BJUI SUPPLEMENTS

BAUS Annual Meeting, 25–28 June 2012, Glasgow, SECC

Paper Sessions

Tuesday 26 June 2012
Paper Session A
14:00–16:00 Hall 1
PROSTATE CANCER TREATMENT
Chairpersons: Ms Anna O'Riordan & Mr Ed Rowe
Papers A1–A12

Wednesday 27 June 2012
Paper Session B
12:00–13:00 Hall 1
ENDOUROLOGY
Chairmen: Mr Adebanji Adeyoju & Ms Kim Davenport
Papers B1–B6

Paper Session C
15:00–16:00 Hall 1
ANDROLOGY
Chairmen: Mr Duncan Summerton & Mr Rowland Rees
Papers C1–C7

BJUI SUPPLEMENTS

BAUS Annual Meeting, 25–28 June 2012, Glasgow, SECC

Paper Sessions
Tuesday 26 June 2012
Paper Session A
14:00–16:00 Hall 1
PROSTATE CANCER TREATMENT
Chairpersons: Ms Anna O'Riordan & Mr Ed Rowe
Papers A1–A12

A1

UK Radical Prostatectomy Audit 2011

A Laird, GD Stewart, S Fowler, SA McNeill
On behalf of BAUS Section of Oncology
Edinburgh, United Kingdom

Introduction: Radical prostatectomy is a recommended treatment option for localised prostate cancer. While increased use of laparoscopic (LRP) and robotic assisted laparoscopic prostatectomy (RALP) has been reported, its uptake has not been uniform. There is little data describing current practice in the UK.
We aim to use data from the BAUS Cancer Registry to review and compare case mix and surgical variables in open retropubic prostatectomy (ORP), LRP and RALP.
Methods: The BAUS audit database was used to identify patients who underwent a radical prostatectomy during 2011. An interim analysis of the data to October 2011 was undertaken and will be updated for presentation. Patients were grouped based on surgical technique and compared by pre-operative and post-operative risk stratification, operative time, blood loss, complications and positive surgical margin (PSM) rate.
Results: Interim analysis revealed case-load ranging from 1–172 cases/centre. Based on pre-operative staging there was an appropriate selection of mainly intermediate and high risk patients (70.6%), with no difference in case mix between technique. There was no significant difference in mean operating times. When comparing transfusion rate, there was a greater requirement in the ORP group compared with both other modalities. Complications were broadly similar across the three groups. There was a trend towards increased PSM rate in those undergoing ORP, although not reaching significance in the interim analysis.
Conclusions: This snapshot of UK audit data supports previous findings that minimal access surgery offers comparable duration, complications and PSM rates with ORP but a lower transfusion rate.

A2

Persistence of response to lifestyle modification in men with prostate cancer on AST: updated results from an ongoing randomised controlled trial

SE Gilbert, L Bourke, G Tew, EM Winter, DJ Rosario
Sheffield Hallam University/Royal Hallamshire Hospital, United Kingdom

Introduction: Androgen suppression therapy (AST) is associated with fatigue, reduction in physical functioning and negative psychological impact. The aim of this study is to evaluate the effects of a standardised exercise and lifestyle modification programme on the adverse effects of AST, during the intervention and 3 months following cessation of supervision.
Patients and Methods: To date, 62 men on AST for prostate cancer have been randomised to 12-weeks lifestyle modification programme ($n = 31$) or to usual care ($n = 31$) in this RCT. Intervention consisted of 3×45 minute sessions of moderate aerobic and resistance exercise per week with tapering supervision and parallel dietary advice. Outcomes included quality of life (FACT-P), exercise behaviour (Godin lesure score index), exercise tolerance (Bruce treadmill protocol), functional capacity, fatigue (FACT-F), and body mass index. Change from baseline was assessed using ANCOVA.
Results: Improvements in exercise behaviour ($P < 0.001$), aerobic exercise tolerance ($P < 0.001$), functional capacity ($P < 0.001$), self reported fatigue ($P < 0.001$) and quality of life ($P = 0.045$) were observed post intervention. Improvements have been maintained up to 3 months following cessation of the active intervention. No difference has been observed in body mass index ($P = 0.969$).

Conclusion: This large RCT shows a role for regular exercise in improving functional outcomes in men on AST and further demonstrates these effects to be maintained beyond the period of supervised intervention. The role of such an intervention in ameliorating muscle mass loss, cardiovascular disease risk and any impact on prostate cancer specific mortality are currently being evaluated further.

A3

Active surveillance in a UK Cancer Centre – are patients being put at risk?

H Streeter, A Aframian, P Patel, S Mukhtar
Kent and Canterbury Hospital, United Kingdom

Introduction: To determine whether the active surveillance (AS) protocol practised in a UK Cancer Centre is potentially leading to adverse outcomes and to identify risk factors which might enable better patient selection in future.
Methods: 188 patients with low or intermediate risk prostate cancer, maximum age 70 years, were enrolled onto our AS protocol over a 5 year period, and followed up prospectively for a minimum of 2 years (median 2.8). Casenote/cancer database/ pathological review was performed for data accumulation.
Results: 56/188 (30%) patients have received treatment after median 2.8 years follow up. There has been 1 PSA failure, with resulting metastatic disease. Risk factors for deferred treatment included Gleason 7 disease (RR 1.45 vs Gleason 6) and higher cancer burden (median 2 vs 1 core positive, 22 vs 13% core length involvement). Of those diagnosed with Gleason 6 disease, % core length also predicted upgrade to Gleason 7 at rebiopsy. The majority of treatment decisions were made based on rebiopsy rather than PSA trend.
29 patients underwent radical prostatectomy. Pathologically 50% had T3 disease, and 46% of these were margin positive.
Conclusion: The experience in a typical UK Cancer Centre indicates that patient selection is crucial in reducing the risk of under treatment. A single 12 core biopsy may be inadequate to stratify risk in this patient population, and a move to early protocol rebiopsy, or the use of saturation or template biopsies is advised, particularly in intermediate risk cases.

