BJUI

BAUS Annual Meeting, 17–20 June 2013, Manchester Central

Paper Sessions

Tuesday 18 June
Paper Session A
1400–1530 Charter 1
PROSTATE CANCER DIAGNOSIS
Chairs: Professor Martin Gleave & Mr William Cross
Papers A1–A9

Wednesday 19 June
Paper Session B
1330–1430 Charter 1
GENERAL UROLOGY
Chairmen: Mr Peter Malone & Mr Toby Page
Papers B1–B7

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PROSTATE CANCER DIAGNOSIS
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Papers A1–A9

A1

3D Visualisation of biopsy trajectory and its clinical impact in routine diagnostic TRUS guided prostate biopsy

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Introduction and Aims: Transrectal ultrasound (TRUS) guided biopsy remains the gold standard in prostate cancer diagnosis however prostate remains perhaps the only solid organ where biopsy is "blind". Traditionally the surgeon would prepare a "mental image" of the prostate and target his biopsy cores evenly to map out the prostate as best as possible. This method is not only random but also open to significant operator bias and no real way of checking for accuracy.
In contrast, a 3D USS reconstruction of the prostate allows for visualisation of each biopsy core trajectory ensuring accuracy, completeness and most importantly brings quality control to the biopsy protocol.
The aim of our study was to assess the impact of 3D USS in routine diagnostic prostate biopsy and its effect on cancer detection rates.
Methods: We compared a case matched cohort of all consecutive patients attending for diagnostic prostate biopsies before and after the introduction of the 3D USS system (Part 1 of the study). All biopsies were performed by a single experienced surgeon using the exactly the same standard 16 core biopsy protocol in both cohorts.
We then compared cancer yield in 50 consecutive cases of positive prostate biopsies in the 2D vs. the 3D group (Part 2 of the study)
Results: The results are tabulated as follows

Part 1

Parameter	2D USS* n = 110	3D USS*** n = 110	P value Student's t test
Age in years Mean (Range)	64 (46–90)	65 (46–84)	NS
PSA ng/ml Mean (Range)	9 (0.5–70)	10 (0.5–59)	NS
Prostate volume, cc Mean (Range)	47 (16–160)	51 (20–145)	NS
DRE positive	33	36	
Family history positive	10	13	
Cancer detection rate	34	**50**	**0.04**

*BK Medical systems, *** Sonoace X8, Medison/ Koelis

Part 2

Parameter	2D USS n = 55	3D USS n = 55	P value
Gleason grade			NS
≤6	61	56	
7	28	32	
≥8	11	12	
% Of cores involved	8.6	**35.66**	**0.03**

Conclusion: Visualisation of each biopsy trajectory significantly increases cancer detection rates and allows for a more through sampling of the prostate. Not only does this have a role in targeted biopsies but also in routine diagnostic biopsies.

A2

Repeat prostate biopsy strategies after initial negative biopsy: meta-regression comparing cancer detection of transperineal, transrectal saturation and MRI guided biopsy

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Introduction: There is no consensus on how to investigate men with negative

transrectal ultrasound guided prostate biopsy (TRUS-B) but ongoing suspicion of cancer. Three strategies used are transperineal (TP-B), transrectal saturation (TS-B) and MRI-guided biopsy (MRI-B). We compared cancer yields of these strategies.

Methods: Systematic literature search identified studies investigating biopsy diagnostic yield in men with at least one negative TRUS-B and ongoing suspicion of cancer. Age, PSA, number of previous biopsy episodes, number of cores at re-biopsy, cancer yield, and Gleason score of detected cancers were extracted. Meta-regression analyses compared these data.

Results: Forty-six studies were included (4,657 patients). There were no significant differences in PSA or number of previous biopsy episodes. The mean number of biopsy cores obtained by TP-B and TS-B were significantly greater than MRI-B. Cancer detection rates were 29·8%, 35·7%, and 37·6% for TS-B, TP-B, and MRI-B respectively. Meta-regression analysis showed that TP-B and MRI-B had similar cancer detection but both performed better than TS-B. In a sensitivity analysis incorporating previous biopsy episodes (36 studies) this was not maintained, resulting in no difference in cancer detection between the groups. There were no significant differences in median Gleason scores detected.

