BJUI SUPPLEMENTS

BAUS Annual Meeting, 20–23 June 2011, The BT Convention Centre, Liverpool

Paper Sessions

Tuesday 21 June
Paper Session A
14:00–16:00 Hall 3A/B
PENILE CANCER
Chairmen: Mr Duncan Summerton & Mr Vijay Sangar
Papers A1–A10

Wednesday 22 June
Paper Session B
08:45–10:30 Hall 3A/B
BLADDER CANCER DIAGNOSIS/TREATMENT
Chairmen: Mr Roger Kockelbergh & Mr Mark Johnson
Papers B1–B13

Paper Session C
14:00–16:00 Hall 3A/B
EDUCATION & TRAINING
Chairmen: Mr Sam Liu & Miss Gillian Smith
Papers C1–C10

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Paper Session A
14:00–16:00 Hall 3A/B
PENILE CANCER
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Papers A1–A10

A1

Long-term survival of primary penile cancer in a supra-regional centre

HM Alnajjar, MJA Perry, C Corbishley, NA Watkin
St George's Hospital, London, United Kingdom

Introduction: Long-term survival data for patients with squamous cell carcinoma of the penis (SCCp) is sparsely reported in the literature. Inguinal node status is the most important determinant of cancer-specific survival. The objective of this study was to measure 5-year cancer-specific survival of SCCp in a contemporary cohort based on nodal status.
Patients and Methods: Prospective single centre cohort study from April 2000 to April 2010. All patients with newly diagnosed SCCp with complete follow-up data were analysed. 5-year cancer-specific survival was calculated by Kaplan-Meier curves according to cN, pN or M1 status, with statistical difference calculated by the Log-rank test. Nodal basins with extra-capsular spread (ECS) were categorized as pN3.
Result: 411 cases were analysed. Overall 5-year cancer-specific survival was 81.0%. By nodal stage, 5-year survival was 98.3% (N0), 100% (N1), 81.5% (N2), 24% (N3) and 17% (M1) respectively ($P < 0.0001$).

Table for A1. Cancer-specific survival data summary

	pN3	pN2	pN1	pN0	M1	cN0	cN2	Total
N	47	16	26	213	28	79	2	411
Deaths	22	2	0	3	18	1	2	48
Median survival	18 mo	–	–	–	17 mo	–	–	–

Conclusion: Patients with N0 and N1 status (without ECS) have a very high cure rate regardless of T stage and grade. This reflects the fact that almost all tumour cells micro-metastasize through the inguinal nodes and nodal staging/therapy remains critically important. In contrast, N3 and M1 patients are at high risk of progression/death regardless of therapy, and efforts to improve treatment in these groups remains paramount.

A2

Is pelvic lymph node dissection for pN2 penile cancer necessary?

M Shabbir, CJ Shukla, A Freeman, DJ Ralph, A Muneer, S Minhas
University College Hospital, London, United Kingdom

Aim: To assess the detection rate and outcome of patients who underwent pelvic lymph node dissection (PLND) for pN2 disease as recommended by EAU guidelines.

Methods: We reviewed all cases at our institution between 2000–2010. Tumour stage, grade, subtype, lymphovascular invasion (LVI), number of positive inguinal lymph nodes (ILN) and presence of extra nodal spread (ENS) were assessed and correlated with PLN status and outcome data. Fisher's exact and unpaired *t* tests were used for analysis (p values <0.05 taken as statistically significant).
Results: 34 patients had pN2 disease.
14 had no PLND (41%):
4/14 were unfit for surgery. 8/14 had advanced disease. 2/14 opted for surveillance. 9/14 died after a median of 218 days (33–1110 days).
20 underwent PLND (59%):
4/20 had PLN metastases. All positive PLN's were ipsilateral to the positive ILN's. 50% died after a median of 1233 days (335–2132 days).
16/20 had no PLN metastases. 38% died after a median of 476 days (324–912 days).
Only the number of involved ILN correlated significantly with PLN involvement (mean

5.5 vs. 2.6 ILN in positive vs. negative PLND, p = 0.03). Mortality was not significantly associated with PLN status, but ENS was a significant independent predictor of death (p = 0.02).
Conclusion: PLND has a low yield in pN2 disease, detecting metastases in only 20%. Metastatic PLN were only detected on the ipsilateral side. Mortality was not associated with PLN status and PLND itself did not confer any significant survival advantage, questioning the extent and need for PLND in pN2 disease.

A3
Outcome from radical lymphadenectomy (RL) for penile carcinoma – a contemporary series
CJ Shukla, R Nigam, P Malone, DJ Ralph, A Muneer, S Minhas
University College London Hospitals, United Kingdom

Introduction: Lymph node metastasis is the single most important prognostic factor predictive of outcome in penile cancer. The aim of this study was to determine the long term outcome of patients with node positive penile cancer treated by RL and identify any adverse histopathological risk factors predicting disease progression.
Materials and Methods: Between 2002 and 2010, 61 patients with penile cancer underwent radical lymph node dissection for palpable disease or if imaging/sampling identified metastases according to EAU guidelines. Histopathological characteristics of the primary tumour including grade, stage, lymphovascular invasion and lymph node density were also analysed.
Results: 96 groins were subjected to radical lymph node dissection. Kaplan Meier curves for overall survival and lymph node status demonstrated that node positive patients had worse overall and cancer specific survival (median of 71 months) compared to node negative patients (10 year survival of 87%) (P = 0.0011), with N0 and N1 stage patients demonstrating a superior survival to N2 and N3 groups (P = 0.0071). Grade 3 disease (P = 0.0353) was an independent risk factor for nodal disease, whilst receiver operator characteristic (ROC) curves showed that lymph node density was highly predictive of cancer specific survival (AUC = 79%, P < 0.0001)
Conclusions: When survival data from this contemporary series is compared to historic series, there has been little improvement in survival. This highlights the need for patients with node positive disease, particularly those with adverse histopathological prognostic factors to be offered adjuvant treatment modalities to improve survival, ideally within a trail setting.

A4
Early experience of the use of dynamic sentinel node biopsy in penile cancer patients with non-palpable inguinal nodes
J Gall, M Lau, B Carringtom, B Murby, J Shanks, V Sangar
The Christie Hospital, Manchester, United Kingdom

Introduction: Dynamic sentinel node biopsy (DSNB) has been shown to be effective in minimising hospitalisation and morbidity in cN0 high risk penile cancer. Our centre introduced DSNB as part of the BAUS/RCS roll-out program; this will be reported separately. Here we present our initial series.
Patients and Methods: Penile cancer patients with stage = T1 G2 and cN0, underwent DSNB protocol. All patients underwent USS ± FNA of the inguinal regions and in those with negative findings DSNB was performed. The technique included radio-labelled nanocolloid and lymphoscintigraphy, followed by patent blue dye, intra-operative gamma probe localisation and excision of the sentinel node.
Results: 34 patients (Mean age 57.3 yrs) with 68 groins were studied.
The primary tumour histology was T1 in 10 cases, T2 in 22 cases and T3 in 2 cases.
USS + FNA was positive in 4 groins, leaving DSNB being performed in 64 groins. The detection rate at surgery was 93.8%.
Positive sentinel node histology was found in 6.7%, these patients went on to have completion node dissection.
With a mean follow up of 15.5 months the false negative rate is zero.
Conclusion: These early results show that the technique is reproducible and does not have a significant learning curve. We encourage other centres to introduce the technique as part of a multi-centre audit.