A4

Is treatment delay safe in individuals with low-risk prostate cancer?: Results from a nationwide population-based cohort

QD Trinh, KR Ghani, J Sammon, JO Peabody, M Sun, M Menon, P Karakiewicz
Vattikuti Urology Institute, Henry Ford Hospital, Detroit, United States

Introduction: To compare the effect of radical prostatectomy (RP) delay on postoperative functional outcomes and long-term mortality in a North American population-based cohort.
Patients and Methods: Using the U.S. Surveillance, Epidemiology, and End Results Medicare-linked data, 17153 patients with T1–2, low-grade prostate cancer (PCa) were abstracted (1995 to 2005). Treatment delay was defined as patients who underwent RP > 3 months following diagnosis. Subsequently, the rates of pathological upstaging (≥pT3), postoperative functional outcomes [incontinence and erectile dysfunction (ED)], and the 10-year PCa-mortality rates (after accounting for other-cause mortality) were compared amongst patients who underwent immediate vs. delayed RP.
Results: 2576 (15%) patients underwent RP > 3 months after diagnosis. Younger men, African-American race, unmarried status, and more contemporary treated patients were more likely to have a RP delay. Increasing duration of RP deferral was positively correlated with higher rates of postoperative incontinence and ED diagnosis/procedures. The rate of upstaging increased with delayed treatment (23 vs. 77%, $P < 0.001$). PCa-mortality at 10 years (13.1 vs. 13.7%, $P = 0.67$) did not increase between immediate vs. delayed RP. In multivariable analyses, RP delay of ≥9 months was 1.6- and 1.6-fold more likely to result in a postoperative urinary incontinence diagnosis and procedure, respectively (both $P < 0.001$). In addition, a RP delay of ≥9 months was 1.6- and 2.1-fold more likely to result in a postoperative ED diagnosis and procedure, respectively (both $P < 0.001$).
Conclusions: Treatment delay of more than three months between biopsy and RP may adversely affect final pathology as well as continence and erectile function outcomes.

A5

Patients undergoing transperineal saturation prostate biopsy to assess for suitability of active surveillance are not at higher risk of complications if they proceed to radical prostatectomy

JE Kinsella, M Van Hemelrijck, R Popert, D Cahill, S Morris
Guys and St Thomas, London, United Kingdom

Introduction: We use transperineal saturation prostate biopsy (TPSBx) to exclude patients with high risk disease from an active surveillance (AS) cohort previously diagnosed with a transrectal ultrasound guided biopsy (TRUSBx). It has been suggested that TPSBx will make a subsequent radical prostatectomy (RP) more difficult. We have compared the outcomes of patients undergoing RP following TRUSBx or TPSBx.
Patients and Methods: Between 2009 and 2011, 42 patients underwent a RP following TPSBx at our institution. We selected a contemporary comparator undergoing RP following TRUSBx. In appropriate patients potency following nerve sparing surgery was assessed within a follow-up period of 1 year ($n = 30$).
Results: Operative time and blood loss were slightly higher in the TPSBx group than the TRUSBx group (144 vs 129 min and 379 vs 273 ml, $P = 0.046$ and 0.056 respectively). Complications were higher in the TRUSBx group: post trial without catheter (TWOC) sepsis, symptomatic urinary tract infection delayed TWOC, pelvic haematoma, and readmission with sepsis/ urine leak compared to only one urinoma post TWOC in the TPSBx group within 30 days of biopsy. Delayed complications included one urethral dilatation (UD) for stricture in the TRUSBx group versus 2 UD for stricture.
Continence was excellent in both groups: postoperative continence at 3 months was 81% in the TPSBx group, 93% in the TRUSBx, all but 1/84 patient from the TPSBx group pad free at 1 year. Potency following nerve sparing surgery in the two groups was equivalent ($P = 0.232$).
Conclusion: TPSBx to assess patients for active surveillance does not disadvantage these patients if they proceed to RP.

A6

True day case laparoscopic radical prostatectomy

R Lienert, P Doyle, MH Winkler
Charing Cross Hospital, Imperial NHS Trust, London, United Kingdom

Introduction and objectives: We offer day case surgery as an option for our patients undergoing laparoscopic radical prostatectomy (LRP). The aim of this study is to review quality of life and outcome data for these patients.
Material and methods: For the previous 24 months we have offered day case surgery as an option to selected patients undergoing LRP. Minor modifications are made to surgical and anesthetic techniques. Prospective peri-operative, outcome and quality of life (QOL) data is recorded for all patients. QOL and functional outcomes are assessed using the RAND 36-item health survey and UCLA prostate cancer index questionnaires. Outcomes are compared to all other non-day case patients we have performed LRP on.
Results: 20 patients have undergone day case surgery, which was 50% of those offered day case surgery. Telephone follow-up established that 80% of day case patients were completely pain-free and 90% completely satisfied on day 1 after surgery. 1 patient was re-admitted with catheter related problems. There were no significant complications. Sexual function was improved at 3 months ($p = 0.018$). There was a trend toward improved urinary bother and urinary function at 3 and 6 months follow-up ($p = 0.15$). There was no difference in vitality and physical function scores for these patients at 3 and 6 months.
Conclusions: Day case laparoscopic radical prostatectomy is well tolerated by selected patients and may be associated with improved early sexual function and urinary bother and function.

A7

Oncological outcomes from salvage radiotherapy for biochemical recurrence after robotic assisted laparoscopic prostatectomy (RALP)

TJ Dudderidge, A Ramsden, P Kumar, N Rosenfelder, N Van As, C Ogden
Royal Marsden Hospital NHS Foundation Trust, London, United Kingdom

Introduction: Salvage prostate bed radiotherapy (SRT) is the standard management for post prostatectomy biochemical recurrence in the absence of distant metastases. Here we report the oncological outcomes of SRT.
Methods: Men with biochemical recurrence and no evidence of metastases selected for SRT were identified from a cohort of 510 patients who underwent RALP at our institution. The cohort had a minimum 12 month follow-up. Post operative parameters and biochemical outcomes were studied.
Results: 55 men were identified who had undergone SRT. All but 7 had neoadjuvant androgen deprivation therapy. Clinical parameters are shown in Table 1. Treatment was with 66 Gy to the prostate bed. 12/49 (24.4%) patients with available data have had biochemical recurrence. 2/25 (8%) of those with a post-operative PSA nadir < 0.1 developed post-SRT recurrence compared to 10/24 (42%) with PSA nadir = 0.1. The cohort with the earliest recurrences (50–305 days) after RALP had a higher recurrence rate compared to those with later recurrences (307–843 days) after RALP (8/24 [33%] vs 4/25 [16%]).
Conclusions: Patients requiring SRT after RALP can be advised of a failure rate of around 25% however PSA nadir = 0.1 and early recurrence both increase the risk of repeated treatment failure.