Conclusions: In the re-biopsy setting, it is not clear which strategy offers the highest cancer detection rate. TP-B and MRI-B may detect more cancers than TS-B. MRI-B achieves this with fewer cores than TP-B. Well–designed prospective cohorts with standardised outcome measures are needed to compare these three modalities and define an optimum re-biopsy approach.

A3

Repeat prostate biopsy after initial benign standard biopsies – comparison of 3 advanced techniques; MRI/TRUS fusion transperineal, transperineal sector, extensive transrectal prostate biopsies (MD Anderson protocol)

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Introduction: Large cohorts of men are faced with uncertainty following previous benign biopsy with ongoing concern due rising PSA or changes suspicious for cancer in previous biopsies. We compared detection rate of 3 prostate biopsy techniques performed in 2 centers: MRI/TRUS fusion transperineal prostate (MTTP), transperineal sector (STP) and extensive transrectal prostate biopsies (MD Anderson protocol; MDA)

Materials and Methods: 738 patients were identified retrospectively: 201 patients underwent MTTP biopsies, 188 patients STP biopsies and 349 MDA biopsies. Patients undergoing MTTP biopsies had a multiparametric MRI prior to the biopsy: suspicious lesions on MRI were contoured and the image was fused to a live transrectal ultrasound image for guidance of lesion biopsies using BiopSeeTM; STP biopsies were taken dividing the prostate into six sectors for guidance. MDA biopsy involved sampling of peripheral and transition zones as well as standard sextant biopsies. Low grade disease was defined as Gleason $\leq 7(3 + 4)$ and high grade disease as Gleason $\geq 7(4 + 3)$.

Results: There was no statistical difference between the groups in relation to mean age, mean PSA and mean prostate volume. The mean number of cores for MTTP was 27 ± 5 and for STP 34 ± 16. Cancer detection rate in the MTTP group was 107/201(53%), 79/188(42%) in the STP group and 106/243(30%) in the MDA group ($p = 0.0005$). Detection rate of high grade disease was 40/107(37%), 22/106(21%) and 20/79(25%) respectively($p = 0.031$).

Conclusions: Our data suggests MTTP has a higher cancer detection rate and higher proportion of high grade disease compared to transrectal and transperineal biopsy techniques without MRI guidance.

A4

Could use of MRI in men referred for risk of prostate cancer result in a reduction of biopsy related morbidity when compared to the ERSPC and PCPT risk calculators for decision to biopsy?

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Introduction: The widespread use of PSA testing has increased referrals for suspected prostate cancer with numerous strategies proposed to more accurately predict clinically significant cancer. We compared the European Randomised Study of Screening for Prostate Cancer (ERSPC) and Prostate Cancer Prevention Trial (PCPT) risk calculators with the use of MRI to aid the biopsy decision.

Methods: 217 men referred via the '2 week wait' pathway were offered a multi-parametric MRI prior to a discussion regarding biopsy. The ERSPC and PCPT risk calculators were applied to compare how many patients would have undergone biopsy using a calculator. The predicted biopsy-related morbidity was calculated using data from the ProtecT study (Rosario et al, 2012.)

Results: Data for formal risk calculation was available for 167 men. Of these, 104(52.2%) chose biopsy after a discussion incorporating MR findings into prostate cancer risk assessment. 70/104(67.3%) had cancer, of which 49/70(70%) was clinically significant. Use of the PCPT or ERSPC calculator to inform the biopsy decision would have resulted in 166(99.4%) and 147(88%) of men having a biopsy.

Use of MRI to inform the decision to biopsy resulted in fewer biopsies than would have been suggested by either calculator.

The reduction in biopsies using an MRI based approach is predicted to have avoided biopsy-related morbidity by the absolute numbers in the table below.

Table (for A4)

	PCPT		ERSPC	
	Present	Moderate/Severe	Present	Moderate/Severe
Pain	27.0	4.5	18.7	3.1
Fever	10.9	3.4	7.5	2.4
Haematuria	40.8	3.8	28.3	2.7
Haematospermia	57.4	16.5	39.8	11.4
Haematochezia	22.8	1.6	15.8	1.1

Conclusions: Use of the risk calculators compared to pre-biopsy MRI would result in significantly higher numbers of men undergoing prostate biopsy and increased average numbers of cores taken. This leads to higher costs and a predicted increase in biopsy related morbidity.

