary injections, as was the duration of action (overall range 0–16 months).
Conclusions: Patients respond to and tolerate intradetrusor BoNT/A well on successive treatments with similar improvements in clinical and urodynamic parameters, and duration of action as following the first injections. These results add to the accumulating evidence that detrusor injections of BoNT/A will be of sustained benefit to patients with DO.

P35

Analysis of voiding dysfunction following botulinum toxin-A treatment for overactive bladder

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Guy's Hospital and KCL School of Medicine, London, UK; National Hospital for Neurology and Neurosurgery, UCL Hospitals Foundation Trust, London, UK University of Pittsburgh, Pittsburgh, PA, USA

Introduction: Incomplete bladder emptying and intermittent self catheterisation (ISC) rates following botulinum toxin-A (BTX-A) treatment for overactive bladder varies between 0–45% in published literature. To assess this further, urodynamics were analysed in patients from two centers.
Method: Sixty-seven patients (27 males, 40 females) with idiopathic detrusor overactivity underwent injections of 200 U BTX-A (Botox®). Urodynamics were conducted at baseline, 4 and 12–16 weeks post-injection. Detrusor contractility was assessed with projected isovolumetric pressure (PIP1) in females and bladder contractility index (BCI) in males. Symptomatic patients with post void residuals (PVR) >150 mL were commenced on ISC. Statistical analysis was performed using Wilcoxon matched pairs and Mann–Whitney tests.
Results: Improvements in bladder capacity, compliance, and detrusor pressures were observed. PVR was significantly raised at 4 but normalised by 12 weeks. Nineteen patients required ISC and when compared to non-ISC patients, baseline maximal flow rate (15 vs 22 mL/s; $P = 0.003$), PIP1 (43 vs 58; $P = 0.02$) and BCI (113 vs 180; $P = 0.001$) were significantly lower. ROC analysis suggested a PIP1 ≤ 50 may predict ISC use (sensitivity 0.83; specificity 0.70; area under the curve 0.822).
Conclusion: A pre-treatment PIP1 ≤ 50 may predict incomplete bladder emptying and ISC use following 200 U BTX-A.

P36

Is patient history of stress urinary incontinence (SUI) a reliable predictor of urodynamic stress incontinence (USI) in women?

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Bristol Urological Institute, UK

Introduction: The National Institute for Health and Clinical Excellence (NICE) has recently published guidelines for management of urinary incontinence in women. The use of multi-channel cystometry was not routinely recommended in women with clearly defined clinical diagnosis of pure SUI. Some stakeholder groups are concerned that this recommendation was based on weak evidence.
Patients and methods: Records of females aged 18–80 who underwent urodynamics between 1990–2006 were retrospectively analysed. Those with neurological symptoms or previous continence surgery were excluded. The symptomatic diagnosis of pure SUI (without urgency or voiding dysfunction) was compared to the urodynamic diagnosis.
Results: Of the 7011 records analysed 324(5%) women had symptoms of pure SUI. Urodynamics showed detrusor overactivity in 44(14%) of these, 4(1%) had voiding dysfunction and 35(11%) were normal.

TABLE 1: for p36. Diagnostic accuracy for symptoms of pure SUI

	Sensitivity	Specificity	PPV	NPV
NICE meta-analysis	66% (17–83%)	83% (49–92%)	70% (41–95%)	69% (49–85%)
Our data	11%	98%	74%	72%

Conclusion: The low sensitivity and high specificity are probably due to the strict criteria in defining symptoms of pure SUI. The PPV indicates that in those patients there is

26% chance of other urodynamic diagnoses, for many of whom the findings could adversely affect the outcome of subsequent SUI surgery.

P37

Evaluation of sexual function in women with stress urinary incontinence using the Abbreviated Sexual Function Questionnaire (ASFQ)

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Pelvic Reconstruction and Urogynaecology Units; St. George's Hospital, London, UK

Objective: To evaluate sexual function using the Abbreviated Sexual Function Questionnaire (ASFQ) in women with stress urinary incontinence (SUI) pre- and post-placement of a trans-obturator tape (TOT).
Methods: A total of 81 women with SUI were recruited. The transobturator tape procedure was performed as per protocol. The ASFQ was administered pre-operatively, and at 6-weeks, 6-,12-, and 24-months post-operatively.
Results: Mean age is 55(R36-85). 56(69%) were sexually active, 7(12%) reported coital incontinence pre-operatively. Post-operatively, none reported coital incontinence. The ASFQ scores indicate a high probability of sexual dysfunction (SD) observed in all 4 domains. The higher rate of SD observed during the 6 week follow up is attributed to the fact that the questionnaire encompasses only activity that has occurred within 4 weeks. SD seemingly worsens at 24 months post-operatively however this may be due to the small number of respondents.
Conclusion: There is a need to further investigate and address the seemingly high rate of sexual dysfunction in women with SUI. Long-term follow-up of post-TOT patients is necessary to better judge if the procedure affects sexual function.

P38

The outcome of the Mitrofanoff procedure in neurogenic and non-neurogenic voiding dysfunction

R.W. REES and P.J. GUY
Salisbury District Hospital, UK

Introduction: Since the original description of the Mitrofanoff procedure in 1980, studies have revealed significant complication rates, with around a third of patients undergoing revisional surgery. Here we compare the outcome of surgery in neurogenic versus non-neurogenic voiding dysfunction at a regional spinal unit.
Patients: All (27) patients undergoing a Mitrofanoff procedure over a 12 year period were reviewed. (17 neurogenic, 10 non-neurogenic). The average duration of follow up was 5.1 years. Patient comorbidity, as well as the rates of stomal stenosis, leakage and revisional surgery were compared.
Results: The rates of revisional surgery were 52% and 90%, stomal stenosis 23% and 66%, stomal leakage 18% and 60%, and average number of operations 1.6 versus 3.1 for the neurogenic and non-neurogenic groups respectively. Of the 10 non-neurogenic patients, five had a history of depression, seven worked in hospitals, and all 10 had a history of chronic pain.
Conclusions: The results of Mitrofanoff surgery in spinal patients was comparable to the published literature. However a syndrome exists characterised by dysfunctional voiding, chronic pain, previous psychological disturbance and a dependence on the medical community. These patients are rarely satisfied with the outcome of surgery, and should be discouraged from having operations.

P39

Development of a minimally invasive investigation algorithm for the urological management of patients with spina bifida

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Great Ormond Street Hospital, London, UK

Introduction: Lower urinary tract dysfunction in spina bifida is variable and can change over time. Our aims were 1) to identify clinical and radiological risk factors for upper tract deterioration and 2) to develop a minimally invasive investigation and management algorithm that minimises renal morbidity and addresses continence.
Patients and methods: The outcome of 38 patients (Group 1; born 2000–2002) with spina bifida was audited. Risk factors for upper tract deterioration were identified and an investigation algorithm developed. Invasive urodynamic assessment was performed where ≥ 2 risk factors were present. The new algorithm and the outcome were prospectively assessed in 37 children (Group 2; born 2003–2005).
Results: Median follow-up was 5.8 (group 1) and 2.3 years (group 2). Renal damage occurred in 7 / 38 patients in Group 1, requiring surgery. In Group 2, 2 / 37 patients developed renal scarring requiring surgery, 2 / 37 had pelvicalyceal dilatation managed by intermittent catherisation and Oxybutynin. Reflux, pelvicalyceal dilatation, UTI's and residual urine were risk factors for upper tract deterioration.
Conclusions: Invasive urodynamics are necessary only in those at risk of upper tract deterioration. This algorithm is minimally invasive with good renal outcome. Further follow-up is necessary to validate the protocol.

TABLE 1: for P37

Parameter	Pre-op *n* = 81	6 weeks *n* = 76	6 months *n* = 49	12 months *n* = 39	24 months *n* = 14
SUI symptoms	81 (100%)	3(4%)	1(2%)	0(0%)	1(7%)
ASFQ response rate	71(88%)	68(89%)	49(100%)	37(95%)	14(100%)
Scored	46	51	38	22	8
Domain:	No. of women with high probability of sexual dysfunction				
Desire	30(65%)	42(83%)	25(66%)	18(82%)	7(88%)
Arousal-sensation	36(78%)	48(94%)	27(71%)	19(86%)	7(88%)
Arousal-lubrication	29(63%)	45(88%)	32(84%)	19(86%)	7(88%)
Orgasm	22(48%)	40(78%)	24(63%)	15(68%)	6(75%)

Wednesday 20 June 1330–1500
Basic Science - Prostate
Chairmen: Hing Leung and David Neal

P40

The tumour–stroma distribution of degradome components in human prostate cancer

C.J. SHUKLA, C.J. PENNINGTON, A.C.P. RIDDICK, K.K. SETHIA, R.Y. BALL and D.R.W. EDWARDS
Norfolk and Norwich University Hospital NHS Trust and the University of East Anglia, Norwich, UK

Introduction: The heterogeneity of prostate cancer has limited the effective diagnosis, treatment and determination of prognosis in patients with prostate cancer. Laser capture microdissection (LCM) is effective at overcoming tissue heterogeneity for molecular analysis. Molecules, such as proteases, are potential markers in prostate cancer.
Methods: Fresh frozen prostate tissue samples were subjected to LCM using the Arcturus Pixcell IIE. Unamplified RNA from epithelial and stromal cells were subjected to quantitative RT-PCR for protease expression. Using receiver-operator characteristics (ROC), biologically inter-related gene combinations were analysed for diagnostic power in prostate cancer.
Results: Hepsin and MMP26 were elevated, whereas maspin and TIMP4 were down-regulated in malignant prostatic epithelium ($P < 0.05$). PIN samples were intermediate in expression to benign and cancerous tissues. MMP2 and uPAR were elevated in higher grade malignant stroma ($P < 0.05$). Using ROC analysis, a two gene ratio using MMP26 and TIMP4 was identified as being highly diagnostic of prostate cancer.
Conclusions: Using LCM and RT-PCR, deregulated proteases and their cellular localisation have been identified, as well as inter-related genes which, in combination, are highly diagnostic of prostate cancer. A replication of these findings in the serum of patients with prostate cancer is ongoing to evaluate them as markers in prostate cancer.