Table 1 for A7

Gleason score	n	Positive surgical margin	n
6	3	No	22
7	42	Yes	33
8	2		
9	8		
Stage		**PSA nadir < 0.1**	
pT2	33	Yes	25
pT3	21	No	25
pT4	1	Unknown	5

A8

Assessment of required nodal yield for accurate staging in a high risk cohort undergoing extended lymphadenectomy in robot-assisted radical prostatectomy and the impact on functional outcomes

HS Dev, P Sooriakumaran, D Sagalovich, A Calaway, A Srivastava, B Chugtai, R Lee, M Herman, M Durand, B Robinson, M Shevchuk, AK Tewari
Weill Cornell Medical College/NewYork Presbyterian Hospital, New York, United States

Introduction: No consensus exists on the extent of pelvic lymph node dissection (PLND) necessary during radical prostatectomy. We aimed to establish a minimal lymph node (LN) yield necessary for accurate staging in a high risk cohort and to investigate the impact of an extended PLND (ePLND) on urinary and sexual function.
Patients and Methods: 760 patients underwent robot assisted radical prostatectomy (RARP) from January 2010–June 2011 by a single surgeon, of which 82 were D'Amico high risk and underwent an ePLND. The incidence of LN invasion was compared in those that had ≥13 LN yield versus <13 LN. To study the impact of ePLND on functional outcomes, we included preoperatively potent and continent patients of all D'Amico risk groups who underwent bilateral NS, and assessed postoperative outcomes using self-reported validated questionnaires.
Results: 5% of the D'Amico high risk patients had positive LNs in the <13 LNY group vs. 21% of patients in the ≥13 LNY group ($p = 0.036$). Among patients who fit the inclusion criteria for functional outcomes ($n = 384$), 63.6% (14 of 22) with ≥20 LN removed recovered potency at a median follow-up of 6 months versus 76.7% of patients with < 20 LN (278 of 362) ($p = 0.0025$), but continence recovery was not different.
Conclusions: High risk patients should undergo an ePLND with ≥13 LN removed for accurate staging. ePLND with LN yields of ≥20 is associated with worse potency outcomes and should be avoided in low and intermediate risk groups.

A9

Medium term outcomes following primary focal therapy using HIFU for localised prostate cancer

L Dickinson, HU Ahmed, N McCartan, A Freeman, A Kirkham, C Allen, R Hindley, M Emberton
University College Hospital, London, United Kingdom

Introduction: A limited number of prospective studies have demonstrated encouraging short-term cancer control and genito-urinary function following focal therapy for localised prostate cancer. We evaluated the medium term outcomes of patients previously treated within focal trials with prospective registry follow-up.
Patients and Methods: Of 118 men with localised prostate cancer (T1c-T3a, Gleason grade ≤4 + 3, PSA < 20) treated (Sonablate® 500 HIFU) in 3 Phase I/II prospective ethics-committee approved trials (hemi-ablation, focal ablation or index lesion ablation), 49 have completed at least 24 months follow-up. Cancer control was assessed using early histological outcomes and medium-term biochemical disease-free survival (BDFS) using Stuttgart (PSA nadir + 1.2) and Phoenix (PSA nadir + 2) criteria. Functional outcomes were assessed using validated patient questionnaires. Erectile function was defined as erections sufficient for intercourse at least 'some of the time'.
Result: Median follow-up was 43 months (range 26–62). Mean number of focal treatments was 1.2 including re-treatment of all men (6/46) with residual clinically significant disease (>3 mm Gleason 3 + 3) on biopsy. There were no prostate cancer related deaths. Two men required salvage radiotherapy. BDFS were 71% (34/48) and 83% (40/48) using Stuttgart and Phoenix criteria, respectively. Preservation of continence at final follow-up was 96% (46/48) pad-free, and 79% (30/38) leak-free pad-free. The rate of preserved erectile function was 82% (36/44), including 16 new cases of PDE-5 inhibitor use (33%).
Conclusion: Our results indicate that the short-term functional benefits of focal therapy seem to extend into medium term follow-up, alongside encouraging cancer control. Longer-term outcomes are required.

A10

Salvage High Intensity Focused Ultrasound; medium term results of a minimally invasive treatment for recurrent prostate cancer after radical radiotherapy

JW Brewin, J Hale, P Hughes, S Jallad, T Larner
Brighton and Sussex University Hospitals, United Kingdom

Introduction: Salvage HIFU is a minimally invasive treatment option for patients with locally recurrent prostate cancer after radical radiotherapy. We have offered salvage HIFU since 2007 and present our medium term outcomes.
Patients and Methods: Patients with locally recurrent prostate cancer following radical radiotherapy were considered for salvage HIFU and discussed at a regional multidisciplinary team meeting. Thirty three patients with a median age of 72 (59–87) were treated by a single surgeon between Jan 2007 and December 2010 using the Ablatherm device. All data were collected prospectively.
Results: Of the thirty three patients 21 (62%) remained recurrence free after a median follow up of 16 months (6–49). Of the 13 patients with biochemical recurrence seven have started hormone treatment and one has died of metastatic prostate cancer. A PSA doubling time of <1 year was significantly associated with an increased risk of biochemical recurrence ($p < 0.05$). Patients with high risk disease (PSA > 20, Gleeson > 3 + 4) were more likely to get biochemical recurrence but this was not statistically significant. There were no fistulae or major complications. Six patients needed urethral stricture/bladder neck dilatation and two developed a post-operative UTI. Incontinence rates were high with 10 patients needing to wear one or more pads/day. Patients with a post-HIFU PSA nadir <0.5 ng/l were unlikely to develop biochemical recurrence.
Conclusion: Salvage HIFU offers good biochemical free cure rates for radio-recurrent prostate cancer with minimal morbidity. However patients need to be counselled about the risks of treatment, especially the risk of urinary incontinence.