A5
Penile cancer and the impact of penectomy or penile conserving surgery on perceptions of masculinity, quality of life and post-surgical psychological adjustment
S Carnes Chichlowska, P Bose, N Parr, V Sangar, K Bullen
Aberystwyth University, United Kingdom

Introduction: Penile Cancer constitutes less than 1% of malignancies in British men.
Treatment preference is penile conserving surgery which has a higher recurrence rate. It is believed, but not proven, that conservative surgery provides better results with less impact on psychological and sexual function, masculinity and quality of life.
Method: 78 men with penile cancer were measured for Conformity to Male Norms (CMNI); quality of life (QoL), anxiety and depression and self-esteem as possible risk predictors of psychological outcomes. Sub-groups were compared based on surgical procedure: conservation/ reconstruction (CR); partial penectomy (PP); total penectomy (TP).
Interviews assessed patients perceived masculinity and psychological health.
Results: Differences between outcome measures were non-significant across surgical groups. A significant difference indicated PP patients had higher masculinity scores, compared to CR and TP.
Across all scores, significant relationships were between higher anxiety and depression, higher anxiety/depression and lower QoL.
CMNI scores were not a predictor for psychological outcomes in any type of surgery. Qualitative data revealed the importance of the confidence in care, the secrecy of the cancer and the coping mechanisms men employed.
Conclusion: Results from this sample, indicated healthy, sub-clinical physical and psychological functioning across all measures regardless of surgery type. Penile conserving surgery appears not to produce a significant difference in psychological outcome. This finding could inform clinical decisions regarding surgery choice and risks of recurrence.
Qualitative data suggested successful coping methods assisting rehabilitation.

Concepts of masculinity were balanced by a psychological 'masculinity debit and credit' system.

A6

Treatment of carcinoma in-situ (CIS) of the penis with topical chemotherapy agents

HM Alnajjar, W Lam, M Bolgeri, MJA Perry, C Corbishley, NA Watkin
St George's Hospital, London, United Kingdom

Introduction: The use of topical agents in the treatment of CIS of the penis has been well described in the literature. Previous studies have been limited by small size and imprecise end-points. The objective of this study was to establish the response rate of 5-flurouracil (5-FU) and Imiquimod (IQ) in the treatment of penile CIS in a large contemporary series in a supra-network centre.

Table 1 for A6

	CR	PR	NR	Local toxicity	Adverse events
5FU (n)	20	10	10	4	3
5FU (%)	47%	23%	23%	9.0%	7.0%
IQ (n)	4	0	5	0	1
IQ (%)	9%	0%	12%	0%	2.0%

Patients and Methods: Retrospective review of all primary and recurrent cases of penile CIS treated with 5-FU and IQ identified from a prospective database over a 10 year period. Therapy was standardised in all cases with application to the lesion for 12 hours every 48 hours for 28 days. 5-FU was the first line therapy and IQ used as second line topical chemotherapy agent.
The primary end-point was defined as complete response (CR = resolution of lesion), partial response (PR = lesion reduced in size and or visibility) and no response (NR = no improvement in lesion size and or visibility). The secondary end-points included local toxicity and adverse events.
Result: A total of 85 patients were diagnosed with CIS of the penis over the 10 year period. 43/85 (51%) received topical chemotherapy. Mean follow up: 34 months. The response rates, local toxicity and adverse events are detailed in table 1.

The overall complete response rate for topical agents was 56%.
Conclusion: Topical chemotherapy agents are moderately effective first line therapy in the treatment of penile CIS. Toxicity and adverse events were low with our treatment protocol. The issue of long term surveillance and assessment of partial responders remains a challenge. Topical chemotherapy should remain a first line treatment option for penile CIS.

A7

Do younger patients have more aggressive penile cancer?

M Shabbir, R Nigam, P Malone, DJ Ralph, S Minhas, A Muneer
University College Hospital, London, United Kingdom

Aim: Although a number of histopathological features are used to predict the presence of metastatic lymph node disease and used as prognostic indicators for patients with penile cancer, the impact of the age at presentation has not been fully defined. We investigated whether younger patients with penile cancer are at higher risk of presenting with a more aggressive subtype with a poorer prognosis.
Methods: We reviewed all cases treated at our institution between 1988–2009. Patients were divided into two groups; those >45 years and those <45 years old. Histopathological features such as grade, tumour subtype, stage (>T2), presence of lymphovascular invasion (LVI) or Balanitis xerotica obliterans (BXO), and presence of inguinal lymph node disease (ILN) were assessed and compared. Fisher's exact test was used for analysis, and p values <0.05 were taken as statistically significant.
Results: We identified 42 patients <45 years and 248 cases >45 years old. There was no significant difference between these groups in the overall rates of G3 disease, Basaloid subtype, stage >T2, presence of BXO, LVI, or ILN disease. However, patients <45 years with LVI had a significantly worse prognosis, with a 70% cancer related mortality vs. 17% in patients with LVI > 45 years old (p = 0.0019).
Conclusion: While there is no apparent difference in the rate of histopathological risk factors related to age alone, younger patients with LVI have a significantly poorer prognosis. A more aggressive treatment strategy in young patients with adverse pathological features such as LVI should therefore be employed.

A8

Oncological outcomes of glans resurfacing in the treatment of selected superficially invasive penile cancers

BE Ayres, W Lam, HM Al-Najjar, CM Corbishley, MJA Perry, NA Watkin
St George's Hospital, London, United Kingdom

Introduction: Glans resurfacing involves excision of the glans and subcoronal epithelial and subepithelial tissues followed by partial thickness skin grafting to the denuded corpus spongiosum. We have extended the use of this technique from benign and premalignant penile disease to the treatment of selected superficially invasive squamous cell carcinomas (SCC).
Methods: Since April 2002, 64 patients had glans resurfacing at our unit for penile neoplasia. 36 men had the procedure for invasive penile SCC and 28 for confirmed pre-malignant lesions. Data was recorded prospectively in a database and outcome measures of positive margin rate, early revision rate and local recurrence rate were determined from the database, patient notes and histopathology records.
Results: Of the 36 men treated for SCC, 7 had positive margins (19%). 3 with extensive positive margins required an early glansectomy (early revision rate 8%). 4 had focal low/intermediate grade positive margins – 2 had a small recurrence excised completely and remain disease free at 12 and 24 months follow-up (recurrence rate 6%). The remaining 2 men are recurrence free at 3 and 17 months. There were no recurrences in patients with negative margins at a median follow up of 15 months (1–69). Except 1 man, grafts took well with good cosmetic results. 6 men had penile cancer diagnosed unexpectedly

following failure of topical chemotherapy for pre-malignant lesions.
Conclusions: In our experience glans resurfacing is oncologically safe for the management of selected superficial penile cancers providing the optimal cosmetic and functional result currently available in penile cancer surgery.