P41

Malondialdehyde-deoxyguanosine (M_1G) is a biomarker of prostate cancer chemoprevention by tea polyphenols in the TRAMP mouse

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University of Leicester, UK

Introduction: Catechins from green tea and theaflavins from black tea are polyphenols that inhibit prostate carcinogenesis in the transgenic TRAMP mouse. Identification of biomarkers that correlate with inhibition of carcinogenesis will allow translation of such chemoprevention studies into human trials. M_1G is an oxidative DNA adduct that has been positively correlated with the presence of prostate and breast cancers in humans.
Methods: TRAMP mice were allocated into three groups, receiving water ($n = 11$), water containing 0.05% theaflavins ($n = 14$) or water containing 0.05% catechins ($n = 13$). Mice were sacrificed at 30 weeks of age, prostates dissected and DNA extracted. The concentration of M_1G in DNA was determined by immunoslot blot.
Results: Mean M_1G concentrations were 6.34 fmol/μg, 5.16 fmol/μg ($P = 0.4$) and 4.07 fmol/μg ($P = 0.045$, Student's t-test) in the control, theaflavins and catechins groups respectively. M_1G concentration and prostate tumour weight were positively correlated (Spearman's Rank Correlation test, $P < 0.001$).
Discussion: M_1G is positively correlated with prostate cancer progression in TRAMP mice. This biomarker is amenable to change using oral catechins, previously shown to inhibit TRAMP prostate carcinogenesis. M_1G in prostate DNA is, therefore, a biomarker of prostate cancer chemoprevention that could be applied to early human trials.

P42

Synergistic enhancement of prostate cancer cell death by combination therapy of adenovirus and chemotherapy

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Introduction: Oncolytic adenoviruses represent a promising new therapeutic platform for cancer. We assessed effects of combination treatment, in-vivo and in-vitro, with several replication selective adenoviral mutants and the chemotherapy drugs -mitoxantrone and docetaxel in the Human LNCAP, PC3, DU145, 22RV, and Murine TRAMPC and RM prostate cancer cell lines.
Methods: Sensitivity to treatment in all the cell lines was determined by dose killing 50% of cells (Effective Dose 50, EC50) with single agents and combinations using MTS assay from which Combination Index was obtained using the isobologram method of Steel and Peckham.
Results: Combination treatment with virus and mitoxantrone or docetaxel resulted in a supra-additive increase of cell death in all prostate cancer cell lines. Adenovirus sensitized cells to the effect of mitoxantrone and docetaxel resulting in decrease of EC50 values of mitoxantrone by up to 11 000 times and of docetaxel by up to 360 times. The synergistic effects on cell death were also demonstrated in-vivo in nude mice with LNCAP and PC3 tumour xenografts and in mice with intact immune system (TRAMPC xenografts).
Conclusions: Combination therapies with replication selective adenoviral mutants and cytotoxic drugs holds promise for future novel prostate cancer therapies.

P43

The fibroblast growth factor receptor inhibitor PD0173074 as a potential novel anti-prostate cancer therapy

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Introduction: Fibroblast growth factor-2 (FGF-2) is a polypeptide growth factor that is implicated in prostate cancer progression and chemoresistance. FGF-2 signals via the tyrosine kinase receptor (TKR) FGFR-1. Therefore, the development of a novel TKR inhibitor to FGFR-1 (PD0173074) may be of interest as a potential therapy.
Materials and methods: *In vitro* work: PC3 and LNCaP cell lines were maintained in RPMI and passaged using standard cell culture techniques. Cells were exposed to variable concentrations of PD0173074 and, after 96 h, counted using trypan blue exclusion. Cell cycle changes were assessed using propidium iodide staining and flow cytometry. *In vivo* work: PC3 cells were implanted into the hindquarter of 20 nude male mice to form a mouse xenograft model of prostate cancer.
Results: PD0173074 induces a dose-dependent decrease of cell numbers (PC3 and LNCaP cells) (IC50 < 10 nM). This potent effect correlates with the appearance of a pre-G1 peak in cell cycle analysis and the occurrence of a PARP cleavage product on Western blotting. In vivo data shows a statistically significant reduction in tumour volume up to 20%.
Conclusion: In vitro and in vivo work demonstrates that PD0173074 may be a useful therapeutic agent. This effect appears to take place by classical apoptosis.

P44

Stain-free biochemical imaging of the prostate utilising FTIR microspectroscopy: a proof of concept study

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Introduction: Histopathological analysis of prostate tissue is time consuming, subjective and offers limited statistical confidence due to inherent operator variability. Fourier Transform Infrared (FTIR) microspectroscopy is a stain free, objective, imaging technique that can biochemically map prostate tissue in addition to discriminating between significant pathologies. This study aims to evaluate FTIR micro-spectroscopy's potential to become a pathological classification tool.
Methods: FTIR microspectroscopy was performed on selected 10 micron, wax embedded, transverse prostate sections, obtained from five radical prostatectomy specimens. Spectral and biochemical maps were constructed and multivariate analysis applied to the dataset. The maps were directly correlated with the pathological interpretation of the same sections after hematoxylin and eosin staining.
Results: FTIR imaging was able to reproducibly discriminate between prostate cancer, benign prostatic hyperplasia (BPH), prostatic calculi, prostatic intraepithelial neoplasia (PIN) and the embedding medium with sensitivities and specificities of greater than 90%. Biochemical information about the composition of the aforementioned pathologies was elicited and demonstrated visually using cluster analysis.
Conclusion: FTIR demonstrates significant promise as a future classification tool for prostate pathologies. The additional objective biochemical information that FTIR delivers may enable better understanding and prediction of individual patient's prostate cancer biological activity.

P45

The complete cytokeratin phenotype of the human prostate and changes associated with malignant disease

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Introduction: Cytokeratins (CKs) maintain intracellular structure. Twenty CKs are identified and expressed in specific combinations in epithelia. The aim of this study was to determine the complete CK phenotype of human prostatic cells.
Methods: Immunohistochemical staining and western blotting was performed for CKs1-20 on samples obtained at operation and human cell lines.
Results: CK8 and 18 were frequently (n = 10/12), and CK5 and 14 consistently (n = 12/12) expressed in basal cells. Positive staining was observed for CK3 and 12 in stromal tissue (n = 12/12 and n = 6/6 respectively) and stromal cell line, PRsC (n = 3/3). Reduction in CK staining was noted for CKs 5, 6, 13, 14, 17 in malignancy. Differences in CKs 7, 12, 19 were observed between androgen-dependent (LNCaP) and -independent (PC-3) malignant cell lines. Western blotting confirmed the expression of CKs 1–3, 5, 8, 10–14, 17–19.
Conclusions: This study provides the first full characterisation of CKs in benign and malignant prostate. Basal cells are identified by CKs 5 and 14, but also CKs 8 and 18, traditionally considered to be luminal specific. Change in CK profile occurs with development and progression of malignancy, making CKs potential indicators of disease progression. CKs 3 and 12 are potential markers for prostatic stroma.

P46

Real-time PCR (rtPCR) validation of the differential microarray profile of the prostate epithelial cell side population

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Introduction: Prostate stem cell isolation and analysis is hampered by genetic changes occurring during in vitro cellular expansion. We have, for the first time, isolated a stem cell enriched primary prostate epithelial cell (EPC) side-population (SP) and undertaken genetic analysis of the unexpanded SP.
Materials and methods: CD45-ve / CD133+ve EPCs SP and non-SP (NSP) cells were isolated from consenting patients undergoing TURP for histologically confirmed BPH. Small cell number microarrays (<500 cells) were conducted on paired SP and NSP samples (n = 5). Microarray data was validated by rtPCR using genes displaying a significant 2 fold difference.
Results: Microarray data was generated from three paired samples and mean fold changes between the SP and NSP were calculated. Chip data was validated by rtPCR, confirming consistency of the affymetrix array. Significant differential regulation of specific gene populations was demonstrated in the stem enriched SP by comparison with the NSP.

Conclusion: We have shown for the first time that it is feasible to conduct microarray analysis of a primary unexpanded stem cell enriched prostate SP, utilising small cell numbers, to generate consistent and statistically significant data. This technique enables the study of small cell number unexpanded stem populations in prostate and other cancers.

P47

Serum bone markers to predict disease progression in prostate cancer – a comparative performance analysis

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Introduction: Several bone markers have been promoted as early predictors of metastasis in prostate cancer. In this study, we analysed a panel of six contemporary serum bone markers (PINP, Osteocalcin, CTX, bAP, TRAP and OPG) in a cohort of serial samples from 389 men with prostate cancer and 45 with BPH.
Methods: Serum measurements were performed using commercially available assay kits. Serum testosterone levels were also measured for each sample. 208 of the 389 patients underwent re-sampling each time they attended the urology department over a 3½ year follow-up period.
Results: OPG performed by far the strongest of all the markers, with significantly elevated levels in bone metastasis cases. Biochemical relapse cases were associated with higher serum OPG levels than patients currently controlled with hormone manipulation therapy. Of the patients with locally advanced disease that were untreated or had biochemical control on hormone manipulation therapy at baseline, those that subsequently developed biochemical relapse exhibited significantly higher baseline serum OPG levels than those that remained controlled despite no difference in baseline PSA levels.
Conclusions: Elevated serum OPG levels before or during treatment are associated with propensity to develop biochemical relapse, and appear to forecast biochemical failure earlier than PSA.

P48

Epigallocatechin-3-gallate and lycopene have a more potent effect on prostate cancer cells than casodex in the presence of dihydrotestosterone

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Introduction: Dietary factors play a big part in the development and progression of Prostate Cancer. Epigallocatechin-3-gallate (EGCG) and Lycopene are two factors thought to be protective of prostate cancer. We studied the effect of casodex, EGCG and Lycopene on androgen-sensitive prostate cancer cells.
Methods: Using the androgen-sensitive cell line LNCaP (representing early stage prostate cancer) the cells were dosed with Dihydrotestosterone (DHT). They were then dosed with 1, 5 and 10 uM of casodex, 10, 20 and 30 uM of EGCG or 1, 2.5 and 10 uM of Lycopene. Tritiated Thymidine incorporation was used to assess proliferation.
Results: DHT caused an expected increase in LNCaP cell proliferation. Casodex reduced proliferation on its own but lost this effect when added with DHT. Indeed it increased proliferation slightly at some doses. In contrast, EGCG and Lycopene both markedly reduced the growth effect of DHT on the cells.
Conclusions: Casodex, EGCG and Lycopene are potent inhibitors of growth in LNCaP prostate cancer cells. In the presence of DHT however, casodex loses its protective effects unlike Lycopene and EGCG. The results imply that casodex may be more effective in treating early, androgen-sensitive prostate cancer in the absence of DHT. EGCG and Lycopene however, remain much more potent antiproliferative factors.