A11

Evolution of a 1 stage real-time implant technique: 4D Brachytherapy

E Chadwick, S Javed, RW Laing, SEM Langley
Royal Surrey County Hospital, Guildford, United Kingdom

Introduction: We have performed LDR prostate brachytherapy for the last 12 years, with significant modifications of technique. Data from sequential patients from evolving techniques are compared here.
Methods: In 1999, implants were performed using the Seattle technique. From 2005, stranded seeds were placed peripherally, and loose seeds centrally: 'the Guildford Hybrid technique'. By 2007, real-time planning allowed intra-operative modifications of implant pre-planning. In 2008, a nomogram for seed and strand ordering was developed, allowing 1-stage implant. All planning is now intra-operative. Plans are developed iteratively, in response to Real-time dosimetric feedback: '4D Brachytherapy'.
Results: The upper table describes demographics and dosimetry. Variation in D90 as a percentage of prescribed dose has decreased significantly. V100 has increased, whilst maintaining V150.
The lower table describes changes in urinary function. Mean changes in IPSS and QOL scores were significantly reduced in the 4D group at 3 months. IPSS scores remained improved at 1 year.
40-month biochemical relapse-free survival (bRFS) was 92, 99 and 100% for the Seattle, Hybrid and 2-stage real-time techniques, respectively. Follow up is insufficient for comparison of bRFS for the 4D technique. Duration of anaesthesia for 4D Brachytherapy technique remains short (30–45 mins), despite all planning being intra-operative.
Conclusion: The 4D technique provides more consistent dosimetry, associated with improving bRFS as the technique has developed. Acute urinary toxicity is lower, probably reflecting reduced post-implant oedema. 4D Brachytherapy for localized prostate cancer is a convenient, time efficient therapeutic option, with low toxicity.

Table for A11

	2 Stage Seattle (n = 100)	2 Stage Guildford Hybrid (n = 100)		2 Stage real-time optimized (n = 53)		4D Brachytherapy (n = 100)	
	Mean ± SD	Mean ± SD	p	Mean ± SD	p	Mean ± SD	p
Age (yrs)	63 ± 6	63 ± 6	0.83	63 ± 6	0.45	64 ± 7	0.31
FU (months)	81 ± 32	45 ± 12	<0.05	33 ± 10	<0.05	30 ± 2	<0.05
PSA (ng/ml)	9 ± 4	7 ± 3	<0.05	7 ± 3	0.02	8 ± 3	0.4
Gleason	6 ± 1	6 ± 0	<0.05	6 ± 0	0.01	6 ± 1	<0.05
TRUS vol (cc)	41 ± 10	38 ± 10	0.08	38 ± 12	0.16	38 ± 13	0.13
CT vol (cc)	32 ± 8	42 ± 9	<0.05	36 ± 11	0.01	39 ± 12	<0.05
D_{90} as % Rx dose	97 ± 13	109 ± 10	<0.05	105 ± 9	<0.05	107 ± 8	<0.05
V_{100} (%)	87 ± 8	93 ± 9	<0.05	91 ± 6	<0.05	93 ± 4	<0.05
V_{150} (%)	44 ± 12	56 ± 12	<0.05	44 ± 11	0.97	45 ± 10	0.54
	%	%	p	%	p	%	p
T1c–T2b	74	92	<0.05	89	<0.05	92	<0.05
+Hormones	66	19	<0.05	15	<0.05	35	<0.05
+EBRT	20	5	<0.05	8	0.02	10	0.07
Mean change in IPSS ± SD							
3 months	5.9 ± 6.8	4.56 ± 5.1	0.12	5.5 ± 5.8	0.71	4.0 ± 5.7	0.04
1 year	2.7 ± 5.9	3.1 ± 5.7	0.67	3.3 ± 5.7	0.6	0.97 ± 5.1	0.049
2 years	1.5 ± 5.3	1.7 ± 4.3	0.79	3.7 ± 3.7	0.047	1.5 ± 5.8	0.99
Mean change in QOL ± SD							
3 months	1.3 ± 1.8	1.0 ± 1.5	0.24	1.2 ± 1.6	0.63	0.68 ± 1.3	0.004
1 year	0.73 ± 1.5	0.81 ± 1.5	0.76	0.65 ± 1.3	0.77	0.27 ± 1.5	0.06
2 years	0.32 ± 1.4	0.41 ± 1.0	0.67	0.63 ± 1.4	0.29	0.03 ± 1.3	0.27

A12

FRAX® assessment of men treated with androgen deprivation therapy for prostate cancer

R Turo, W Cross

St James's University Hospital, Leeds, United Kingdom

Purpose: Androgen deprivation therapy (ADT) for prostate cancer is associated with loss of bone mineral density (BMD) and increased risk of fracture. At present, there is limited information on which men are suitable for preventative therapy to maintain bone health. In men treated with ADT for prostate cancer, we have evaluated fracture risk by application of the WHO/FRAX® tool.

Materials and Methods: Patient and treatment parameters were prospectively collected from a practice cohort of men with prostate cancer treated with ADT. Fracture risk was calculated using the online WHO/FRAX® algorithm.

Results: A total of 121 men with a median age of 76 years were evaluated. Bone metastases were present in 43.8% of subjects and 7.4% had a history of fracture. By the FRAX® algorithm the 3% hip fracture risk threshold for preventative treatment was exceeded by 66.9% of men (median 10-year hip fracture risk was 4.7%). When subjects were grouped by age the treatment threshold was exceeded by 18.5% of those younger than 70 years, 64.6% of those 70 to 79 years old and by 97.8% of those 80 years old or older.