A9

BAUS section of Andrology and Genito-Urethral Surgery National Penile Cancer Audit: 5 year cancer specific survival of patients with suspected pelvic lymph node involvement

S La-Touche, V Sangar, S Minhas, N Watkin
BAUS Section of Andrology and Genito-Urethral Surgery, The Royal College of Surgeons of England, London, United Kingdom

Introduction: Pelvic lymph node involvement in patients with squamous cell carcinoma of the penis (SCCp) is associated with only 5–25% reported 5 year survival. Historical series are generally of poor scientific validity. In this study we aim to analyse the survival of patients who meet the criteria for pelvic lymph node dissection (PLD) in order to determine if there is clinical benefit in treatment versus observation.
Patients and Methods: We conducted a national, multi-centre, retrospective review. All patients with SCCp who met the EAU guideline for PLD (single positive inguinal node with extra-capsular spread, multiple inguinal nodes, radiologically suspicious or positive pelvic nodes) were identified and included regardless of treatment. The primary outcome measure was death from SCCp. A minimum 12 months follow up since 1st definitive treatment was required. Kaplan-Meier survival curves were plotted and 5 year cancer specific survival calculated for 4 groups of patients. Group 1 surveillance only, Group 2 PLD only, Group 3 PLD plus chemotherapy and/or radiotherapy, Group 4 chemotherapy and/or radiotherapy without PLD.
Results: Data has been collected from 6 supra-network centres 120 patients were available for analysis. 5 year survival for Group 1 was 45.6%, Group 2 was 40.1%, Group 3 was 33.8% and Group 4 was 45.2%. There was no statistically significant difference between the groups.
Conclusion: The data suggests that there is no survival benefit from treatment of the pelvic lymph nodes with any modality. However, despite analysis of a large multi-centre series, the retrospective nature of the study limits interpretation.

A10

Salvage microdissection testicular sperm extraction; outcome in men with Non obstructive azoospermia

JS Kalsi, M Shabbir, D Dente, A Muneer, S Minhas
UCL Hospitals NHS Trust, London, United Kingdom

Introduction: The role of microdissection sperm retrieval (m-TESE) in men who have already undergone sperm retrieval using conventional TESE/TESA has not been extensively evaluated. The aim of this study was to determine the outcome of m-TESE as a salvage treatment in men with non obstructive azoospermia (NOA) in whom no sperm was seen on initial diagnostic/single/multiple TESE or TESA.
Materials and Methods: A total of 35 men with NOA underwent microdissection testicular sperm extraction. All patients had previously undergone either single/multiple TESE or TESA with no sperm found. All patients underwent a m-TESE by a single surgeon. Serum follicle-stimulating hormone and histopathological diagnosis were examined as predictive factors for sperm recovery. All patients underwent pre-op genetic screening. One patient had AZFc micro-deletion diagnosed pre-op.
Results: The mean age of patients was 40.5 years (range 29–57). Spermatozoa were successfully retrieved in 20 men by m-TESE (57.1%). The mean FSH level was 21.4 (range 3.7–58.5). There was no correlation in FSH levels and the ability to find sperm by m-TESE (Mean FSH retrieved 23.9, not retrieved 18.7, $p = 0.34$). Patients with Sertoli-cell-only diagnosis (51.5%) had lower sperm retrieval rates compared to the hypospermatogenesis group (72.7%). There were no significant complications following surgery.
Conclusions: In men with NOA who have undergone previous attempts at sperm retrieval with negative results, salvage microdissection sperm retrieval offers a significant chance of finding sperm even in sertoli cell only.

BJUI SUPPLEMENTS

Wednesday 22 June
Paper Session B

08:45–10:30 Hall 3A/B
BLADDER CANCER DIAGNOSIS/TREATMENT
Chairmen: Mr Roger Kockelbergh & Mr Mark Johnson
Papers B1–B13

B1

Diagnosis of bladder cancer by combined detection of minichromosome maintenance 5 protein and NMP22 in urine

J Dudderidge, N Vasdev, A Wollenschlaeger, O Okoturo, J Kelly, K Stoeber
Royal Marsden Hospital, London, United Kingdom

Introduction: Urinary markers for bladder cancer have not been widely accepted because of constrained accuracy. Here we evaluate the diagnostic accuracy of urinary Mcm5 in bladder cancer in comparison and in combination with NMP22.
Methods: Consecutive patients under investigation for urinary tract malignancy were recruited to a prospective blinded observational study. 1677 patients who underwent ultrasound, IVU, cystoscopy, urine culture and cytology leading to clinical diagnosis were recruited. An immunofluorometric assay measured Mcm5 levels in urinary sediments. NMP22 urinary levels were determined with the Matritech NMP22® Test Kit. Sensitivity, specificity and receiver-operator characteristics (ROC) curves were determined for Mcm5 and NMP22 alone and together for the diagnosis of urothelial cancers.
Results: Tumours were identified in 144/1451 (9.9%) patients with an Mcm5 result and in 195/1396 (14%) patients with an NMP22 result. At the assay cut-point where sensitivity and specificity were equal, the Mcm5 test detected tumours with 65% sensitivity (95% CI, 56–72%) and 94% NPV (95% CI, 93–96%). The area under the ROC curve for Mcm5 was 0.71 (95% CI, 0.66–0.77) and 0.72 (95% CI, 0.67–0.77) for NMP22. Multi-ROC analysis shows that NMP22 and Mcm5 together provide sensitivity and specificity of 70% compared to 65% when used in isolation. This combination identifies 100% of = T2 tumours, 97% of grade 3 tumours and 80% of cases of carcinoma in situ.
Conclusions: Mcm5 is a simple, accurate, non-invasive test for identifying urothelial cancers and can be combined with NMP22 to improve diagnostic accuracy and identify nearly all life threatening disease.

Table for B1

	No.	Sensitivity, % (95% CI)	Specificity, % (95% CI)	PPV, % (95% CI)	NPV, % (95% CI)
Mcm5 test cut-point					
1000		74 (66–81)	51 (48–53)	14 (12–17)	95 (93–96)
1700	1451	65 (56–72)	64 (62–67)	17 (14–20)	94 (93–96)
17 200		29 (22–37)	99 (98–99)	76 (63–87)	93 (91–94)
NMP22 test cut-point, U/mL					
2		74 (68–80)	45 (42–48)	18 (15–21)	92 (89–94)
4.5	1396	67 (60–74)	66 (64–69)	24 (21–28)	93 (91–94)
100		14 (10–20)	99 (98–99)	70 (53–83)	88 (86–89)

B2

Detection and staging of bladder cancer by 'OMIC' analysis of urine

RT Bryan, U Guenther, W Wei, MP Zeegers, ND James, KK Cheng, DMA Wallace, DG Ward
School of Cancer Sciences, University of Birmingham, United Kingdom

Introduction: Seventy-five to eighty per cent of bladder cancer patients present with non-muscle-invasive (Ta/T1) tumours and require ongoing endoscopic surveillance. There is an urgent need for better non-invasive tools which detect bladder cancer, or distinguish non-invasive from invasive disease; this need may be met by 'omic' approaches.
Patients and Methods: We have used mass spectrometry (MS) to characterise the urinary peptidome of 878 urine samples and are now using LC-MS/MS based proteomics and nuclear magnetic resonance spectroscopy based metabolomics. Creatinine, protein and albumin concentrations have also been determined in these samples.
Results: The study comprised of 751 patients with bladder cancer (Ta/T1 589, T2+ 162) and 127 patients without bladder cancer. Microscopic haematuria was detected in 39% of patients with Ta/T1

disease and 77% of those with T2+ disease. Albumin and total protein levels were similar across the non-cancer and Ta/T1 groups, but significantly elevated in patients with muscle-invasive disease. The area under the ROC curve for the detection of T2+ disease by total protein was 0.77. The peptidome showed large differences between the spectra of patients with/without T2+ disease; many of the peptides were fragments of blood proteins. Preliminary LC-MS/MS data identifies >750 proteins present in the urine of bladder cancer patients and metabolite profiles show good discrimination between patients with/without cancer.
Conclusions: Microscopic haematuria is strongly associated with invasive disease, and even traces of blood/plasma heavily influence the urinary peptidome. Ongoing proteomic and metabolomic analyses are generating candidate biomarkers for further validation.