P49

Expression of gonadotrophin releasing hormone type II in prostate cancer is androgen regulated

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Introduction: Analogues of Gonadotrophin Releasing Hormone are known to exert a direct anti-tumourigenic effect on prostate cancer cells. Type II GnRH has been shown to exert potent extra-pituitary anti-proliferative effects. In this study we investigated the possible role of GnRH II in prostate cancer and potential androgenic regulation.
Methods: qPCR, immunofluorescence and TMA immunohistochemistry were employed to examine GnRH II expression in cell lines, biopsy samples and CWR22 xenograft mouse model. Androgen stimulation experiments were performed in prostate cancer cells lines and proliferation and migration examined. CHIP assays were used to identify androgen response elements within the GnRH II promoter.
Results: GnRH II expression was detected in LNCaP cells with decreased expression in DU145, PC3 and virtually no expression in PC3M cells. In the CWR22 model, GnRH II was decreased in castrated animals compared to non castrasted animals. Addition of the R1881 to LnCAP cells resulted in increased GnRH II and PSA expression. A putative androgen response element was identified in the GnRH II promoter.
Conclusions: We show for the first time that GnRH II is expressed in prostate cancer cells and is regulated by androgens. This induction requires AR which binds to a cognate response element in the gene.

Wednesday 20 June 1330–1430
Upper Tract and Imaging
Chairmen: Sam McClinton and Paul Taylor

P50

Antegrade vs retrograde stenting in laparoscopic pyeloplasty

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Introduction: The aim of this retrospective study was to compare operative times between retrograde ureteric stenting (RS) and antegrade stenting (AS) as part of laparoscopic pyeloplasty (LP).
Methods: LP has been carried out by two surgeons in our department since 1999. In order to discount a learning curve we analysed cases from February 2002 to June 2006. Operative times were obtained from the 'Swift-Op' theatre database and details of surgery were obtained from the case notes.
Results: There were a total of 95 patients.

TABLE for p50

1	2	3	4	5
Parameter	AS	RS	Stent *in situ*	Retrograde pyelogram then AS
No. of patients	17	50	20	8
Mean op. time (min)	181	257	204	194

The operative time in antegrade stented patients was significantly less than the retrograde stented patients ($P = 0.00001$, Two sampled t-test), which was observed for both operators. The difference between the means for the two groups was 76 min. Two patients in each group had stents which were incorrectly positioned. One patient in the AS group required intraoperative cystoscopy in order to place the stent.
Conclusions: AS is faster even when the time to reposition the patients is taken into account (comparing column 3 vs. 5). This finding may be explained by easier dissection of the distended renal pelvis and/or because suturing of the posterior wall may be easier without a stent in the operative field. As this is a retrospective study, factors such a case selection and surgeon bias could not be optimised.

P51

Survival after nephrostomy for malignant renal obstruction

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Introduction: Appropriate management of upper urinary tract obstruction in advanced malignancy poses a significant challenge. Whilst nephrostomy placement may improve renal function, data are limited on overall survival and published series tend to have limited numbers.
Methods: We retrospectively analysed all nephrostomies placed for malignant upper urinary tract obstruction at our institution over three years. Demographic data, pre and post nephrostomy renal function, antegrade stenting, histology, PSA levels and overall survival were recorded.
Results: Of 123 nephrostomies (median age 74 years, range 41–85), 67 were placed for malignant disease. Of these 18 had bladder cancer, 14 prostatic adenocarcinoma, and 35 had non-urological malignancies (cervical, ovarian and lymphoma). The mean pre-nephrostomy creatinine was 475 μmol/l, mean post-nephrostomy creatinine was 210 μmol/l, and mean PSA for malignant prostatic obstruction was 750 mmol/l. Median survival was 133, 75 and 416 days after nephrostomies for bladder, prostate and non-urological malignancies respectively.
Conclusions: There is a significant reduction in serum creatinine following nephrostomy placement. Median survival for malignant urinary tract obstruction is limited to a few months, particularly those with prostate cancer ($P < 0.05$). Patients and physicians should be aware of the likely survival and nephrostomies should only be offered to those with a high performance status.

P52

An audit of long term follow-up of antegrade ureteric stenting as a procedure of choice for the management of obstructive uropathy in pelvic malignancies

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Sunderland Royal Hospital, UK

Objectives: Cancer of the pelvic organs often causes upper urinary tract obstruction. Considering the advanced state of malignancy and poor health status of these patients due to significant uropathy, antegrade ureteric stenting is one of the commonly performed procedures. The outcome of this procedure has been evaluated.
Patients and methods: During the period between 1994 and 2006, 145 patients underwent standard percutaneous nephrostomy (PCN) and subsequently had antegrade stenting, either at the same time as nephrostomy or at a later date. Data was collected retrospectively.
Results: A total of 145 patients had 241 stents inserted. 37 (25.5%) out of 145 patients had simultaneous PCN and antegrade stenting, 108 (74.4%) had delayed and 38 (26.2%) had unilateral stenting. Primary malignancy included: prostate 49 (33.8%) patients, bladder 44 (30.3%), cervical/uterine 24 (16.5%), colorectal 16 (11%), ovarian 7 (4.8%), upper GI 2 (1.4%) and breast 3 (2%). Mean survival following the procedure for various malignancies was: bladder 364.9 days, prostate 347.7, cervical/uterine 358.3, colorectal 181.3, ovarian 122.5, upper GI 80.5 and breast 246 days.
Conclusion: In general bladder, prostate and cervical/uterine cancer patients had better survival. Antegrade stenting is a procedure performed under local anesthesia and is minimally invasive. It is a more acceptable procedure from both the patients and carers view point. Patients are generally more comfortable and mobile and the procedures should be offered as a major choice in the given situation.

P53

One stage tubeless antegrade ureteric stenting: a safe and cost effective option

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Introduction: To assess outcome of primary one stage antegrade ureteric stenting and to compare its safety and efficacy with conventional two stage approach.
Material and methods: A total of 201 patients, predominantly men, were referred for percutaneous nephrostomy insertion for a wide range of indications over 30 months. 91/201 underwent antegrade ureteric stenting: 31 with primary one stage tubeless approach after applying exclusion criteria namely sepsis, haemorrhage, uncontrolled acute renal failure, and non availability of interventional radiologist, and 60 with a conventional staged approach with varying intervals between stages. Outcome measures such as requirements of analgesia/antibiotic, recovery of renal function, sepsis, haemorrhage and post-procedure hospital stay were compared between these two approaches.
Results: Patients undergoing one stage primary tubeless stenting had a substantially reduced hospital stay and requirement for analgesia/antibiotic as well as minimal complication rate with a combined clinical and technical success rate of >90%. All the single stage approach patients tolerated the procedure very well except one.
Conclusion: Primary one stage tubeless ureteric stenting for benign or malignant ureteric obstruction is a safe and cost effective option in selected cases subject to interventionist support from uro-radiology.

P54

Ureteric obstruction following renal transplantion: open surgical treatment is associated with better outcome than minimally invasive techniques

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Introduction: We evaluated the success of minimally invasive and open surgical intervention for ureteric obstruction following renal transplantation.
Patients and methods: A retrospective analysis of transplant recipients, over a 14 year period, who developed ureteric obstruction was performed. Graft function and need for re-treatment were used to analyse the success of different interventional techniques.
Results: Of 696 transplant recipients, 27 developed ureteric obstruction (3.8%). Early presentation was in 23 patients (mean time 5.0+/-1.3 months), with the remainder presenting late (126+/-33 months). Mean creatinine at time requiring intervention was 246 umol/l (range 125-825). 15 patients underwent ureteroplasty as primary intervention, of which five were considered successful (mean follow-up 27.0+/-6.7 months). The other 10 developed recurrent stenosis, requiring further treatment (four surgical re-implantation; six repeated radiological intervention). Of these, four patients are now dialysis dependent. 12 patients had primary surgical re-implantation, which was associated with significantly improved early function (creatinine 191.0+/-23). Nine had excellent long-term graft function (creatinine 201+/-34 at mean follow-up of 64.0+/-10 months), three required further intervention and one became dialysis dependent.
Conclusions: Following renal transplantation, primary surgical intervention for ureteric stenosis seems to offer better long-term graft survival than minimally invasive treatment.

P55

The prevalence of renal impairment following nephrectomy

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Introduction: Chronic Kidney Disease stages 3–5 (estimated glomerular filtration rate, eGFR < 60 ml/min) are associated with greatly increased cardiovascular and stroke risk and close monitoring and correction of risk factors is recommended. We studied the eGFR in patients following unilateral nephrectomy.
Patients and methods: eGFR trends were calculated using the MDRD formula on 342 consecutive patients undergoing unilateral nephrectomy/nehroureterectomy for all reasons between 1999 and 2005 (aged 18–90, pre-operative dialysis excluded).
Results: Mean eGFR was 67.3 ml/min pre-operatively, 57.3 ml/min immediately post-operatively and 53.3 ml/min at mean follow up of 30 months. The proportions of patients with Chronic Kidney Disease stages 3–5 were 34% pre-operatively, 59% post-operatively and 68% at 30 months. Most had normal or only mildly raised creatinine (78% <150 μmol/l). 85% aged >60 had at least stage 3 Chronic Kidney Disease at last follow up. 22% of patients had >20% drop in eGFR after discharge from hospital.
Conclusion: Serum creatinine estimation often gives false reassurance following nephrectomy. Most patients have at least stage 3 Chronic Kidney Disease on discharge from hospital and more will develop this during follow up. Long term eGFR monitoring should be undertaken following nephrectomy to identify patients at high risk of cardiovascular disease and institute appropriate preventative measures.

P56

Transureteric ultrasonography can be a useful radiological technique in the investigation of ureteric stricture

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Introduction: Ureteric strictures may be caused by either intrinsic ureteric lesions within the lumen or wall, or from extrinsic sources of compression.
Methods: Over a 5-year period 19 patients underwent transureteric ultrasonography (TUU) at our institution at the time of retrograde ureteropyelography. Patients were referred for this novel investigation for further characterization of ureteral stricture or uretero-pelvic junction (UPJ) obstruction which had been suspected on previous imaging.
Results: A definitive cause for the ureteric stricture or UPJ obstruction was identified in 14/19 (74%) patients: extrinsic lymphadenopathy [4/14 (29%)], crossing vessels at the UPJ [3/14 (21%)], ureteric tumour [2/14 (14%)], calculi embedded within the ureteric mucosa [2/14 (14%)], an endometriotic cyst [1/14 (7%)], retroperitoneal malignant infiltration [1/14 (7%)], and an iliac aneurysm causing generalized ureteritis [1/14 (7%)].
Conclusions: TUU was effective in the further evaluation of ureteral stricture and likely UPJ obstruction suspected on

intravenous urography and/ or retrograde pyeloureterography. In most cases (74%) significant causes were identified, and the technique also accurately delineated crossing vessel anatomy in UPJ obstruction. We therefore recommend TUU in the assessment of ureteral stricture of uncertain aetiology, as well as in the further evaluation of crossing vessel anatomy prior to endopyelotomy for UPJ obstruction.