Fracture risk was recalculated based on a normal dual-energy X-ray absorptiometry result and the median 10-year hip fracture risk was 1.7% and 9.9% of subjects exceeded the 3% threshold for pharmacotherapy.

Conclusion: In this cohort of men the FRAX® calculated risk of fracture was clinically significant. The results have highlighted the need to address bone health and have guided our service development.

BJUI SUPPLEMENTS

Wednesday 27 June 2012
Paper Session B

12:00–13:00 Hall 1
ENDOUROLOGY
Chairmen: Mr Adebanji Adeyoju & Mr Ed Rowe
Papers B1–B6

B1

Genetic profile of cystinuria in a UK population – the detection of new pathological mutations

KA Wong, R Mein, C Pardy, M Kabia, M Smith, F Flinter, K Thomas
Guy's and St. Thomas' NHS Foundation Trust, London, United Kingdom

Introduction: Cystinuria is an autosomal recessive disease resulting from mutations in SLC3A1 or SLC7A9 genes. Over 200 mutations have been identified from other countries and ethnic groups. We report the first results for a UK population.
Method: Since July 2011, DNA sequence analysis and MLPA assay have been undertaken looking for mutations on both alleles of SLC3A1 and SLC7A9 in patients attending our specialist cystinuria clinic. Correlation with clinical parameters; age of onset and amino acid levels was evaluated.
Results: 44 patients have undergone gene analysis to date. 42 different pathogenic mutations were detected, 9 have not previously been reported in literature and 3 variants of unclear significance.
Combined DNA sequencing and MPLA assay found two mutated alleles in 22 patients on SLC3A1 and 12 patients on SLC7A9. 1 patient had mutations on both genes and 1 patient had only a single mutated allele detected on SLC7A9. There were 3 homozygous mutations on SLC3A1 and 1 on SLC7A9. C.1400T > C(p.Met467Thr) was the most common mutation on SLC3A1 and c.614dupA(p.Asn206fs) the most frequent on SLC7A9.
Initial clinical correlation suggests that patients with mis-sense mutations have significantly lower levels of urinary dibasic amino acids particularly lysine (672 mM/MC SE30.59 vs 922 mM/MC SE22.95 p 0.02) and have a later onset of disease (>20 years) compared with all other mutations.
Conclusion: Remarkably, gene analysis of a UK population of cystinurics has detected 9 new pathogenic mutations. This has the potential to lead to fascinating insights into this disease.

B2

Conservative management of asymptomatic calyceal calculi: natural history

JP Philip, C Higenbottam, A Odedra, K Subramonian
Queen Elizabeth Hospital, Birmingham, United Kingdom

Introduction: Conservative management of asymptomatic calyceal calculi has been difficult to qualify.
To predict the natural history in these patients from a large tertiary cohort.
Methods: Patients who were treated conservatively for calyceal stones over a five year data were included in this study. Data from the in-hospital stone clinic records, CT reports, patient clinic visit records and theatre documents were reviewed.
Results: 201 patients conservatively managed for their stone disease were reviewed. 124 were male and 77 female with multiple calculi in 91. Average follow-up was 80 months (2–174 months). 105 patients who had had a prior surgical intervention were excluded.
70% of the remaining 96 patients had lower pole calculi. Stone sizes were <10 mm in the upper, 4 mm in the middle and 11 mm in the lower calyx. 17 (18%) needed intervention. Larger lower pole calculi (10–16 mm) were likely to require intervention, as where patients with stones >5 mm in the upper and middle calyces.
Among those with a single calculus, 57% of upper, 17% of middle and 18% of lower calyx required intervention. Intervention was undertaken in 10% of patients with multiple calculi; had moderate sized calculi in the upper/middle calyces or renal pelvis. 12 patients underwent ESWL (became symptomatic-7, increased size-5) while five had ureteroscopy (high risk patients having deferred surgery-3, ureteric stone migration-2).
Conclusion: 82% of patients required no surgical intervention. Lower pole calculi including medium-sized/multiple calculi could be treated conservatively. Threshold for intervention should be lower in patients with multiple upper/middle calyceal calculi.

B3

Supine Percutaneous Nephrolithotomy with Endoscopic Combined Intra-renal Surgery – outcomes of the first one hundred patients treated in a single UK centre

NS Awsare, M Ghei, V Rajkumar, PA Jones
Morriston Hospital, Swansea, United Kingdom

Objective: We present our experience using combined supine PCNL and simultaneous ureterorenoscopy (ECIRS: Endoscopic Combined Intra-Renal Surgery) to treating renal calculi.
Patients and Methods: Retrospective analysis of operative times, anaesthetic and surgical complications, and stone-free rates in patients who underwent PCNL and ECIRS at a single centre between September 2007 and November 2011 was undertaken. Outcomes for those patients with BMI > 30 and those with high ASA grade were compared to the remaining patient group.
Results: One hundred patients (48 male, 52 female) underwent 103 PCNL procedures. Thirty-one (31%) patients had BMI > 30 while 48 (48%) had ASA grade III or IV. Thirty-three staghorn calculi were treated. Mean ± S.D. operative time and hospital stay was 111.34 ± 36.92 minutes and 49.5 ± 18.6 hours respectively with no demonstrable increase in either parameter for patients with high ASA grade or BMI. The overall stone-free rate was 87.3% with 13 needing a secondary procedure (eight had salvage EWSL, three had ureterorenoscopy and two underwent a repeat PCNL). Six patients had postoperative complications (three transfusions, two post-operative fever and one ITU admission for sepsis). Neither the presence of staghorn calculus nor BMI > 30 increased their risk of serious surgical complications.
Conclusions: Supine PCNL incurs minimal anaesthetic morbidity. The modified supine position enables PCNL to be performed in the obese safely with high stone-clearance rates when combined with ECIRS thus decreasing the need for ancillary procedures such as ESWL.