B3

Nuclear Matrix Protein-22 (NMP-22) for the diagnosis of urothelial cancer – a prospective study

S Hanchanale, MJ Stower, GH Urwin, KH Chan, JR Wilson
York Teaching Hospital NHS Foundation Trust, United Kingdom

Introduction: The early diagnosis and management of the bladder cancer improves the prognosis and overall survival. We prospectively assessed the utility of NMP-22 for the diagnosis of urothelial transitional cell carcinoma (TCC).
Materials and Methods: All patients with visible and non-visible haematuria referred to York Hospital (Aug 2009 to Aug 2010) were included in the study. Haematuria evaluation involved flexible cystoscopy, renal ultrasound, urine for culture and NMP-22 analysis. The sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of NMP-22 in the diagnosis of urothelial TCC were assessed.
Results: A total of 841 patients had NMP-22 as a part of haematuria work-up. 492 (59%) had visible haematuria and 516 (61%) were male. Mean age (±SD) was 65 (±15) years.

Sixty-six patients were diagnosed with TCC of the bladder and six with upper tract TCC. NMP-22 was positive in 34 (52%) of TCC of the bladder and 5 (83%) of upper tract TCC. Sensitivity, specificity, PPV and NPV of NMP-22 were 54%, 93%, 41% and 96% respectively. The sensitivity was better with visible (60%) than non-visible (29%) haematuria patients. Similarly, the sensitivity and specificity were better with high grade (76% and 91%) and invasive (100% and 89%) tumours. All the bladder tumours were visible on cystoscopy. One upper tract TCC was diagnosed solely on the basis of positive NMP-22.
Conclusion: In this prospective study, NMP-22 provided no additional benefit in the diagnosis of urothelial TCC except in one case of upper tract TCC.

B4

A prospective randomised trial of Hexylaminolevulinate (HAL) assisted transurethral resection (TURBT) plus single shot intravesical MitomycinC (MMC) versus white light TURBT plus single shot MMC in newly presenting bladder cancer

E Ray, K Chatterton, D Wilby, MS Khan, K Thomas, TS O'Brien
Guys Hospital, London, United Kingdom

Introduction: 'Blue-light' (B/L) cystoscopy provides a more complete assessment of a bladder tumour than white-light (W/L) cystoscopy. Whether this leads to lower recurrence rates following initial resection is unknown because studies have usually included patients with both new and recurrent tumours and have not utilised single shot intravesical chemotherapy.
Methods: 249 patients with suspected non-muscle invasive bladder cancer (NMIBC) enrolled into a randomised trial of HAL blue-light TURBT plus single shot MMC versus white-light TURBT plus single shot MMC. Patients with a previous history of bladder cancer were excluded. Primary endpoints: recurrence within 3/12 and 12/12.
Results: In 207/249 (83%) histology revealed cancer, and in 184/207 (89%) the cancer was NMIBC (B/L 99:W/L 85). TNM classification was low grade/G1pTa = 98 (B/L 50:W/L 48); high grade/G3pTa = 28 (B/L 13:W/L 15); high grade/G3pT1 = 57 (B/L 35:W/L 22). 128/184 (70%) patients received MMC (B/L 62:W/L 66).
No statistically significant difference in recurrence observed between the 2 arms at 3 or 12 months.
3/12 recurrence: 17/94 B/L (18%) vs 14/82 W/L (17%) (p = 0.86). By Nov 2010, of those 145 patients (B/L 77:W/L 68) recurrence free at 3/12, 10 patients await their 12/12 cystoscopy, and 8 lost to follow up (B/L 7:W/L 1) (5 died, 1 refused, 2 lost). Recurrence at 12/12 was seen in 10/66 B/L (15%) vs 12/61 W/L (20%) (p = 0.50). No adverse reactions attributable to HAL were seen.
Conclusion: Although photodynamic diagnosis offers a more accurate diagnostic assessment of a bladder tumour, in this trial we have not shown that this translates into reduced recurrence.

B5

Bipolar plasma vaporization and NBI in large non-muscle invasive bladder tumors – better than the standard approach?

B Geavlete, R Multescu, F Stanescu, D Georgescu, M Jecu, P Geavlete
Saint John Emergency Clinical Department, Bucharest, Romania

Objective: This study evaluated the diagnostic accuracy, surgical efficacy and recurrence rates of a new diagnostic and treatment approach consisting of narrow band imaging cystoscopy (NBIC) associated with bipolar plasma vaporization (BPV), by comparison to standard white light cystoscopy (WLC) and transurethral resection of bladder tumors (TURBT).
Material and Methods: A total of 210 patients with bladder tumors over 3 cm were included in the trial based on abdominal ultrasonography, computer tomography and flexible WLC. In one arm, 105 patients underwent WLC and NBIC, followed by BPV, while in the other arm, WLC and TURBT were performed. All NMIBC patients underwent standard Re-TUR and follow-up WLC at 3, 6, 9 and 12 months.
Results: The CIS, pTa, pT1 and overall tumor detection rates in the NBIC-BPV arm were significantly improved for NBIC by comparison to WLC (95% versus 62.5%, 91% versus 78.1%, 95.7% versus 89.2% and 93.4% versus 80.6%). The operation time, catheterization period and hospital stay were significantly shorter for BPV. The obturator nerve stimulation, bladder wall perforation, mean hemoglobin drop and postoperative bleeding were also decreased for BPV. The overall and primary site residual tumors' rates at Re-TUR were significantly lower in the BPV arm (8.4% versus 20.6% and 7.4% versus 18.5%). The

one year recurrence rate was reduced in the BPV arm (18.9% versus 35.1%).
Conclusions: BPV emphasized superior efficacy and reduced complication rate by comparison to TURBT. The diagnostic accuracy of NBIC versus WLC demonstrated significant improvements. Lower Re-TUR and one year recurrence rates were described.

B6

Holmium: YAG laser treatment for superficial bladder carcinoma

NJ Rukin, N Talbot, A Abbas, R Jones, D McDonald, HA Syed
Good Hope Hospital, Birmingham, United Kingdom

Introduction: Using a flexible cystoscope and a Holmium:YAG laser, a 230 nm laser fibre can be used to treat bladder cancer reoccurrences. We evaluate the treatment of bladder tumours, focusing on surgical technique, reoccurrence, complications, patients satisfaction and long term follow up.
Methods: 126 patients underwent 210 procedures. A total of 368 bladder cancers were treated over a 4 year period. All patients were followed up prospectively. Patient demographic, tumour burden, number of treatments, local and distal reoccurrence rate, complications and overall satisfaction scores were recorded prospectively.
Results: Mean age was 73.4 years (49–99), with a male predominance (80%). Mean follow up time was 327 days (0–1168 days). Median number of tumours treatments per treatment was 1 (1–6), with a mean tumour size of 7 mm (2–40 mm). The local tumour reoccurrence rate was 12.5%, but the majority of these were treated successfully with one further laser session. Mean time to reoccurrence was 274 days (77–1168). Only 2 patients (1%) required general anaesthesia. 32% of patients developed further superficial bladder cancers at different sites within the bladder. The majority of these, 80%, were treated successfully with repeated laser treatment. Nominal pain scores were recorded and overall satisfaction was 100%, with minimal complications.
Conclusion: We report the largest series of Holmium:YAG laser ablations in the management of bladder carcinoma. Local reoccurrence rates are low and patients tolerate the procedure well, with high overall satisfaction. Pressures on elective operative theatre sessions are substantially reduced and patients do not require a second hospital attendance for treatment.