P57

An abdominal phantom for the evaluation of three-dimensional ultrasound and guided interventional techniques in the kidney

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Objective: The objective of our study was to create an anthropomorphic abdominal phantom to enable validation of three-dimensional ultrasound renal scanning and training in percutaneous punctures.
Materials and methods: The phantom was created using materials such as agar and latex. For validation the phantom was scanned with 2-D and 3-D ultrasound and the calyceal diameters and length of the PC system measured. These parameters were then compared to the already known dimensions of the latex PC system.
Results: Graphical comparison of differences between measurements and the known dimensions of the latex PC system showed overall 3D measurements to be closer. Statistically there was no difference in the variability of either 2D or 3D from the known measurements (95% CI of 2D variability: -0.17 cm to +0.17 cm, 95% CI of 3D variability: -0.15 to +0.15, Fisher's *P* value: 0.932).
Conclusions: This study shows that 3D scans are of equivalent if not better quality compared to 2D scans while at the same time providing information in more than one plane. Scans also proved the phantom to be of sufficiently high quality to closely mimic human tissue appearance. The applicability of the model and 3D US for the evaluation of renal intervention will be discussed.

P58

Multidetector CT Urography (MDCTU) for diagnosing urothelial tumour of the upper urinary tract

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Introduction: This study evaluated multidetector computed tomography urography (MDCTU) for diagnosing upper urinary tract (UUT) urothelial tumour by comparison with retrograde ureteropyelography (RP).
Patients and materials: MDCTU and RP were performed on a selected series of adult patients presenting with haematuria. Entry criteria were based on IVU findings and were chosen to ensure high prevalence for UUT urothelial tumour. MDCTU and RP studies were scored for presence and absence of UUT urothelial tumour by two radiologists, retrospectively and independently. Demographic and clinical information was withheld. Gold standards were histopathology and clinical follow-up.
Results: MDCTU and RP were undertaken in 106 patients over a 24-month period. RP was attempted in 151/212 UUT. Corresponding MDCTU for each UUT was reviewed. MDCTU was true positive (TP) for urothelial tumour in 31, true negative (TN) in 111, false positive (FP) in 8 and false negative (FN) in 1 UUT; sensitivity = 0.97; specificity = 0.93; PPV = 0.79; NPV = 0.99. RP was technically successful and diagnostic in 96% UUT (*n* = 143/151). For diagnosing urothelial tumour, RP was TP in 26, TN in 112, FP in 4 and FN in 1 UUT; sensitivity = 0.97; specificity = 0.93; PPV = 0.79; NPV = 0.99.
Conclusion: This study validates quantitatively the use of MDCTU for the diagnosis of UUT urothelial tumour.

Wednesday 20 June 1430–1530
Laparoscopy/Robotics
Chairmen: Frank Keeley and Ingolf Tuerk

P59

Laparoscopic Partial Nephrectomy (LPN): 50 consecutive cases from a UK centre

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Introduction: The increased detection of small renal lesions has resulted in increased interest in minimally invasive nephron sparing surgery. We present our experience with LPN and discuss how our technique has evolved with experience.
Patients and methods: Our standard approach utilised three 12 mm ports into a retroperitoneal space created with a balloon dilator. A ureteric catheter allowed assessment of collecting system breach and both renal artery and vein were clamped. With increasing experience the ureteric catheter step was omitted and the renal vein was not clamped. Biopsies were taken from the resection site and subject to frozen section whilst the kidney was reconstructed with sutures over surgical bolsters. Follow up was with serial renal imaging.
Results: One conservatively treated haematoma represented the only morbidity and no patients required conversion or transfusion. Four patients underwent nephrectomy, three for positive frozen section and one for radiological recurrence.

TABLE for p59

	Range	Mean
Age (years)	30–76	55
Operating time (mins)	90–240	150
Cross clamp time (mins)	12–39	25
Blood loss (mls)	50–750	150
Hospital stay (days)	1–6	2.7

Conclusion: LPN is safe and effective showing the benefits generally associated with laparoscopic surgery. With increasing experience the technique can be safely simplified, further reducing operating times.

P60

Laparoscopic Partial Nephrectomy (LPN) – initial experience of a BUF preceptor

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Introduction: LPN has been adopted more slowly than laparoscopic total nephrectomy because it is regarded as more technically challenging. We present the learning curve of a surgeon introducing LPN after a BUF preceptorship at the Cleveland Clinic and compare outcomes with open partial nephrectomy over the same time period.
Patients: From 2003, 28 patients fulfilled criteria for partial nephrectomy of which 14 had a LPN. Relative contraindications for LPN were tumours that were central, endophytic or >4 cm and patients with absolute indications for partial nephrectomy.
Results: Mean age 56 years LPN, 59 years open. Median tumour size 2.3 (1.5–4) cm LPN, 3.8 (1.5–6) cm open. Polar location mass LPN 64%, open 50%. In the laparoscopic group 71% of renal masses were malignant and 64% incidental findings. Median anaesthetic time 237 (180–335) min LPN, 185 (110–220) min open. Median warm ischaemic time 42 min LPN, 26 min open. Preoperative eGFR 71 ml/min LPN, 64 ml/min open. Discharge eGFR 65 ml/min LPN, 58 ml/min open. Postoperative stay median 4 (3–23) days LPN, 7 (4–32) days open. Two conversions for ureteric injury and inadequate hilar clamping. No tumour recurrence to date.
Conclusion: In select patients, initial experience with LPN compares favourably to open surgery with regard to hospital stay, margin status and post-operative kidney function.

P61

A novel laparoscopically-deployed device for renal hypothermia: cooling efficacy in a porcine model

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Introduction: Localised renal hypothermia may be required to provide ischaemic protection in laparoscopic urological procedures. We report initial porcine model testing of a novel laparoscopically-deployed renal cooling device prototype.
Materials and methods: Ten pigs were anaesthetised and laparoscopic renal mobilisation was undertaken. Two temperature probes were placed into the kidney at a depth of 1.5 cm. The device consisted of a double-layered bag, which envelops the organ, secured by a drawstring at the pedicle. Cold fluid was then circulated between the layers using a pump to effect topical renal cooling. With the device in place, the renal artery was clamped and the cooling circuit activated. Core temperature data was recorded continuously during the course of the study.
Results: At 30 min the mean core temperature was 10.96 +/-7.2 ^{o}C. The mean time taken to cool to 15 ^{o}C was 19.23 +/-7.2 min. The best performance achieved temperatures of 15.0 and 5.0 ^{o}C after 11 and 30 min respectively.
Conclusions: Our prototype device is capable of rapid core renal cooling. In addition it involves no direct contact with ice/coolant, avoids the potential complications of intravascular / ureteral cooling, and is easy to deploy and remove through a laparoscopic port.

P62

Robot-assisted radical cystectomy for bladder cancer and 2 year follow-up

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Introduction: Although open radical cystectomy (ORC) is regarded as the gold standard for muscle invasive bladder cancer it has significant morbidity and prolonged recovery. Robot-assisted radical cystectomy (RRC) is in evolution.
Patients and methods: We report the prospective outcomes of our technique of RRC in 16 patients (12 men, 4 women; age 68 years) using the da Vinci system with up to 30 month follow-up. 12 patients had ileal conduits, two Studer pouches and two were found to be inoperable on laparoscopy.
Results: All procedures were completed without conversion. Median operating time was 330 min, robot docking time 6 min, blood loss 150 ml. Bowel function returned on day 1 except in the pouches, hospital stay was 10.5 days and time to full recovery 4 weeks. Patient satisfaction was very high (30 out of 32 on a client satisfaction-8 survey). Mental domain of the SF-8 scores improved significantly post-operatively. Early complications were 18% and delayed functional complications 12%. Margins and lymph nodes (16) were all negative. Disease free and overall survivals were 100% in the medium term.
Conclusions: RRC is minimally morbid with excellent early oncological and functional outcomes.

P63

A comparative study of 100 Robot Assisted Laparoscopic Prostatectomy (RALP) versus 100 open Retropubic Prostatectomy (RP)

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Introduction: RALP is a common procedure in the US with >35 000 cases performed in 2006. However, there are no definitive data to show advantages over open or LP. We report the initial learning experience of 100 RALP and perform a comparative analysis versus 100 open cases.
Patients and methods: A total of 100 RALP's were performed at a single institute and prospective data collected including operative time, blood loss, complications, continence and surgical margins. A similar cohort of 100 open retropubic cases (same primary surgeon) were age and PSA matched with outcomes compared.
Results: The learning curve for RALP in terms of total operative time is considerable (mean 1st 10 cases - 346 min, last 10 cases - 205 min). An improvement in blood loss is noted (1st 10- 862 mls, last 10- 271 mls) with a mean in-patient stay of 3-days (versus 5 days, open). While the incidence of positive margins appears to be broadly similar between the two techniques, there is a decrease in intraprostatic margins with experience. RALP appears to offer earlier return of erectile function as measured by patient questionnaires.
Conclusion: RALP has a significant learning curve, but may offer some patient benefits with decreased blood loss, shorter hospital stay and improved erectile function.

P64

The learning curve for robotic prostatectomy in a UK healthcare setting

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Introduction: We describe the learning curve experience of the first 100 robot-assisted laparoscopic radical prostatectomies performed at our institution.
Method: Data was collected prospectively, including patient and disease demographics,

surgical set-up times, statistics relating to the learning curve, surgical complications and specimen pathological data.
Results: The organ-confined specimen rate was 76%, median total operative time of 317 min and a median blood loss of 600 mls. There was a significant improvement in total operative time, from 432 min for the first 10 cases to 300 min for the last 10 ($r^2 = 0.41$, $P < 0.0001$), console time ($r^2 = 0.39$, $P = 0.0001$) and robot set-up time ($r^2 = 0.24$, $P < 0.0001$). A robot set-up time of 8.5 min was swiftly reached. Our data suggests that there was a learning curve plateau after 38 of 100 cases. Transfusion rates were low (7.5%). 25% of patients experienced minor or moderate complications.
Conclusions: Robotic prostatectomy is feasible and safe. The learning curve plateau with respect to operative times is consistent with other reported series. Potential differences in operative parameters between this technique and conventional laparoscopic and open approaches need to be definitively assessed in a randomised controlled trial setting.

P65
Learning curve during robotic-assisted radical prostatectomy
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Introduction: Robotic-assisted radical prostatectomy (RARP) is rapidly becoming the surgical treatment of choice for localised prostate cancer in the USA. High rates of positive margins (up to 45%) have been reported during the 'learning curve' phase of both laparoscopic and robotic assisted radical prostatectomy, and margin positivity is a known risk factor for disease recurrence. We were keen to minimise positive margins during our introduction of RARP.
Patients and methods: We report on our first fifty cases of RARP. All surgery was performed by an experienced open surgeon assisted by a laparoscopic surgeon. The first five cases were mentored by two experienced robotic-trained surgeons and the subsequent thirty cases by an experienced laparoscopic radical prostatectomy surgeon. Using a prospective, ethically-approved database, we evaluated patient's PSA level, pre- and post-operative Gleason score, clinical and pathological stage, operative time, complications and hospital stay.
Results: Six (12%) patients had a positive margin (tumour on ink surface of specimen). Four of these were apical, and two were lateral. Operative time reduced significantly from 239 min to 185 min between the first and second twenty-five cases.
Conclusion: Our positive margin rates are comparable to reported experienced series. We attribute this to our close mentoring programme.