B4

Measuring stone burden – 3D software reconstruction vs. ellipsoid algebra

WJG Finch, R Johnston, N Shaida, N Shah, O Wiseman
Addenbrooke's Hospital, Cambridge, United Kingdom

Introduction: Stone size can be measured in various ways with maximum diameter on X-ray KUB traditionally used. 3D cross-sectional imaging and reconstructive software allows for rapid assessment of stone volume. Stone volume may be helpful in predicting treatment outcome for renal stones. We assessed the relationship between maximum diameter on plain film, surface area on plain film and maximal diameter on a single CT slice compared to 3D software reconstructed volume.
Methods: 100 stones with both X-ray KUB and CT scan (1–2 mm slices) were reviewed. Staghorn stones were excluded. Stone volume and surface area were calculated using software designed to measure irregular shaped ellipsoids. Correlation coefficients between all measured outcomes were compared. Stone volumes were analysed to determine the average 'shape' of the stones.
Results: Maximum diameter on X-ray KUB ranged from 3–48 mm, surface area from 6.88–1478 mm^2, CT scan diameter from 3–48 mm and volume from 14.15–36760 mm^3. Smaller stones trended towards prolate ellipsoid (rugby-ball shaped), stones between 8–15 mm towards oblate ellipsoids (disc shaped) and stones over 15 mm towards scalene ellipsoids. Stone maximal diameter and surface area on plain film were well correlated and estimated stone volume with similar precision.
Conclusion: The average shape of renal stones changes with maximal diameter. No single equation for estimating stone volume can be recommended. As maximal diameter changes, there is poor correlation with stone volume. We recommend that research looking at stone clearance rates should use CT reconstructed stone volumes.

B5

What is the most optimal follow up strategy for Pelvi-ureteric Junction Obstruction (PUJO) treated with Pyeloplasty? A 10 year single centre analysis

RK Narahari, A Abroaf, A Adelbacky, DA Rix, NA Soomro, ST Hasan
Freeman Hospital, Newcastle upon Tyne, United Kingdom

Introduction: Laparoscopic Anderson-Hynes Dismembering Pyeloplasty is the gold standard treatment for PUJO with over 95% cure rates. Post operative follow up is very variable and very much surgeon and centre dependent. There is no national (BAUS), international (EAU/AUA) guideline or consensus about how best to follow these patients up.
The aim of our study was to review our 10 year data and propose a follow up strategy.
Materials and Methods: All patients who underwent pyeloplasty between January 2000 and January 2010 were identified using the departmental database and a comprehensive retrospective case note analysis was performed focussing on clinical and radiological follow up strategies used.
Results: 266 patients underwent pyeloplasty during this period with M : F = 121 : 145, median age 45 years and median follow up of 19 months.
89% patients had satisfactory 1st post op renogram at 3 months.
70% patients had further post op renogram after a first satisfactory one. Of these 65% had 2 renograms, 31% had 3 and 11% had 4 renograms. There was no statistically significant difference between the 1st and subsequent renograms with respect to the split function and/or drainage. ($p = 0.023$, paired T test)
The 2nd postoperative renogram made a difference (required secondary intervention) in only 1% ($n = 3$) of this cohort, all of whom had symptoms warranting further imaging.
Conclusions: We therefore propose that a single satisfactory post operative renogram 3 months after stent removal in conjunction with resolution of patient symptoms warrants no further radiological follow-up.

B6

Long-term comparative outcomes of endoscopic management and laparoscopic nephroureterectomy for non-invasive upper tract urothelial cancer (UTUC): 20-year single centre experience

ML Cutress, GD Stewart, EA Egong, ECG Tudor, S Wells-Cole, S Phipps, BG Thomas, SA McNeill, ACP Riddick, DA Tolley

Western General Hospital, Edinburgh, United Kingdom

Introduction: To report the long-term outcomes of patients with non-invasive UTUC treated either endoscopically (ureteroscopic ablation and percutaneous resection) or with laparoscopic nephroureterectomy (LNU). This represents one of the largest comparative studies reported with long-term follow-up.

Patients & Methods: All patients who underwent endoscopic (Endo) or laparoscopic management (LNU) of non-invasive UTUC (pTa or pT1) as their primary treatment from 1991–2011 were included. Standard outcome measures including overall survival (OS), UTUC-specific survival (DSS), recurrence-free survival (RFS), and renal unit survival (RUS) were estimated using Kaplan-Meier methods, with differences assessed using the log rank test.

Results:

Table for B6

Patient characteristics & outcomes	Endo Management	LNU
Number of patients (n)	59	70
Mean (& median) age, year	68.3 (69.4)	77.1 (78.3)
UTUC pathology: G1/G2/G3, n (%)	34 (58)/19 (32)/6 (10)	8 (11)/46 (66)/16 (23)
Mean (& median) follow-up, months	57.8 (47.4)	59.4 (49.4)
5 y & 10 y local RFS, %	49.3, 15.3	100, 100
5 y & 10 y ipsilateral RUS, %	82.5, 54.0	–
5 y OS & DSS, %	64.1, 85.6	74.7, 91.9
10 y OS & DSS, %	31.9, 68.3	74.7, 91.9
Mean (& median) OS & DSS time, months	90 (88), 129	131 (167), 162

5 y DSS outcomes for Endo and LNU groups were 100% and 100% for G1, 62.5% and 91.7% for G2, and 83.3% and 88.9% for G3 disease, respectively. LNU demonstrated superior DSS to Endo for G2 disease ($p = 0.037$). For G3 disease, the final definitive treatments of the Endo and LNU groups were similar as nearly all Endo patients proceeded to early nephroureterectomy (G3 Endo RUS 20%) at a median time of just 26 months, with similar DSS observed.

Conclusion: To the best of our knowledge, this study represents the first comparative report of non-invasive UTUC treated with endososcopic management or LNU. For G1 disease, endoscopic management can provide effective oncological control (G1 5 y DSS 100%, 10 y DSS 80%) and renal preservation (G1 5 y RUS 96.4%, 10 y RUS 62.0%). However, for higher grade disease DSS is inferior to LNU and consideration for endoscopic management should be limited to compelling imperative cases or comorbid patients with very poor life expectancy.