B7

Recurrence at 1 year for non-muscle invasive bladder cancer (NMIBC) is significantly lower following Photo-Dynamic Diagnosis (PDD) assisted TURBT compared with good quality white light TURBT (GQ-WLTURBT) – a prospective controlled study

KM Gallagher, S Stewart, CH Anderson, H Lee, R Donat, P Mariappan
Department of Urology, Western General Hospital, Edinburgh, United Kingdom

Introduction: Having previously demonstrated reduced recurrence rate at first follow up cystoscopy (RRFFC) following complete PDD-TURBT compared with GQ-WLTURBT in NMIBC (BJUI 108(suppl 1):6,2010), we went on to analyse the recurrence rates at 1 year (RR1y).

Table for B7

NMIBC risk category	RR1y for GQ-WLTURBT (%)	RR1y for PDD-TURBT (%)	OR (95% CI), p
Low risk: (G1/G2 Ta, single and <3 cm)	23/62 (37.1)	3/41 (7.3)	7.5 (1.9–34.2), $p < 0.001$
Intermediate risk: (G1/G2, Ta/T1, ≥3 cm or multiple and <3 cm)	14/35 (40.0)	6/46 (13.0)	4.4 (1.3–15.4), $p < 0.01$
High risk: G3 (high grade) Ta/T1	16/34 (47.1)	13/33 (39.4)	1.4 (0.5–4.1), $p = 0.5$

Materials and Methods: Two prospectively maintained cohorts were used – (WL-TURBT) had white light TURBT in 2007/8 and (PDD-TURBT) had PDD assisted TURBT for all new tumours from 2009. Tumour features, completeness of resection and recurrence were recorded prospectively on a proforma. GQWL-TURBT was defined as completely resected NMIBC by an experienced surgeon with good cystoscopic mapping, detrusor muscle presence in the specimen and patient receiving Mitomycin-C post-operatively (Euro Urol 57:843–849,2010). Tumours were stratified into the standard low, intermediate and high risk groups. Intravesical BCG was used when indicated. Multivariate logistic regression analysis determined association between variables.
Results: Of 470 new NMIBC, 153 had GQ-WLTURBT and 135 complete PDD-TURBT. The overall RR1y for PDD-TURBT and GQ-WLTURBT were 18.3% and 40.5%, respectively (OR = 3.0, 95% CI = 1.6–5.6, $p < 0.001$). RR1y for risk strata are described in the table:
Conclusions: PDD-TURBT is associated with a significantly lower risk of recurrence at 1 year compared with even GQ-WLTURBT, particularly in low and intermediate risk NMIBC.

B8

Presence of residual disease at early re-TURBT is halved with complete PDD-TURBT compared with good quality white light TURBT (GQ-WLTURBT) and can be predicted by primary tumour features

I El-Mokadem, S Stewart, CH Anderson, H Lee, R Donat, P Mariappan
Department of Urology, Western General Hospital, Edinburgh, United Kingdom

Introduction: Having previously demonstrated that PDD-TURBT has a lower recurrence rate at first follow up cystoscopy compared with the benchmark GQ-WLTURBT (BJUI 108(suppl 1):6,2010) we went on to assess if PDD-TURBT reduces the risk of residual disease found at early re-TURBT in patients with high risk non-muscle invasive bladder cancer (HR-NMIBC).
Materials and Methods: Two prospectively maintained cohorts were used – (WL-TURBT) had white light TURBT in 2007/8 and (PDD-TURBT) had PDD assisted TURBT for all new tumours from 2009. Tumour features, completeness of resection, detrusor muscle status and recurrence were recorded prospectively on a pro-forma. GQ-WLTURBT was defined as completely resected NMIBC by an experienced surgeon with good cystoscopic mapping, detrusor

muscle presence in the specimen and the patient receiving Mitomycin-C (Euro Urol 57:843–849,2010). Early re-TURBT was performed 6 weeks following initial surgery in patients with HR-NMIBC. Only completely resected new tumours were included. Multivariate logistic regression analysis assessed association.
Results: Of 490 new NMIBC, 153 had GQ-WLTURBT and 155 complete PDD-TURBT. With similar proportions requiring re-TURBT in both cohorts, the risk of residual disease were 40.0% and 16.7% following GQ-WLTURBT and PDD-TURBT, respectively (OR = 3.3, 95% CI = 1.0–10.9, p = 0.02). HR-NMIBC tumours with solid/mixed appearance (as opposed to papillary) and those with multiple tumours (>3) were associated with a higher risk of residual disease on regression analysis of the PDD-TURBT cohort.
Conclusions: As the risk of residual disease following complete PDD-TURBT in HR-NMIBC is significantly lower, early re-TURBT appears to be necessary only when primary tumours are solid or multiple.

B9

Challenging urological guidelines – assessing the yield from early re-resections in a contemporary cohort of patients managed with initial transurethral resection (TURBT) by a specialist bladder cancer team

K Thomas, K Chatterton, A Patel, MS Khan, TS O'Brien
Guys Hospital, London, United Kingdom

Introduction: Early re-resection for high risk non muscle invasive bladder cancer (NMIBC) is advocated in guidelines. There are 3 indications:
Repeat resection – first resection incomplete
Restaging – no muscle present
Second TURBT – first resection complete but tumour high grade or T1
Residual tumour is found in up to 60% of cases however the value of re-resection after TURBT performed by bladder cancer specialists is unclear.
Patients and Methods: 93 patients with newly presenting high risk NMIBC undergoing TURBT since 2005. 61 patients underwent single TURBT and 32 early re-resection: repeat resection n = 6; restaging n = 10; second TURBT n = 16.
Results: 24/32 (75%) no tumour on re-resection. Repeat resection: 2/6 upstaged to T2: 4/6 no tumour Restaging: 1/10 CIS: 9/10 no tumour.
Second TURBT: 1/16 upstaged to T2; 2/16 G3T1; 1/16 G2pTa; 1/16 CIS; 11/16 no tumour.
Since June 2006, 23 re-resections for restaging/second TURBT: no patient upstaged; 1 = G3T1; 1 = G2pTa; and 2 CIS. No patient's management changed. 61 patients managed without early re-resection. 22/61 initial G3pTa tumour. 19/22 (86%) no tumour at 3/12. None progressed.
39/61 initial T1. 11/39 excluded (6 cystectomy, 2 metastasis, 3 others). 17/28 given intravesical BCG; 13/17 (76%) recurrence free in first year. 1/17 progressed – an 86 year old.
Conclusion: After initial TURBT by our specialist team, early re-resection has rarely changed management. Understaging has not occurred for 4 years. The results of patients managed with single resection have been excellent. Early re-resection may be best reserved for second opinions, after incomplete resection and for multifocal tumours.