P66
A comparison of post operative inguinal hernia rates after laparoscopic, retropubic and perineal radical prostatectomy
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Solent Department of Urology, St Mary's Hospital, Portsmouth; The Royal Surrey County Hospital, Guildford, UK

Introduction: The radical surgical approaches for prostate cancer are retropubic, perineal and laparoscopic prostatectomy. An increased risk of inguinal hernia (IH) with radical retropubic prostatectomy (RRP) of 2.5 to 21.3% is reported. The aim of this study is to compare postoperative IH rates with these approaches.
Methods: Patients from St Mary's Hospital, Portsmouth and the North Hampshire Hospital, Basingstoke were sent a postal questionnaire asking them which approach they had and whether they developed an IH postoperatively. 175 consecutive patients treated by 3 consultant urologists at SMH had either a RRP or radical perineal prostatectomy (RPP) in 1995–2004. 614 consecutive men had undergone laparoscopic radical prostatectomy (LRP) by a single urologist at the NHH in 2000–06.
Results: see Table 1.
There was no predominance of side. However, a difference in the number of bilateral hernias was observed, with 43.7% of herniae after RRP and 6% after LRP being bilateral.

TABLE for p66

Operation	No pts	No Hernia	Hernia rates
RPP	40	0	0%
RRP	107	16	14.9%
LRP	432	50	11.6%

Conclusion: Both RRP and LRP are associated with a post operative risk of IH greater than that of the general population (0.14 to 5%). RPP is not. This is likely to be due to the increased retraction forces seen in RRP but instead to the increased intraabdominal pressure secondary to the pneumoperitoneum in LRP.

Wednesday 20 June 1530–1630
Prostate Cancer
Chairmen: Roger Kirby and Peter Alken

P67
The risk of prostate cancer amongst black men in the United Kingdom
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Introduction: The objective of this study was to determine whether differences in prostate cancer risk exist between Black and White men living in the UK.
Patients and methods: A retrospective clinical cohort study was undertaken recruiting from multiple sources all cases of prostate cancer diagnosed over a five-year period and residing in defined areas of London and Bristol. The age standardised incidence rates and relative risk for all Black men, Black Caribbean and Black African versus White men were calculated using census data.
Results: Black men had higher age-adjusted rates of prostate cancer (166 per 100 000, 95% CI 151–180 per 100 000) than White men (56.4 per 100 000, 95% CI 53.3–59.5 per 100 000). The relative risks for all Black, Black Caribbean and Black African men were 3.1 (95% CI 2.8–3.4, $P < 0.0001$), 3.2 (95% CI 2.9–3.6, $P < 0.0001$) and 2.9 (95% CI 2.3–3.5, $P < 0.0001$) respectively. There was no strong evidence that the rates for Black Caribbean differed from Black African men.

Conclusions: Black men in the UK have substantially greater risk of developing prostate cancer compared to White men. The similar rates in Black Caribbean and Black African men suggest a common genetic aetiology.

P68

Long term follow-up of men with elevated PSA levels: a population-based study

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Introduction: In Northern Ireland during the mid-1990s, many men with moderately elevated PSA levels did not proceed to prostate biopsy. We followed these men to assess the natural history of a raised PSA without invasive investigation.
Patients and methods: From a regional PSA database, men who had their first PSA test between 1994 and 1997, were aged <60 years old and had a moderately elevated PSA [⩾ age-specific range (ASRR) and <10.0 ng/ml] were identified. Those with no diagnosis to explain their raised PSA were invited for repeat PSA testing.
Results: Of 1352 men included, data were available on 854 (63.2%) men. 102 (11.9%) died, with 7 (6.9%) from prostate cancer. Of the remainder (n = 752), 57 (7.8%) were diagnosed with prostate cancer and 165 (21.9%) benign disease before 2005. Of 530 men, repeat PSA data were available in 362 (68.3%). Mean PSA decreased from 4.92 ng/ml to 4.82 ng/ml (NS). 444 (68.0%) men showed a decrease in PSA with over 60% returning to normal (Table). Of 138 men with elevated repeat PSA, 83 (60.1%) proceeded to biopsy, with 30 (37.5%) diagnosed with prostate cancer.

TABLE for p68

Repeat PSA	Number of men (%)	Mean PSA change (ng/ml)	PSA velocity (ng/ml/year)
<ASRR	224 (61.9)	-2.81	-0.29
Decreased but ⩾ASRR	22 (6.1)	-1.04	-0.11
Increased	116 (32.0)	5.31	0.54
Total	362	-0.10	-0.01

Conclusion: In this population, a moderately elevated PSA returned to normal in the majority of men. This may have important implications for using a single PSA in population screening.

TABLE 1: for p69

PSAV cut-off (ng/ml/year)	Prostate cancer	No cancer	Sensitivity (%)	Specificity (%)	Positive predictive value (%)	Negative predictive value (%)
⩾ 0.0	639	14204	89.2	40.8	4.3	99.2
⩾ 0.1	614	8529	85.8	64.5	6.7	99.3
⩾ 0.2	591	6138	82.5	74.4	8.8	99.3
⩾ 0.3	575	4746	80.3	80.2	10.8	99.3
⩾ 0.4	563	3833	78.6	84.0	12.8	99.2
⩾ 0.5	545	3211	76.1	86.6	14.5	99.2
⩾ 0.6	520	2700	72.6	88.7	16.1	99.1
⩾ 0.7	500	2344	69.8	90.2	17.6	99.0
⩾ 0.75	492	2186	68.7	90.9	18.4	99.0
⩾ 0.8	482	2054	67.3	91.4	19.0	98.9
⩾ 0.9	457	1837	63.8	92.3	19.9	98.8
⩾ 1.0	436	1635	60.9	93.2	21.1	98.8

P69

The utility of PSA velocity thresholds in clinical practice: a population-based analysis

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Introduction: We investigated the ability of PSA velocity (PSAV) to predict prostate cancer compared to a single PSA of 4.0 ng/ml, and assessed the test characteristics of different PSAV cut-offs.
Patients and methods: From a regional PSA database, men with an initial PSA <10 ng/ml were identified. These were followed for a diagnosis of prostate cancer. Men with three or more PSA tests before diagnosis, carried out over ⩾18 months were included. PSAV was calculated using linear regression analysis.
Results: A total of 24 709 men were included, with 716 (2.9%) diagnosed with prostate cancer over the follow-up period. Mean (10.38 vs. 0.43 ng/ml) and median (1.47 vs. 0.03 ng/ml) PSAV were considerably higher in men with prostate cancer compared to no cancer (P < 0.001). PSAV had a higher sensitivity, specificity and area under the curve on ROC analysis compared to a single PSA. 36.3% of men diagnosed with cancer had an initial PSA <4.0 ng/ml and 10.8% had a PSAV <0.75 ng/ml/year. There was no PSAV cut-off which could reliably identify prostate cancer cases (Table).
Conclusion: PSAV may have additional benefit over a single PSA in identifying men with prostate cancer. There was no PSAV cut-off which reliably predicts prostate cancer rather a continuum of risk associated with PSAV level.

P70

The Charlson score should replace simple age and subjective comorbidity judgement in our prostate cancer MDT

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Introduction: Multidisciplinary teams (MDT) use precise prognostic factors to select treatments for patients with prostate cancer. However, comorbidity is judged subjectively. We assess the feasibility of the Charlson comorbidity score for the use in decision making of prostate cancer MDT's.
Methods: Data on comorbidity, prostatic malignancy and survival up to 10 years was collected for patients diagnosed with localised prostate cancer between 1993 and 1995. The prognostic accuracy of the Charlson score was assessed. In a second cohort the incidence of operation related complications of patients undergoing radical prostatectomy was correlated to their Charlson score.
Results: Thirty-seven of 1043 patients had localised prostate cancer. Using Cox regression we found the Charlson score to be a significant predictor of survival (P = 0.005). In patients undergoing radical prostatectomy the Charlson score is inversely correlated to operative complications (P = 0.0001).

Conclusions: The Charlson score reliably predicts 10 year survival of men undergoing radical treatment for prostate cancer. It may also predict the incidence of complications after radical prostatectomy suggesting caution in patients with a Charlson score <0.65. The Charlson score is easy to calculate and therefore we propose its use by MDTs as an adjunct when considering treatment of men with localised prostate cancer.

P71

Pre operative prostate magnetic resonance imaging at 3.0 Tesla, hope or hype!

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Introduction: The role of MRI for prostate cancer staging has been revisited since the recent introduction of high magnetic field strength (3.0 Tesla) MRI scanners. Higher signal intensity increases spatial and temporal resolution of the MR measurements, compared with 1.5 Tesla. This technical advance improves the detection rate for extracapsular extension (ECE) and seminal vesicles involvement (SVI). This study aims to evaluate the 3.0T MRI findings in comparison with radical prostatectomy (RP) histopathological data.
Methods: A total of 52 patients underwent 3.0T MRI with dynamic contrast-enhanced imaging (DCE) before undergoing RP. Prostate capsule integrity was further assessed using endo-rectal coil. Prostate cancer staging accuracy was calculated using crosstabulation with the RP histopathologic results. Kappa's statistics was used to measure the level of agreement.
Results: Ten patients had evidence of ECE histologically, of which one had SVI. The evaluation of 3.0T MRI revealed the following results:

TABLE for p71

	Accuracy	Sensitivity	Specificity	PPV	NPV	Agreement
Overall staging	88%	70%	92%	70%	92%	K = 0.62
ECE	92%	70%	97%	87%	93%	K = 0.73
SVI	96%	100%	96%	33%	100%	K = 0.07

Conclusion: Our result showed that 3.0T MRI revealed excellent anatomical details. Its high specificity, accuracy and sensitivity are reliable and it should play an important role in pre-op staging.

P72

Is it safe to perform nerve sparing surgery during radical prostatectomy on the side of the prostate negative for cancer on TRUS biopsy?