BJUI SUPPLEMENTS

Wednesday 27 June 2012
Paper Session C

15:00–16:00 Hall 1
ANDROLOGY
Chairmen: Mr Duncan Summerton & Mr Rowland Rees
Papers C1–C7

C1

Penile prosthesis insertion in patients with refractory ischemic priapism: immediate versus delayed implantation

E Zacharakis, G Garaffa, AA Raheem, AN Christopher, A Muneer, S Minhas, DJ Ralph
St Peter's Andrology, University College Hospital of London, United Kingdom

Introduction: Prolonged ischaemia within the corpus cavernosum results in the development of corporal fibrosis and severe erectile dysfunction.
In our study we present the long-term outcomes of immediate and delayed insertion of penile prosthesis in patients with ischaemic priapism.
Materials and Methods: A total of 95 patients underwent penile prosthesis insertion. Immediate insertion was performed in 68 patients (mean age 42 yrs) within a mean 171 hours of priapism (range 24–408), and delayed implantation in 27 patients (mean age 45 yrs) after a median of 5 months (range 2–14) from the initial management of the priapic episode.
Result: The aetiology was antipsychotic agents (n = 27), haemaglobinopathy (n = 39) and idiopathic (n = 29).
In the immediate insertion group, 64 patients had malleable and 4 inflatable penile prosthesis. After a mean follow-up of 17 months, 6 patients needed revision surgery due to infection (n = 5) and curvature (n = 1). Overall the satisfaction rate was 96% without penile shortening.
In the delayed implantation group of patients, a second distal corporal incision was required in 80% of patients due to dense fibrosis. 12 patients had malleable and 15 inflatable penile implant. After a mean follow-up of 21 months, 7 patients required revision surgery due to infection (n = 5), erosion (n = 1) and mechanical failure. Overall, 25 patients are currently able to engage in sexual intercourse but dissatisfaction rate is 40% due to significant penile shortening.
Conclusion: Patients with refractory ischemic priapism should be considered for immediate implantation of penile prosthesis as this yields superior functional results and allows the preservation of penile length.

C2

Reconstructive Surgery for Bladder Neck Contracture (BNC) following prostate cancer treatment

AR Mundy, S Bugeja, DE Andrich
UCLH NHS FoundationTrust, London, United Kingdom

Introduction/Objectives: Open surgical correction of BNC is rarely reported in the English literature. We describe our experience with 32 patients and distinguish between BNC due to surgery or radiotherapy.
Patients: Group1: 17 patients with post-prostatectomy(RRP)-BNC. Group2: 6 patients with RRP + salvage external beam radiotherapy(EBRT)-BNC. Group3: 9 patients with EBRT-BNC+/– other salvage treatment (brachytherapy or HIFU).
All patients had failed to respond to several attempts at urethrotomy, bladder neck incision and/or bladder neck resection.
Patients in group 1 and 2 were treated by transperineal excision of their BNC and redo- vesico-urethral anastomosis (redo-VUA). Patients in Group 3 underwent salvage RRP.
Results: 2/17 patients in Group 1 developed a recurrent BNC which was successfully dealt with by a further redo-VUA so that ultimately all 17 were cured of their BNC.
2/6 patients in Group 2 developed a recurrent BNC and were managed with a suprapubic catheter (SPC).
21/23 patients in Groups 1 + 2 were successful but all needed an Artificial Urinary Sphincter (AUS) to restore continence.
Of 6/9 patients in Group 3 with successful reconstruction, only one needed an AUS to restore continence; 3 failures were managed by SPC.
Reconstruction for EBRT-strictures was technically challenging, the post-operative recovery protracted and the outcome less satisfactory.
Conclusions: Redo-VUA is a successful management for patients with refractory post-surgical BNC but all patients require an AUS, therefore treatment is a two-stage process.
After irradiation, surgery is significantly more complicated and the outcome less

satisfactory, but nonetheless successful in the majority.

C3

Sex: the new healthcare inequality

OK Kalejaiye, RP Pear
Derriford Hospital, Plymouth, United Kingdom

Objective: There are less penile prosthesis implanted per head of population in England than in any other European country (personal reference AMS). One of the reasons implicated is lack of funding. The objective of this study was to evaluate the Primary Care Trusts' (PCTs) funding practice and criteria for penile prosthesis implantation in England, Scotland and Wales to determine service equality.
Patients & Methods: Each PCT's website was visited to find the e-mail address for their Freedom of Information (FOI) department. FOI requests were made to each PCT asking questions regarding their criteria for funding and the number of requests and implants funded in the previous 12 months.
Results: A total of 129 PCTs were e-mailed with 95% replying. 31% of the PCTs replying fund penile prosthesis; 22% do not. Although 45% fund under exceptional circumstances, only 20% of these have any clinical criteria to base their decision making. 23% of clinical criteria were based on guidelines. On reviewing those who had received requests for funding in the previous 12 months, 46% did not fund any of the requests, 17% funded 50% or less and 37% funded all the requests received. Of the PCTs funding under exceptional circumstances, only 37% actually funded any of the requests received.
Conclusion: Despite guidelines on the management of erectile dysfunction, there remains variability in access to penile prosthesis surgery. Guidelines are rarely used in decision making. A patient's address and personal wealth appears to have more of an impact than guidelines.

C4

Prognostic significance of extracapsular spread and its extent in inguinal nodes in penile cancer

HM Alnajjar, B Tinwell, R Rajab, G Kousparos, MJA Perry, CM Corbishley, NA Watkin
St George's Heathcare NHS Trust, London, United Kingdom

Introduction: The presence of extracapsular spread (ECS) of tumour in lymph nodes is a recognised adverse prognostic indicator for most squamous cancers. Our objective was to confirm ECS and its extent as a prognostic indicator in patients with squamous cell carcinoma of the penis (SCCp) and calculate 5-year cancer-specific survival in a contemporary cohort based on ECS in the inguinal nodes.
Patients & Methods: Prospective single centre cohort study from 2000–2010. Only primary SCCp with inguinal ECS and no evidence of pelvic node involvement or metastases were included in the study. Inguinal nodal basins with ECS were divided into single node involvement (Group 1) and multiple/bilateral node involvement (Group 2). The groups were further divided into 3 subtypes according to extent of ECS; Focal ECS, extensive ECS and multifocal ECS. 5-year cancer-specific survival was calculated by Kaplan-Meier curves according to pN status with and without ECS and extent of ECS. Statistical difference calculated by Log-rank test.
Results: 39 SCCp cases with ECS of the inguinal nodes were identified from our prospective database over the 10-year period. 5-year cancer-specific survival of Group 1 with ECS is 25% vs. 100 without ECS and Group 2 with ECS is 27% vs. 81.5% without ECS ($P < 0.0001$).
5-year cancer-specific survival in focal ECS is 47%, extensive ECS is 27.5% and multifocal ECS 0% ($P < 0.05$).
Conclusion: Inguinal ECS is an independent prognostic indicator. Extent of ECS is a further important survival indicator. Patients with extensive and multifocal inguinal ECS have significantly reduced survival rates and poorer outcomes.