B10

Contemporary oncological and non-oncological outcomes after radical cystectomy with and without ERAS (Enhanced Recovery After Surgery) for urothelial carcinoma (UC)

S Stewart, S Middleton, P Bantanidis, P Mariappan
Department of Urology, Western General Hospital, Edinburgh, United Kingdom

Introduction: Having used multimodal perioperative optimisation with an ERAS regime for cystectomy and described its early post-operative benefits (BJUI 101 Suppl 5:50–51, 2008), we analyse the oncological and long-term outcomes with and without ERAS.
Patients and Methods: All patients undergoing cystectomy from one surgeon's series since 2006 had detailed proformas completed prospectively with peri-operative and follow up variables. Patients were stratified into pre-ERAS (prior to May 2007) and ERAS (May 2007 onwards). Follow up included timed, protocol-driven, cross-sectional and upper-tract imaging and urethroscopy. Analysis excluded patients having laparoscopic cystectomy and continent urinary diversions. Kaplan-Meier graphs and log-rank tests assessed stage stratified survival outcomes for matched-pairs with and without ERAS.
Results: Between 2006 and 2010, 205 operations were performed. None of the patients had rectal injuries or bowel anastomotic leaks. Overall, 184 radical cystectomies were done for UC with pre-operative N0M0 disease and 160 (87.1%) had bilateral extended pelvic lymphadenectomies performed. For UC, the overall survival and disease specific survival (DSS) at 3 years were 59.7% and 71.8%, respectively. DSS for pT0, pTis, pT1, pT2, pT3, pT4, pN0 and pN1 were 100%, 100%, 83.3%, 90.6%, 66.7%, 25%, 79.6% and 33.3%, respectively (log-rank $p < 0.001$). Analysis revealed that ERAS resulted in significantly earlier return of bowel function, ability to tolerate food following surgery and reduced infection rates, with no differences in the DSS or delayed complication rates compared with pre-ERAS patients.
Conclusions: This contemporary series of radical cystectomy and extended pelvic lymphadenectomy reveals ERAS improved surgical outcomes without compromise in oncological outcomes.

B11

Development and implementation of an Enhanced Recovery Programme (ERP) for cystectomy

RE Dale, T Yap, A Lee, S Gujral
King George Hospital, Essex, United Kingdom

Introduction: In the year to April 2010, cystectomy patients at King George Hospital had a median length of stay of 14 days. An Enhanced Recovery Programme (ERP) supported by a multi-disciplinary team (MDT) was introduced aiming to improve patient outcomes, decrease length of stay and increase cost-efficiency.
Methods: The elements of ERP are pre-operative assessment, decreased physical stress of surgery, structured peri-operative management and early mobilization. Following consultation with an MDT consisting of hospital and ward managers, urological surgeons and nurses and pre-operative assessment staff a patient pathway was designed. This involved producing procedure specific care plans, educating staff and improving

processes. A pilot study was implemented to identify potential problems within the pathway. Once these had been resolved the ERP was fully implemented.
Results: The pilot identified several problems which may be used as important learning points for other trusts planning on introducing ERP. Resolution led to full implementation and a decrease in our median length of stay to 8 days. The next stage is consultation with primary care to perform pre-operative investigations in the community.
Conclusion: Implementing ERP brings many benefits. In order for it to be successful it is essential that all members of the urological team are involved from a very early stage in the consultation process. Staff education and clear communication channels between management and clinical staff allow seamless integration of new patient pathways. We have seen a decrease in cystectomy median length of stay from 14 to 8 days.

B12

'Is concomitant carcinoma in situ a relative contraindication to neoadjuvant chemotherapy for muscle invasive TCC bladder?'

S Ahmad, N Vasdev, J Whiteway, A Thorpe
Freeman Hospital, Newcastle upon Tyne, United Kingdom

Introduction: The main aim of Neoadjuvant chemotherapy (NAC) and radical cystectomy (RC) is to reduce occult metastatic disease in patients diagnosed with Muscle Invasive Bladder Cancer (MIBC) Transitional cell carcinoma. However, individual patient response may be variable to NAC. We aim to evaluate the impact of Carcinoma in situ (CIS) on initial TURBT histology on patient response to NAC and determine its impact on clinical prognosis.
Patients and Methods: One hundred and four patients (68 male and 36 female) were diagnosed with MIBC (TCC) over a duration of 7 years (2003–10). Patients received 3–4 cycles of NAC with Gemcitabin and Cisplantin (GC) prior to RC. Patients in group 1 (n = 56) had T2–T4 only and group 2 had T2–T4 + CIS (n = 48). Median duration from initiation of NAC to RC was 19 weeks (Range 14–26).
Results: At a mean follow up of 30 months (Range 12–48), the final histo-papthological results on the RC specimen and radiological responses on comparison of pre and post CT imaging NAC + RC are presented in Table 1.
Our current data suggests that CIS on the initial TURBT histology is associated with a reduction in histo-pathological downstaging (77% group-1 Vs 23% group-2) and radiological disease progression (8% group-1 Vs 19% group-2).
Conclusions: Our data indicates that Carcinoma in situ on initial TURBT histology is associated with a poorer histo-pathological and radiological response in patients being treated with NAC + RC for muscle invasive TCC Bladder. Longer patient follow up and larger patient numbers are required to validate this further.

Table 1 for B12: Response rates

	Total number of patients	Regression of disease (%/N) [T0, Ta, T1]	No change (%/N) [T2]	Progression of disease (%/N) [T3, T4, Cis in group 1)
Histo-pathological				
Group 1: T2–4	56	77% (43)	11% (6)	12% (7)
Group 2: T2–4 + CIS	48	23% (11)	60% (29)	17% (8)
Radiological				
Group 1: T2–4	56	79% (44)	13% (7)	8% (5)
Group 2: T2–4 + CIS	48	25% (12)	56% (27)	19% (9)

B13

Cytochrome P450 activity may discriminate a subpopulation with better than expected survival among muscle invasive bladder cancer patients

BE Ayres, S Buch, D Gillatt, M Romkes, RA Branch, RA Persad
Bristol Urological Institute, United Kingdom

Introduction: Despite recent surgical and oncological advances muscle invasive bladder cancer has a relatively poor prognosis. Bladder cancer is strongly associated with environmental and occupational factors which the cytochrome P450 enzymes (CYP) influence. We investigated the potential prognostic role of these enzymes.
Patients and Methods: Consented patients with non-muscle invasive (Ta & T1; n = 44) and muscle invasive (T2, T3, T4; n = 43) transitional cell carcinoma of the bladder were investigated for CYP activity.
Each subject received three oral drugs simultaneously: mephenytoin (100 mg), debrisoquine (10 mg) and dapsone (100 mg) as in vivo probes of CYP2C19, CYP2D6 and CYP3A activity respectively. Median follow up was for 72 months (2–311). For each drug the metabolic ratios were determined using High Pressure Liquid Chromatography.
Results: Invasive bladder cancers with below median CYP3A activity had poorer median survival times (14 months (5–39 95% CI) vs. 37.5 months (23–95% CI) $p < 0.04$). Conversely, below median CYP2D6 activity was associated with an increased median survival time (39.5 months (95% CI 14–145) vs. 12 months (95% CI 7–32), $p < 0.02$). Significant differences in survival times were not detected among non-muscle invasive bladder cancer cases. A subset analysis of the invasive group revealed a seven fold increase in median survival in cases with the combination of the low-risk phenotype (low CYP2D6 and high CYP3A activity).
Conclusion: This study suggests that muscle invasive bladder tumours associated with high CYP2D6 and low CYP3A activity have a different pathophysiology and natural history. Such data could be of immense clinical importance in managing this challenging disease.

BJUI SUPPLEMENTS

Wednesday 22 June
Paper Session C

14:00–16:00 Hall 3A/B
EDUCATION AND TRAINING
Chairmen: Mr Sam Liu & Miss Gillian Smith
Papers C1–C10

C1

What factors influence medical students career choice?

S Rosen, C Yap, AM Sinclair, I Pearce
Manchester University Medical School, United Kingdom

Introduction: Medical graduates are required to choose their career pathway at an earlier stage than ever and it is increasingly apparent that many now decide on their chosen career whilst an undergraduate.