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Aim: To assess whether it is safe to preserve the neurovascular bundle on the side of the prostate negative for cancer on TRUS-guided biopsy.
Methods: From February 1996 to December 2005, 292 previously untreated patients with clinically localalised T1/T2 disease underwent radical retro-pubic prostatectomy. In this series, a retrospective analysis of the pathology database identified the following data: total percentage of cores positive for carcinoma, total percentage of side- specific cores positive, positive surgical margins (PSM) and extra-capsular extension (ECE).
Results: Of the 292 patients 67 (23%) had positive surgical margins and 77 (26%) had extra-capsular extension in general on the final resected specimen. Of those patients where prostate biopsy was negative for cancer on one side 21% had T3 disease with a PSM of 3% on that side.
Conclusions: Further work is needed to clarify the criteria under which nerve sparing surgery can be done safely, due to the significant risk of ECE even in the side negative for cancer on prostate biopsy. There are implications for the safety of targeted therapy using novel techniques.

P73

Frequency of zoledronic acid to prevent bone loss in osteoporotic patients requiring androgen-deprivation therapy for prostate cancer

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Introduction: Androgen deprivation is the mainstay of treatment for advanced prostate cancer (aCaP). However, many are already osteoporotic (Hussain et al. BJU Int, 92:690, 2003). LH-RH cause accelerated bone loss, whereas bicalutamide (Bic) preserves bone mineral density (BMD). We evaluated efficacy of zoledronic acid (ZA).
Methods: A total of 45 osteoporotics (T score ≤ –2.5) with aCaP were studied. Group 1(n = 17) received LH-RH, whereas Group 2(n = 28) Bic. All received 4 mg ZA three monthly for 1 year. BMD measured by dual energy X-ray absorptiometry at: A- 12 months prior to ZA, B- baseline, C- immediately following four infusions, D- 12 months after ZA. Bone markers BAP, PINP, CTX were measured three monthly.
Results: Group 1(LH-RH+ZA) showed a 4.9% decrease in BMD prior to ZA(A-B), a 1.6% increase following ZA(B-C) and a 3.0% decrease 12 months after ZA(B-D). Group 2(Bic+ZA) showed a 2.0% increase prior to ZA (A-B), a 7.8% increase following ZA(B-C) and a 1.9% decrease 12 months after ZA(B-D). All bone markers decreased($P < 0.001$) following ZA.
Conclusions: Three monthly ZA increases BMD in patients both on LH-RH and Bic, but to a greater extent in the latter. However, 12 months after the last infusion BMD falls, suggesting optimum frequency of administration lies between 3 and 12 months.

P74

Auricular acupuncture – an alternative treatment for vasomotor symptoms associated with LHRH analogue treatment

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Introduction: Vasomotor symptoms can affect quality of life in men receiving hormonal therapy for prostate cancer. This is due to alterations in thermoregulation induced by low levels of sex steroids. Similar symptoms in postmenopausal women have been successfully treated with acupuncture and this study evaluates it's role in men receiving LHRH analogues for carcinoma of the prostate.
Methods: Thirty-two consecutive patients [median (range) age 71 (52–86) years] consented to weekly auricular acupuncture for 10 weeks. The validated MYCAW questionnaire was used to assess concerns and well-being before and after treatment. This tool uses a six-point scale to assess symptom severity.
Results: All men completed the treatment with no adverse events recorded apart from transient exacerbation of symptoms in two men. All but one patient (97%) reported a decrease in the severity of symptoms. Mean symptom severity decreased from 5.1/6 to

2.3/6 (Student's *t*-test $P << 0.01$). The majority of men (66%) also reported a complete disappearance of their sleep disturbance.

Conclusions: Symptomatic improvement was achieved at levels comparable to pharmacotherapy and cost analysis reveals acupuncture to be a viable alternative. Larger randomised studies are necessary to fully evaluate auricular acupuncture against more conventional treatments and these are planned.

Thursday 21 June 1030–1130
Andrology
Chairmen: Ian Eardley and Krishna Sethia

P75

Audit of an approach to Post-Vasectomy Semen Analysis (PVSA) – reliability, cost-effectiveness and feasibility of application to a nurse-led service.

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Introduction: Insisting on two consecutive azoospermic PVSA creates difficulties and delays (Bradshaw HD Br J Surg 2001; 88:290). This audit aimed to evaluate a post-vasectomy protocol providing binary outcomes for nurse-led follow up. The cost-effectiveness of a single azoospermic PVSA and a fluorescent dye exclusion test (FDE) in persistent cases was evaluated.
Methods: A total of 839 consecutively vasectomised men January 2003 to March 2005. Evaluable data in 817. Standard PVSA (£5 per specimen) performed in all at 16 weeks and then 20 weeks if not azoospermic. FDE (£73) only in cases with persistent sperm at 6 months.
Results: A total of 157 (19%) were non-compliant. 605 (74%) were azoospermic (535 on first PVSA, 70 on second) costing £4070. 58 (7%) underwent FDE (cost £4234). Average cost per vasectomy of PVSA was £9.90. 10 (1.2%) failures were identified on FDE, (overall cost of PVSA per failure was £830). No pregnancies were identified at a median follow-up of 30 months.
Conclusion: A protocol of one PVSA showing azoospermia as a criterion for vasectomy success, with a more expensive viability test on a freshly ejaculated semen specimen in the minority with sperm persistence, aids decision making within a nurse-led service, minimises delay and allows a cost-effective approach to PVSA without compromising outcome.

P76

Fluorescent viability testing of human sperm – a novel technique to establish vasectomy success in early post-vasectomy recanalisation

U. SHARIFF, V. MADDIREDDY, S. GRADY, M. FLETCHER, A.A. PACEY and D.J. ROSARIO
Academic Urology Unit, Academic Unit of Reproductive and Developmental Medicine and Department of Urology, University of Sheffield and Sheffield Teaching Hospitals Trust, UK

Early recanalisation causes persistent sperm in 5–10% of men on initial post-vasectomy semen analysis (PVSA) creating uncertainty as to success of vasectomy. This study aimed to assess the feasibility of using fluorescent probes to assess sperm viability in such cases.
Patients and methods: A total of 839 consecutive vasectomised men January 2003 to March 2005. Complete data available in 817. Quantitation of sperm viability in centrifuged pellets of freshly ejaculated semen in men with persistent sperm on standard PVSA 6 months post-vasectomy.
Results: A total of 535 (65%) and 605 (74 %) were azoospermic at 16 and 20 weeks respectively (18% DNA for standard PVSA). Of 63 (8%) proceeding to viability testing, 10 (1.2%) had viable sperm and were offered repeat vasectomy, four were azoospermic, five DNA and 44 were provided special clearance on the basis of absence of viable sperm, regardless of count. The test was easy to perform and could distinguish as few as 100 viable sperm per ejaculate. No pregnancies have resulted in this cohort at a median follow-up of 30 months.
Conclusion: Fluorescent viability testing provides reliable differentiation of viable from non-viable sperm due to early post-vasectomy recanalisation and helps identify those at risk of future vasectomy failure.

P77

The genetic analysis of sperm in the subfertile male: a predictor of clinical outcome?

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Introduction: We present the outcome of a powered prospective study assessing whether genetic screening of spermatozoa can predict the outcome of intracytoplasmic sperm injection (ICSI) in subfertile men.
Patients and methods: The primary outcome of total sperm aneuploidy (SA; fluorescence *in situ* hybridization) and secondary outcome of sperm DNA fragmentation (sperm chromatin structure assay) were assessed in 56 men undergoing ICSI to achieve 80% power to reject the null hypothesis of identical aneuploidy rates in successful and failed cycles at the 5% significance level.
Results: As demonstrated in Table 1, total SA was significantly higher in the failed cycle group, thus allowing us to reject our null hypothesis. SA in failed cycles was higher for all of the individual chromosomes, with differences in sex chromosome and chromosome 18 reaching statistical significance. Receiver operator curve analysis demonstrated total SA and the composite figure X/Y/18 SA to yield the highest area under the curve. Regression analysis confirmed that the differences observed were not due to confounding effects of other cycle variables. There was no significant difference in DNA fragmentation between the two study groups.
Conclusion: This study confirms a role for sperm aneuploidy, but not DNA Fragmentation, in the work-up of male factor couples as a predictor of ICSI outcome.

TABLE for p77

	Clinical pregnancy	No clinical pregnancy	
	n = 28	*n* = 28	
Chromosome 13	0.40 ± 0.2	0.59 ± 0.68	
Chromosome 18	0.19 ± 0.2	0.55 ± 0.60*	*P* = 0.01
Chromosome 21	0.26 ± 0.2	0.41 ± 0.44	
Chromosomes X/Y	0.48 ± 0.3	0.93 ± 0.99*	*P* = 0.05
Aneuploidy 18 + X/Y	0.67 ± 0.4	1.48 ± 1.24*	*P* = 0.005
Total aneuploidy	1.18 ± 1.5	2.37 ± 1.92*	*P* = 0.01
DNA fragmentation index (%)	24.5 ± 17.1	22.3 ± 12.7	
High fragmentation	7.5 ± 7.2	5.6 ± 5.3	
Moderate fragmentation	16.4 ± 12.7	16.7 ± 10.5	

(all values are % mean ± standard deviation, *significant difference observed)

P78

Microdissection Testicular Exploration and Sperm Extraction (Micro-TESE) – sperm retrieval rates in Sertoli Cell Only

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Introduction: Azoospermic men with Sertoli Cell Only (SCO) on diagnostic testicular biopsy have a poor prognosis for future paternity, and often seek treatment with donor insemination or adoption. However, published data suggest sperm retrieval rates of up to 16–24% in this group. Here we review the sperm retrieval rate in a series of SCO who have all undergone microdissection TESE.
Patients: A retrospective review of all patients undergoing micro-TESE with SCO on testicular biopsy was conducted at a single institution from 2004 to 2006. Testicular volume, FSH levels, genetic profile (Karyotype and Y deletion analysis), sperm retrieval, histology and Johnsen scores were recorded.
Results: A total of 17 patients (mean age 28, range 27–35) were identified. Mean testicular length was 2.5 cm, 13/17 (76%) of patients had an elevated FSH (mean 14.7 IU) and mean Johnsen score was 1.66. No genetic anomalies were found. Successful sperm retrieval was achieved in 7/17 (41%) patients, though no significant difference in age, testicular length, FSH or Johnsen scores between the successful and unsuccessful groups was detected.
Conclusion: Microdissection-TESE can improve the sperm retrieval rate in SCO, and therefore may eliminate the need for a diagnostic biopsy in azoospermia.