C5

The outcome of microsurgical epididymo-vasostomy in the management of obstructive azoospermia

AM Abdel Raheem, G Garaffa, MS Shabir, E Zacharakis, A M Muneer, S Minhas, ANC Christopher, DJ Ralph
St.Peter's Andrology & The Institute of Urology, London, United Kingdom

Introduction: Azoospermia occurs in 1% of men and in 10–15% of the infertile male population. An obstructive aetiology is found in 40% of azoospermic men. This study looks at the outcome of microsurgical epididymo-vasostomy in the management of obstructive azoospermia.
Patients and Methods: A retrospective analysis of the outcome of the epididymo-vasostomy procedures performed between 2007–2011. Azoospermic patients with normal testicular size with or without epididymal dilatation, normal hormones (FSH, LH, and Testosterone), normal male reproductive genetic profile, and a TRUS showing no evidence of ejaculatory duct obstruction, underwent scrotal exploration with intraoperative vasogram and microsurgical epididymo-vasostomy when sperm was found in the epididymis.
Results: Microsurgical reconstruction was performed in 76 patients with a mean (range) age of 42 (27–62) years. The patency rate was 61% and the pregnancy rate after 2 years was 25%. The outcome was not significantly affected by the side of anastomosis (unilateral vs. bilateral), the epididymal site of anastomosis (head vs. body vs. tail) or the microsurgical technique used (standard vs. 2 point intussusception). However, the presence of motile sperm in the epididymis significantly affected postoperative patency and the age of the female partner significantly influenced the pregnancy rate. The age of the female was ≤35 in all couples that achieved pregnancy.
Conclusion: In the absence of a female factor for infertility, microsurgical reconstruction should be offered to men with obstructive azoospermia. The presence of motile sperm in the epididymis and the age of the female partner are the factors that influence the outcome.

C6

Is there a case for centralising andrological surgery in the UK?

RW Rees, S Swift, D Summerton, N Watkin, S Payne, T Terry, S Minhas
Royal Hampshire County Hospital, Winchester, United Kingdom

Introduction: Andrological and genito-urethral surgical services in the UK vary according to local expertise and resources, and service provision across the country is not formalised. With the exception of penile cancer, BAUS has no quanitative information on surgical workload within the reconstructive aspects of this sub-speciality. This abstract aims to quantify the distribution of this activity in England.
Materials and Methods: Utilising the Hospital Episode Statistics (HES) data from the 2009–2011 period, procedure numbers were obtained for (1) Urethral surgery (2) Artificial Urinary Sphincter (3) Penile prosthesis and (4) Penile curvature surgery. Direct age-standardised rates (DSR's) per 100,000 population within each SHA, PCT and Acute Trust in the UK were calculated for each procedure using dedicated statistical software.
Results: 1613 Urethroplasties, 564 AUS's, 727 Penile prostheses and 6745 penile curvature procedures were recorded in this period. DSR varied significantly between the 10 English regions (Rates per 100,000 population per year: Urethroplasty 10.96 to 13.57, AUS 0.55 to 1.73, Penile prostheses 0.85 to 2.06, Penile curvature surgery 10.22 to 14.91). At PCT level, there was over a 20-fold difference, and case volume per hospital varied between 1 and > 100 cases per year.
Conclusion: Even accounting for outliers, there is significant variation in surgical operation rates, with many units performing low numbers of procedures. This data provides the basis to (i) examine reasons behind the geographical variation, (ii) examine the volume/outcome relationship, and (iii) discuss the concentration of services in designated higher volume regional units.

C7

The use of Hospital Episode Statistics (HES) to demonstrate the natural history of the operative management of urethral stricture disease

AM Sinclair, SR Payne, DE Andrich, SE Middleton
Stockport NHS Foundation Trust & UK Urethral Surgeons Group, Stepping Hill Hospital, United Kingdom

Introduction: We have previously demonstrated that Hospital Episode Statistics (HES) data is robust and correctly identifies appropriate core and reconstructive urethral procedures, providing appropriate parameters are set. This can then be used for longitudinal analysis of male stricture disease.
Patients and Methods: A specific urethral dataset, generated following robust test and retest of the HES database, was used to determine the natural history of the operative management of urethral stricture disease between 1996 and 2011. This was achieved by determining the number of core procedures performed, such as optical urethrotomy and dilatation, and comparing these with the reconstructive surgery carried out for men with urethral stricture disease.
Results: Over 15 years, 193,967 core and 6,953 reconstructive procedures were performed for stricture disease. The number of core procedures did not vary significantly (range 11,627–14,537/year) but reconstructive procedures increased annually from 260 to 728/year over this period. In 2010, 13,887 male patients had a core procedure, of which 5,563 (40%) had a previous core procedure. 51%, 75% and 85% had that additional procedure within 1, 3 and 5 years respectively. With 10 year follow up, 32.4%, 47% and 55% of patients, having dilatation or urethrotomy can expect a second, third or 4th core procedure respectively.
Conclusions: This extensive national dataset shows that 40% of patients have repeat core procedures when reconstruction should be considered. After 1 core procedure there is a 32.4% symptomatic recurrence rate requiring further intervention, and recurrence risk increases with each subsequent dilatation or urethrotomy.