We set out to determine which factors influence this decision.

This is particularly relevant in the current climate since over the past 5 years, the number of medical undergraduates considering a career in Urology has declined from 25% to less than 10%. It is in the interest of BAUS to determine which factors influence such decisions.

Methods: 150 students attending a Urology Revision Day completed an anonymous questionnaire Students were asked to rate particular influencing factors out of a maximum of 10.

Results: See the table.

Table for C1

Influencing factor	Score
Specialty themed lectures	5.2
Specialty themed PBL	6.5
Specialty themed curriculum	5.3
Specialty themed Projects	3.9
Clinical exposure	2.5
Mentor	6.2
Specialty reputation	5.3

Discussion: Medical students are influenced by several factors when deciding their future career.

Contact with a personal or academic mentor, and specialty themed PBL sessions are the most influential factors. Clinical exposure appears to be a minor factor, whilst specialty themed lectures, projects and curricula are moderately influencing factors.

Conclusion: Fewer medical undergraduates are considering Urology as their postgraduate career. There are clearly defined influencing factors that could be utilised in order to reverse this trend and we would recommend that BAUS offer support to members to enhance the specialty's standing in the undergraduate arena.

C2

Collecting feedback on consultants' communication skills. A pilot test amongst urology consultants

AM Sinclair, B Bridgewater, S Sizmur, J Shipway
Stockport NHS Foundation Trust, United Kingdom

Introduction: It is increasingly recognised that communication skills are as important as medical expertise as components of competence. A validated and discriminatory tool to assess doctors' interpersonal skills is required. This pilot was designed to develop and test new patient experience measures around consultants' communication skills, to investigate methods of data collection and provide results at an individual clinician level.

Methodology: Patients aged 18+ attending outpatient clinics were asked to complete a questionnaire. Five methods of data collection amongst patients were tested, including paper-based and electronic methods. Feedback was also collected from consultants and clinic staff.

Results: A new set of patient experience measures was developed. The tool was found to be statistically robust and capable of differentiating consultant's communication skills. It was found to be highly reliable (Cronbach's alpha >0.9) and unidimensional. Differential effects were found due to data collection method, patient age, first or follow-up appointment and waiting time. The minimum number of ratings required to achieve a physician-level reliability of at least 0.8 using this tool would be 32 per consultants'.

Conclusions: Robust measurement of a consultant's communication skills in a urology outpatient setting is possible (n = 693). High levels of skill were found overall, though one consultant had a significantly lower communications score compared to the others. Processes for identifying patients seen by individual consultants need to be improved to enable long-term sustainability. The next phase of work will focus on development of a performance support framework that is owned and driven by individual clinicians.

C3

Undergraduate urology: does it prepare doctors adequately?

SM Malde, K Sharma
Kent and Canterbury Hospital, United Kingdom

Introduction: Undergraduate medical education in the UK has changed. Medical schools should provide the core knowledge required for clinical practice, with the Foundation programme building upon this. However, studies have suggested that both undergraduate and postgraduate exposure to urology has declined. A standardised curriculum for urology has recently been suggested for all European medical schools as a solution. This study aimed to evaluate the views of newly-qualified UK doctors regarding undergraduate urology training.
Patients and Methods: An online questionnaire was emailed to all UK Foundation doctors in August 2010 (total 4339).
Results: 285 responses were received, giving a confidence level of 90% with an error rate of 5%. 26.7% of respondents had no undergraduate urology attachment, with a further 30.9% receiving one week or less. 69.5% felt that more time should be devoted to urology teaching, with only 17.1% believing that their undergraduate training was adequate. Most (67.7%) thought there was not enough practical skills experience, with 60.2% never having inserted a female urethral catheter. 77.5% felt that a basic urological skills course would be beneficial, with 54% wanting a longer clinical attachment. Interestingly, 70.4% of those surveyed will not complete a urology rotation during the foundation programme, and only 15.5% have considered a career in urology.
Conclusion: This survey highlights the wide variation in undergraduate urology teaching across the UK, and demonstrates that the foundation programme does not necessarily compensate for this. A national basic urological skills course may provide a standardised way to improve education across the country.

C4

Are foundation doctors ready to manage patients in urinary retention?

S Venugopal, A Farrier, J Carter, A Lavasani Rad, R Manikandan
Royal Hallamshire Hospital, Sheffield, United Kingdom

Introduction: Urinary retention is the commonest urological emergency presenting to A&E departments and the patient is usually assessed by A&E junior medical staff. We wanted to assess the preparedness of F1 doctors at the end of their foundation year to move on into this role, where they will be expected to assess and manage these patients.
Patients and Methods: 93 FY1 doctors across two training deaneries undertook a questionnaire based assessment of knowledge relating to urinary retention and experience in performing simple urological procedures including DRE and urethral catheterisation.
Results: 90% of the respondents did not have urology experience. Only 29.1% had performed more than 10 male catheterisation procedures, and only 5.5% had performed female catheterisation. Similarly, the confidence in interpretation of digital rectal examination findings relating to the prostate was also quite low (12.5%). Less than 75% of the respondents were competent in the initial management of uncomplicated acute urinary retention. Only 7% were aware of high pressure chronic retention as an entity but none were aware of its appropriate management.
Conclusion: FY1s were not competent to safely manage urinary retention at current level across both regions. Confidence levels are also low. The implication is that better Urology induction for FY1 and FY2 doctors, as well as training that includes male and female catheterisation and rectal examination in a skills-based training environment is needed.

C5

Workplace based assessments, are we using them well?

SA Ali, M Bussey, K O'Flynn, I Eardley
St James Hospital, Leeds, United Kingdom

Introduction: The ISCP (Intercollegiate Surgical Curriculum Programme) was introduced in 2007. It heralded a shift in surgical training from the traditional apprenticeship model, to a system where competence is assessed regularly within the workplace. Central to ISCP is the recording of workplace based assessments, such as PBA (procedure-based assessment) and DOPS (Direct Observation of Procedural Skills). These are assessments 'for' learning rather than assessments 'of' learning and central to their purpose is detailed feedback from trainer to trainee. The aim of this study was to assess the quality of the feedback recorded on ISCP.
Methods: The anonymised ISCP portfolios for 170 core and specialty urology trainees working in 16 deaneries were analysed. Over a three months period 469 DOPS and 592 PBAs were recorded and the presence and quality of assessors' feedback were evaluated according to the presence of five criteria:

- Encouragement through positive language
- Including strengths
- Raising appropriate development needs
- Suggestions for appropriate corrective action
- Providing explanations

Results: Feedback was recorded in 49% and 67% of PBA and DOPS respectively. In those assessments where feedback was recorded, positive language was used in 83% in PBAs and 70% in DOPS. Strengths were recorded in 53% for both tools. Developmental needs, suggestions for development and detailed explanation were recorded in 25%, 26%, 29% for PBAs and 24%, 23%, 19% for DOPS respectively.
Conclusion: This study highlights the lack of feedback being recorded on ISCP and the paucity of good quality feedback when it was given.

C6

An audit of UK trainees' exposure to dedicated infertility training: how good is that training?