P79

The isolated testis biopsy reborn

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Introduction: With the lack of donor sperm available as back up in case of a negative sperm retrieval during an IVF/ ICSI cycle, it is now imperative to identify factors that predict the outcome of a testicular sperm extraction (TeSE) in the azoospermic male.
Patients: A retrospective analysis of 237 azoospermic men (median age 37, range 19–66) undergoing TeSE at a single institution from 2001 to 2006 was undertaken. The predictive factors of testicular size, FSH, histology using the Johnsen score and sperm retrieval rates were recorded.
Results: A total of 49 patients had obstructive (OA) and 188 non-obstructive azoospermia (NOA), with sperm retrieval rates of 96% and 63% respectively. An elevated FSH was seen in 8% of OA and 53% of NOA and the mean testicular size was 3.5 cm (1–6). Sperm retrieval rates by histology were: Complete Spermatogenesis 97%, Hypospermatogenesis 95%, Maturation arrest 8.3% and Sertoli Cell only 4%. The positive and negative predictive values of sperm retrieval for testicular size, elevated FSH and histology were 83%/49%, 86%/51% and 95%/94% respectively.
Conclusion: As histological analysis is the most accurate predictor of a positive sperm retrieval, an isolated testicular biopsy should be performed as part of the pre-operative patient counselling.

P80

Management of unexpected positive margins in penile reconstructive surgery

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St George's Hospital, London, UK

Introduction: At our hospital we have been unable to do frozen section analysis on patients undergoing simultaneous sentinel node biopsy (SNBx). Despite aiming for 5 mm macroscopic margins, positive margins will inevitably occur. We examined the outcome of these patients.
Method: Histology reports and progress of patients with positive resection margins who underwent penile reconstructive surgery for squamous cell carcinoma were reviewed.
Results: Ninteen of 200 (9.5%) patients had positive resection margins. 17 did not have frozen section analysis (due to simultaneous SNBx in 11); two patients had false negative frozen sections. 14 of 19 have had no evidence of recurrent disease. Five patients have been closely observed with no signs of recurrence (3–26 months). Six underwent re-resection for early lesions (no malignancy in three). Six asymptomatic patients had additional tissue sent at the time of lymph node surgery (no evidence of malignancy in four). One patient received radiotherapy to the penis during treatment of regional disease. One patient with a positive distal urethrectomy margin underwent glansectomy with no evidence of tumour.
Conclusion: Management of positive resection margins need not involve major corrective surgery. The majority do not recur and when they do, targeted local excision is often possible.

P81

Surgical management of lymphoedema of the genitalia

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Introduction: Genital lymphoedema arises from an aberrant lymphatic drainage with an increased susceptibility to cellulitis. The resulting dermal fibrosis leads to a permanent loss of function and cosmesis. The surgical management of genital lymphoedema over an 8 year period is presented.
Patients and methods: A retrospective review of 82 patients with genital lymphoedema was performed with 52 patients being managed conservatively with compression, elevation and antibiotics and 30 patients managed surgically and forms the basis of this presentation. The aetiology was: Idiopathic (12), Infection (4), Radiation (1), Inflammatory (2), Malignancy (5) and Iatrogenic (6). The surgery consisted of circumcision in 12 patients, total scrotectomy in nine patients and wide excision of penoscrotal skin in the remainder. Skin grafts were required in six patients for penile skin cover. The results of surgery, sexual function and patient satisfaction were recorded.
Results: At a mean follow up of 29 months (range 1–68) an improvement in cosmesis was recorded in 29 patients and 82% have resumed sexual activity. Keloid scar formation (4), revision scrotectomy (3) and revision of a scar contracture (1) were the complications.
Conclusions: The majority of patients with genital lymphoedema can be managed conservatively. Where this fails surgical techniques offer excellent functional and cosmetic results.

P82

Penile prosthesis insertion in acute ischaemic priapism: long term follow-up

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Introduction: The long term results of the immediate penile prosthesis insertion in patients with ischaemic priapism is presented.
Patients and methods: A penile prosthesis was inserted into 53 patients (mean age 42 years; range 26–73) who presented with ischaemic priapism of a mean duration of 171 h (24–408). All patients had failed aspiration and instillation of alpha-agonists and 28 patients had had unsuccessful shunt surgery performed prior to referral. The diagnosis was confirmed by cavernosal blood-gas-analysis, colour-Doppler-ultrasonography and cavernosal smooth muscle biopsy in 39 patients.
Results: The aetiology of the priapism was related to medications (n = 17), haemaglobinopathy (n = 10) and idiopathic in 28 patients. A malleable prosthesis was inserted initially in 49 patients, 10 of which were later electively revised to a 3-piece-inflatable device, and four patients a 3-piece-inflatable prosthesis placed in the acute setting. After a mean follow-up of 17 months, five patients needed revision surgery due to infection (n = 4) or curvature (n = 1). All patients are currently able to have sexual intercourse and the satisfaction rate is 98%.
Conclusions: The immediate insertion of a penile prosthesis in ischaemic priapism is simple to perform with higher satisfaction and lower complication rates when compared to a delayed insertion.

P83

Circumcision is not mandatory in penile surgery

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Introduction: The standard practice when straightening a congenital or acquired penile curvature is to perform an additional circumcision. In the year 2000 this concept was questioned and the subsequent results when patients were given a choice are presented.
Patients and methods: Between 1997 and 2006 a total of 133 consecutive patients (mean age 46 years, range:17–74 years) have had their penis straightened by either a Lue (n = 63) or a Nesbit procedure (n = 70) using a degloving subcoronal circumferential incision. 27 patients had been previously circumcised. 19 patients presented with a tight foreskin of which five refused an additional circumcision. 87 patients had a normal retractable foreskin of which 67 opted not to be circumcised.
Results: The mean follow up of the patients was 5.5 months (range:1–50 months). A secondary circumcision was performed in three of five (60%) patients with a tight foreskin and one of 67 (1.5%) patients with a normal retractable foreskin. Patient satisfaction and significant penile shortening was 97% and 3% in those that maintained their foreskin and 94% and 14% who were circumcised.
Conclusions: Unless a significant phimosis is present, circumcision should not be considered as a routine part of penile surgery.

Thursday 21 June 1130–1230
BPH
Chairmen: Tom McNicholas and Ian Pearce

P84

Can prostatic area be used to diagnose bladder outlet obstruction (BOO) in those who fail to void at the time of urodynamics?

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Introduction: Pressure-flow studies (PFS) are the gold standard for diagnosing bladder outlet obstruction (BOO) in men. Some patients fail to void or have severe overactivity which may invalidate the bladder outlet obstruction index (BOOI). This study looks at the validity of using prostatic area to diagnose BOO.
Patients and methods: The records of males aged 50–88 who underwent urodynamics between 1985–2006 were retrospectively analysed. Those with neurological symptoms or previous surgery were excluded. Urethral pressure profile (UPP) and PFS data were obtained and analysed.
Results: Of 2069 PFS records analysed 1089 had PFS and UPP. Prostatic length, prostatic plateau height and prostatic area were correlated to the BOOI. Receiver operator characteristic curves were used to define a diagnostic cut-off for prostatic area. Prostatic area <70 and >120 predicted non-obstructed and obstructed BOOI respectively with 80% specificity and 50% sensitivity.

TABLE 1: for P84–Correlations of UPP measurements with BOOI

UPP measurement	Correlation coefficient
Prostatic length	r = 0.37
Prostatic plateau height	r = 0.42
Prostatic area	r = 0.49

Conclusion: In men who void during urodynamic studies, the prostatic area correlates with the BOOI, suggesting that it may guide the decision-making process in men who are unable to void.

P85

The failure of cystometric pressure/flow plots in characterising bladder outflow obstruction

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Introduction: The cystometrogram, particularly the pressure/flow plot is enthusiastically promoted as a method for characterising male bladder outflow obstruction. The supporting biomechanical theory is valid but clinical application has not been rigorously tested. A radiologist can discriminate bladder neck obstruction from prostatic stricture by means of a micturating cystourethrogram (video study).
Patients: Videourodynamic studies from 71 men who provided imaging data that a radiologist could classify as showing bladder neck obstruction (42) or prostate stricture (29) were studied.

Methods: The voiding pressure flow plots were analysed according to the principles described by Griffiths, Schaeffer and van Mastrigt. Thus, traces were classed as showing elastic or rigid obstructions. The opening pressures were noted and the hysteresis shown by the voiding pressure/flow plot was assessed.
Results: The data from the cystometrogram did not correlate with the imaging data (Pearson $R = 0.06$, $P = 0.61$). The hysteresis did not discriminate between the radiological groups. There was a strong correlation between the radiographic image and the operation chosen (Pearson $R = 0.7$, $P = 0.002$ versus cystometrogram $R = 0.2$, $P = 0.45$).
Conclusion: A micturating cystourethrogram is significantly superior to a cystometrogram in characterising male outflow obstruction. These data indicate that clinicians take greater cognisance of imaging data to decide management.
Kranse et al. J.Urol. 2003; 169: 1007–1010

P86

Can a computer kick the urologist out of the office?

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Introduction: Management of LUTS is a significant part of the urological workload. We set out to develop an internet hosted computer expert system, based on guidelines issued by BAUS and EAU, designed to assess patients with LUTS and provide safe and appropriate advice to a patient's GP.
Methods: We sought to test the software on a total of 385 patient cases. 49 were synthetic cases, 255 retrospective and 81 prospective. Data was entered for 81 patients by a specialist nurse and 304 by a medical secretary. Computer analysis was assessed for errors and adherence to the LUTS guidelines by a panel of urologists.
Results: The demographics were as follows; Mean age 69.5 years, IPSS 16, Bother 3.8, dipstick positive for blood 29 patients, PMR 118 mls, PSA 2.75 ng/ml. The computer correctly managed all 385 patients according to BAUS guidelines and 2 week wait criteria. Risk factors such as high bladder residuals, high PSA and creatinine levels, etc. were correctly noted and acted upon by the software.
Conclusion: The software system has shown to be an effective and reliable tool in safely managing patients with LUTS. A similar prospective study in the community has been planned.

P87

The long term outcome of men who successfully trial without catheter with alpha blocker during acute retention of urine

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Introduction: While alpha blocker has shown to be useful in increasing the chance of successful trial without catheter (TWOC) during acute retention of urine (AROU) secondary to benign prostatic hyperplasia (BPH), its long term efficacy has not been studied. The aim of this study is to assess the 5 year outcomes of patients treated with alpha blocker after first AROU.
Patients and method: A retrospective review of patients presenting with first AROU secondary to BPH during January 1998 to December 2000 was performed. The primary end-point of study was subsequent requirement of surgical intervention for BPH. Follow up information of subjects were evaluated till November 2006.
Results: During this period, 151 (54.9%) of 275 patients presenting with first episode of AROU secondary to BPH could TWOC with alpha-blocker. They were followed up regularly (median 31.6 months; 0–94.9 months). 74 (49.0%) patients requiring surgical intervention during subsequent follow up. The percentage of these patients requiring surgical treatment at 6, 12, 24 and 60 months were 14.6%, 16.6%, 27.2% and 41.7% respectively. Majority of these patients, 61(82.4%), were due to second AROU.
Conclusions: While Alpha blocker increases successful TWOC, 41.7% of patients would still require surgical intervention within 5 years.

P88

Acute urinary retention is associated with an increased risk of mortality

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Introduction: We estimated age-specific mortality after acute urinary retention (AUR) compared to the general population.
Materials and methods: Data were extracted from the Hospital Episodes Statistics database of all NHS hospital admissions in England. Mortality information was available from the Office for National Statistics (ONS). We identified all men who had experienced a primary AUR. AUR was defined as spontaneous if the primary diagnosis was AUR or if BPH was the primary diagnosis and AUR was recorded in another diagnostic field. In all other cases AUR was considered precipitated. Kaplan–Meier methods were used to estimate age-specific mortality after AUR. Age-specific standardised mortality ratios (SMR) were calculated to compare the observed mortality rates with those in the general population in England.
Results: Between 1st October 1998 and 31st March 2005, 176 936 men were admitted with primary AUR. Mortality rates and SMRs are presented in the table.

TABLE: for 88
Age specific mortality rates (%) at 30, 90 and 365 days, and standardised mortality ratios (SMR) at 365 days (95% confidence intervals) after hospital admission for primary spontaneous and primary precipitated AUR.

	Mortality rate % (95% CI)			SMR (95% CI)
Age group	30 days	90 days	365 days	365 days
Spontaneous AUR				
45–54	1.03 (0.79–1.33)	2.13 (1.78–2.55)	4.03 (3.54–4.60)	17.00 (15.35–18.83)
55–64	1.12 (0.95–1.30)	2.38 (2.14–2.65)	5.26 (4.89–5.65)	9.22 (8.73–9.74)
65–74	1.96 (1.81–2.12)	4.29 (4.06–4.52)	9.73 (9.39–10.08)	6.42 (6.26–6.59)
75–84	3.24 (3.06–3.43)	7.74 (7.46–8.02)	17.88 (17.48–18.30)	4.44 (4.36–4.52)
85–100	6.70 (6.29–7.13)	15.84 (15.24–16.47)	33.00 (32.19–33.82)	2.72 (2.66–2.78)
Precipitated AUR				
45–54	3.40 (2.93–3.94)	5.78 (5.17–6.47)	9.82 (9.01–10.70)	33.42 (30.95–36.08)
55–64	3.90 (3.52–4.33)	7.36 (6.83–7.93)	12.69 (12.00–13.43)	18.84 (17.95–19.76)
65–74	5.81 (5.50–6.14)	10.51 (10.10–10.94)	18.07 (17.54–18.61)	9.83 (9.58–10.09)
75–84	8.52 (8.20–8.86)	16.58 (16.15–17.02)	29.01 (28.47–29.56)	5.82 (5.71–5.92)
85–100	15.47 (14.88–16.09)	28.37 (27.62–29.13)	45.88 (45.03–46.74)	3.26 (3.19–3.33)

Conclusions: AUR is associated with increased mortality in all age groups. The absolute mortality rate after AUR is highest in the oldest age group. However, the relative increase in mortality is highest in younger men. A better understanding of the causes underlying this excess mortality is needed to improve the treatment of men with AUR.

P89

Holmium Laser Enucleation of the Prostate (HoLEP): does size matter?

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Introduction: Our objective is to investigate whether peri-operative parameters, safety and efficacy of HoLEP vary depending on the prostate volume enucleated.
Patients and methods: Our first 216 HoLEP patients were divided into three groups according to the weight of tissue enucleated: Group 1: Less than 40 g (n = 94), Group 2: 40–80 g (n = 71), and Group 3: More than 80 g (n = 51)
Result: There were no significant differences in age and ASA score between groups. More were in retention in Groups 2 and 3 (62% and 61%) than in Group 1 (44%). The efficiency of enucleation increased with increasing volume enucleated, but morcellation rates were similar. Catheter time did not differ but length of stay was longer in Group 3 (2 days) than Group 1 (1 day). Serum sodium change did not differ between groups. There was a mildly greater drop in serum haemoglobin in Group 3 (1.5 g/dl) compared to Group 1 (0.85 g/dl). One patient in retention pre-operatively failed to void post operatively. There were similar improvements in IPSS, QOL, Qmax and PVR in all groups at 3 months. There was no difference in complication rates, although the types of complications differed slightly.
Conclusion: In our experience HoLEP is safe and effective at all prostate volumes.

P90

Experience with green light laser prostatectomy at a UK district general hospital

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Introduction: Green light laser photoselective vaporisation (GLL-PVP) has recently been introduced as an effective modality for the treatment of obstructive lower urinary tract symptoms. In this study, we report our experience regarding efficacy of GLL-PVP in treating prostatic bladder outflow obstruction.
Patients and methods: A total of 342 patients had GLL-PVP using an 80 W Laser (Laserscope) between May 2004 and October 2006. Patients with lower urinary tract symptoms/retention and patients with elevated PSA were included. Patients with elevated PSA had TRUS biopsy pre-operatively. 73 out of 342 patients had glands larger than 50 cc (range 50–238 cc).
Results: Mean hospital stay was 0.54 days (range 0–6 days). Average lasing time was 44.42 min (range 17–125 min) and average energy delivered was 121 934 joules (range 25 194–425 161 joules). The mean follow up period was 12 months (range 3–27) 12 patients had haematuria, four bladder neck stenosis, one bladder mucosal burn, two incontinence, one lasered ureteric orifice and 1 urethral stricture.

TABLE: for P90

	Pre-op	3–6 months Post-op	9–12 months Post-op
Mean Q max flow rate ml/sec	7.78 (0–17.7)	20.22 (3–45.2)	22.7 (3.1–44.4)
Mean Residual Volume (ml)	427.67 (0–2000)	80.94 (0–562)	63.89 (0–522)

Conclusion: GLL-PVP is a safe and effective treatment for benign prostatic hypertrophy with less morbidity. Hospital stay is far shorter than reported in standard TURP series. Significant improvements were observed in flow rates and residual volumes. It is equally effective in treatment of large prostates. Results so far are encouraging.

P91

Cost-effectiveness of single and multiple treatment strategies for surgical management of benign prostatic enlargement

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Introduction: Surgical treatments for benign prostatic enlargement (BPE) aim to ablate sufficient tissue to relieve symptoms whilst minimising morbidity and need for re-treatment. It remains uncertain whether newer options are 'better' in terms of maximising benefit from a given budget than TURP and so we constructed an economic model to determine which treatment strategy for BPE is cost-effective.
Methods: Outcome data from meta-analysis of randomised trials involving minimally invasive (TUMT/TUNA), vaporisation (TUVP/KTP) and resection (TURP/HoLEP) techniques together with cost estimates and other necessary variables were entered into a Markov model. The model was run using 3-month cycles over 10 years to measure cost-effectiveness of each of 24 pre-determined strategies. Maximum budget was set at £20 000 per quality adjusted life year (QALY) gained.
Results: The estimated cost per QALY gained for strategies which were not dominated in the model and were more effective than TURP was £4463 for single HoLEP, £6390 for TUVP followed by HoLEP on relapse and £47 538 for TUVP followed by a maximum of two TURPs on relapse.
Conclusion: In the setting of the current UK NHS a treatment strategy of TUVP using diathermy or laser followed by HoLEP on treatment failure or relapse was cost effective.

P92

Role of alpha blockers in improving recovery following TURP – a prospective, randomised controlled trial

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Objectives: TURP is the gold standard treatment for bladder outflow obstruction. Although 90% of patients notice symptomatic improvement, this can take up to 12 months. We studied the effect of an alpha-blocker on post-operative recovery by conducting a prospective, randomised controlled trial.
Methods: A total of 70 patients were recruited into the study. The patients in the study group were given AlfuzosinXL 10 mg OD for 12 weeks following TURP. Patients were assessed pre-operatively and at 2, 6 and 12 weeks post-operatively. The end-points were IPSS, QoL, flow-rate and post-micturition scan.
Results: The baseline mean IPSS score for the control and study groups was 18.3 +/- 1.5. This improved dramatically to 8.2 +/- 0.9 and 3.9 +/- 0.8 in the control group and to 6.7 +/- 0.9 and 3.1 +/- 0.6 in the study group at 2 and 12 weeks respectively. The baseline Qmax(ml/sec) was 9.5 +/- 1.1 for the control and 8.1 +/- 1.3 for the study groups. This improved to 16.8 +/- 1.7

and 19.3 +/- 2.4 for the control and study groups respectively at 2 weeks. Though the study group patients had better IPSS and flow-rate at the first assessment, this was not statistically significant.
Conclusion: Post operative recovery was faster in the study group. The recovery plateaued at 6 weeks with no difference at 3 months.

P93
The over-prescription of antibiotics following TURP
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Introduction: The incidence of post-operative irritative symptoms and GP consultation following TURP is high, and GP's often prescribe antibiotics empirically. We have therefore audited the incidence of symptoms, proven UTI and antibiotic prescription following TURP.
Patients: A total of 200 consecutive patients undergoing TURP were prospectively studied. All patients were reviewed at 3 months, and questionnaired regarding any LUTS, GP attendances, MSU's or antibiotic prescriptions. The first 100 (Group A) were followed up conventionally, whereas the 2nd 100 (Group B) were asked to provide an MSU if they developed symptoms, or else at the 6 week stage.
Results: 83% felt that they had an improvement in symptoms, and were pleased with the outcome. However, 33% of group A attended their GP with transient symptoms, and of these 96% had been prescribed antibiotics (90% without MSU collection). In group B, 62 patients developed symptoms, but only 16 of these had a positive MSU (26%). Nine patients had a positive MSU despite no symptoms.
Conclusion: Two-thirds of patients experience troublesome symptoms in the post-operative period, but only a quarter of these patients have an urinary tract infection. GP's should therefore be encouraged to collect an MSU prior to deciding on antibiotic treatment.

BJU INTERNATIONAL

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1330-1430 Boisdale Room
Upper Tract and Imaging
Chairmen: Mr Sam McClinton and Dr Paul Taylor
Posters P50 – P58

34 Poster Session 8
1430-1530 Boisdale Room
Laparoscopy/Robotics
Chairmen: Mr Frank Keeley and Dr Ingolf Tuerk
Posters P59 – P66

36 Poster Session 9
1530-1630 Boisdale Room
Prostate Cancer
Chairmen: Professor Roger Kirby and Professor Dr Peter Alken
Posters P67 – P74

Thursday 21 June

39 Poster Session 10
1030-1130 Boisdale Room
Andrology
Chairmen: Mr Ian Eardley and Mr Krishna Sethia
Posters P75 – P83

41 Poster Session 11
1130-1230 Boisdale Room
BPH
Chairmen: Mr Tom McNicholas and Mr Ian Pearce
Posters P84 – P93