BR Grey (1), S Minhas (2), KJ O'Flynn (3), SR Payne (1)
(1) Central Manchester University Hospitals NHS Foundation Trust, United Kingdom
(2) University College London Hospitals NHS Trust, United Kingdom
(3) Salford Royal NHS Foundation Trust, United Kingdom

Introduction: The management of primary and secondary male-factor infertility are

important components of urological training in the UK and essential knowledge for the FRCS(Urol). The outcome from the exam suggests that trainees are uncomfortable with the management of the infertile couple which led us to question how good their training is in this part of the curriculum.
Patients and Methods: UK urological trainees were sent a SurveyMonkey online questionnaire to determine their level of exposure to the management of an infertile male within an infertile couple, and their experience of surgery appropriate to the male partner's management. Crucially, we were interested to know how many UK trainees were bothered whether they were involved in this aspect of urology.
Results: 176 (51.6%) trainees responded with 3.6% being assured of exposure to training in infertility management. 19% were exposed to both male and female partners during assessment and 27% felt their training was either appropriate to CCT or adequate for subsequent clinical practice. 49% had no experience of vasectomy reversal. 23.3% would be confident in counselling couples about alternatives to it. Only 8% of trainee urologists felt comfortable offering vasectomy reversal as part of their future Consultant practice, however, 87.5% felt that gynaecologists are inadequately trained to manage the infertile male.
Conclusions: UK urological trainees are poorly equipped for Consultant practice involving primary male-factor infertility or secondary infertility following previous vasectomy. Training in this aspect of urology needs significant re-structuring to ensure the best possible care for our patients in the future.

C7
Ranking of urology registrar placements within a region. An SAC pilot
E Oates, KJ O'Flynn, DC Shackley
Salford Royal Hospitals NHS Foundation Trust, United Kingdom

Background: There is a growing pressure to have an effective, universal & equitable quality assurance system for trainee placements. This would ideally allow ranking of posts. There are 2 reasons why this may be useful: (1) For providing evidence to support decisions on which posts to remove if NTN's are cut; (2) To provide a set of weighted standards which each department can use to help educational quality improvement (QI).
Methods and Materials: An assessment tool was created with separate blinded trainer, trainee & programme director (TPD) components. The trainee element was developed from the new proposed JCST annual trainee assessment form. Closed questions/rating scales were used to reflect compliance with GMC training standard domains & subjective assessments of various parameters. Higher scores could be obtained by the unit being pro-active with educational activities. This tool was submitted (with regional agreement) to all the training units & trainees and the results analysed and coordinated by the TPD.
Results: Responses were obtained from all trainees and all training units within a single large region. Open declaration of the results was felt, by trainers, to be the best approach to enable QI.
Conclusion: This tool provides a repeatable, objective straightforward assessment of training posts taking unit, trainee and TPD perspectives into account. It is possible to rank training units. It may be useful to incorporate this into data required for the annual ARCP. The scoring could be even more discriminatory if there were a requirement to provide supporting evidence.

C8
Who sees what in outpatients?
BV Vissamsetti, SR Payne, IA Pearce
Manchester Royal Infirmary, United Kingdom

Introduction: Outpatients is the front door of most urological departments and there seems to have been an alteration in the balance of clinical activity towards consultant service provision. This study seeks to quantify the numbers of patients seen by various grades of staff over a 5 year period and to understand what implications this has for service planning.
Materials and Methods: Collection of new and follow-up patient attendances was recorded prospectively, together with numbers of non-attenders and cancel and rebooks, for two consultant practices between 2005 and 2010. Data were analysed to highlight trends in clinic activity dependent upon levels of experience.
Results: 7034 patients attended the two consultant's clinics, 2450 new patients and 4584 follow ups. 68% of the new (N) and 74% of the follow up (F) patients were seen by consultants alone (4N and 9F per clinic). 32% & 26% were seen by the junior staff with the numbers per clinic being 3 and 5 for SpRs, 3 and 6 for senior clinic fellows and 3 and 5 for junior clinical fellows. There was variation between individuals in the same grade but no clear variation in service activity dependent upon SpR seniority.
Conclusions: There is a clear decreasing trend in junior activity in the outpatient environment with sequentially decreasing throughput during the study period. The contribution of clinical fellows mirrors SpR throughput and is dependent upon experience. Trainees are probably seeing appropriate numbers of patients to enhance their urological experience but inadequate numbers to provide appropriate training for consultant practice.

C9
Are urology trainees cost-effective to NHS trusts?
S Pisipati, H Hashim, AG Timoney
Bristol Urological Institute, Southmead Hospital, United Kingdom

Introduction: There is a view that urology registrars spend most of their time in training activities and contribute little service to trusts. There is a potential reduction in training numbers and a possible threat that urology trainees might be replaced by nurse-practitioners. We set out to determine training versus service activities of urology trainees in the Southwest.
Methods: Daily activities performed by six urology trainees were recorded over a two-week period. Year of training, number of operations performed, new and follow-up patients seen in clinic, ward referrals reviewed and supervision status were documented. All activities performed with direct or indirect supervision were considered to be part of training, whilst those performed independently were classed as service provision.
Results: Trainees were involved in 3.9 theatre sessions, 1.75 each of clinics and administrative sessions, 0.75 MDT, 0.9 study sessions per week. 44.5% (n = 73) operations were performed independently. 4% (n = 11) of 272 patients seen in out-patients, 11% (n = 74) of 674 patients

seen on ward rounds and 4.8% (n = 4) of 83 ward referrals seen were discussed with trainers. Trainees managed catheter problems, co-ordinated an evening board round and provided telephone advice to junior colleagues, general practitioners and specialist nurses, all unsupervised. The average income generated per trainee for out-patient and investigational activity is £2833/- per week.

Conclusion: Over 50% of theatre activity performed by urology trainees was supervised. Majority (94%) of all measurable non-theatre activities, however, were performed independently. Our survey demonstrates that there is considerable service provision by trainees and they are cost-effective.

C10

Operative experience in urology at CCT 2007–2010

H Ecclestone, L Clarke, I Eardley, KJ O'Flynn
Salford Royal NHS Foundation Trust. Manchester, United Kingdom

Introduction: The purpose of this study was to assess the operative experience of Urology trainees applying for CCT. Secondary aims included analysis of regional variations in surgical exposure and the impact of EWTD on training since its introduction in 2008.

Methods: All Urology trainee logbooks (total 205; 53 from 2010) submitted for consideration of CCT from 2007–2010 were analysed. For each trainee, core procedures performed (supervised and performed) were recorded. From 2010 the procedure list was expanded to include subspecialty procedures. For each 'index' operation the national mean and range was calculated. Analysis by region was also performed as was a comparison between the experience of trainees pre and post introduction of EWTD.

Results: See the table.

Although only two years has elapsed since the introduction of EWTD, operative experience of trainees at CCT does not appear to have changed. Regional variation in trainee operative experience was negligible.

Discussion: Urological training is adequately delivering most requirements of the curriculum. Exposure to some areas of the curriculum is light (e.g. Female Urology and Andrology), reflecting shared practice (Urogynaecology) and subspecialisation. The lack of significant regional variation in the experience of trainees highlights broad uniformity of urological training throughout the UK. It may be premature to assess the impact of EWTD on Urological training from this data.

Table for C10

	Operative exposure at CCT (*2010 logbooks only)		
	Mean	Range	Std Dev
TURP	190	60–516	61
TURBT	186	50–403	66
Lap nephrectomy (any)	10	0–97	14
Nephrectomy (any)	22	2–67	13
Semi-rigid ureteroscopy (any)	119	14–465	74
PCNL	18	0–125	20
Radical cystectomy	11	0–70	11
Radical prostatectomy	15	0–133	20
Radical orchidectomy*	19	0–39	9
Female stress incontinence ops*	10	0–143	22
Intravesical botulinum toxin*	8	0–78	16
Nesbitt's procedure*	2	0–10	3