A5
Multiparametric MRI in the diagnosis of prostate cancer: a validation study of the European Consensus Meeting Risk Scoring System

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Background: A European Consensus Meeting has recommended a 1–5 scoring system for suspicion of prostate cancer on multi-parametric MRI (mpMRI). This study assessed whether greater suspicion of cancer on mpMRI correlated with greater detection of clinically significant cancer.
Methods: 182 men with clinical suspicion of prostate, who scored 3 ('equivocal'), 4 ('likely tumour') or 5 ('very likely tumour') on the 1–5 scale of suspicion of prostate cancer on mpMRI, underwent transperineal targeted biopsies of suspicious lesions. The linear trend between suspicion of prostate cancer on mpMRI (3, 4 or 5) and the detection of clinically significant cancer was assessed using Chi-squared trend test. Clinically significant cancer was defined by at least one biopsy core containing maximum cancer core length ^{3}4 mm and/or Gleason Grade ^{3} 3 + 4.
Results: Population mean age was 63 years old, median PSA was 6.7 ng/ml and median number of targeted cores taken per lesion was 5.
As the score of suspicion of prostate cancer on mpMRI increased, the detection of clinically significant cancer also increased ($p < 0.0001$, X_2 *trend test*). Relative to an MRI score of 3, the odds ratio of detecting clinically significant cancer for an MRI score of 4 was 3.0 [95% CI 1.4–6.6] and for an MRI score of 5 was 9.6 [95% CI 3.9–23.8] (Table 1).
Conclusion: mpMRI is a useful imaging modality for the detection of clinically significant prostate cancer. The higher the suspicion of prostate cancer on mpMRI, the more likely clinically significant cancer is detected.

Table 1 (for A5). Number of men with clinically significant cancer based on mpMRI score

MRI Score	CSC	No CSC	Odds of detecting CSC	Odds ratio of detecting CSC relative to odds for MRI score 3
MRI score 3	13	32	0.4	1.0
MRI score 4	43	35	1.2	3.0 [95% CI 1.4–6.6]
MRI score 5	47	12	3.9	9.6 [95% CI 3.9–23.8]

CSC = Clinically significant cancer

A6
The use of anterior lobe prostate biopsies and multi-parametric MRI to detect prostate cancer in men with negative standard or saturation biopsies and rising PSA

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Introduction: The use of multi-parametric MRI scans has significantly improved the detection of prostate cancer in men with disease located in the anterior lobe that has been undetected on previous standard trans-rectal ultrasound guided prostate biopsies. We suggest the combination of MRI and focussed anterior lobe prostate biopsies as a valid tool for detecting cancer in men with rising PSA and previous negative histology. Anterior lobe prostate biopsies are performed under general anaesthetic via the perineum with trans-rectal ultrasound guidance.
Patients & Methods: Patients who underwent anterior lobe prostate biopsies following previous negative standard or saturation biopsies and multi-parametric MRI scans were identified and their results analysed to determine detection rate of prostate cancer using these techniques.
Results: 35 patients who had anterior lobe prostate biopsies and subsequently underwent multi-parametric MRI scans were identified. 32 had a prostate tumour detected on MRI in the anterior lobe. 26 of these patients had positive histology on anterior lobe prostate biopsy. These results produced a sensitivity and specificity of 100% with a positive predictive value of 81.25%. 6 patients had negative anterior lobe prostate biopsies following positive MRI scans. 3 patients with normal MRI scans also had negative anterior lobe prostate histology.
Conclusion: The combination of trans-perineal anterior lobe prostate biopsies and multi-parametric MRI scanning is a valuable technique to diagnose prostate cancer in men with difficult to detect but highly suspected disease which can easily be implemented in any urology unit.

A7
Does Prostate Histoscanning™ accurately predict tumour volume and position in men undergoing radical prostatectomy?

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Objective: Prostate HistoscanningTM (PHS) is a novel technology in which a transrectal ultrasound probe scans the prostate. PHS software characterises the 3 dimensional radiofrequency data and produces signatures for various tissue morphologies. The objective of this independent study was to evaluate the role of PHS in the preoperative assessment of tumour volume and

pathological stage when compared to radical prostatectomy (RP) histology.
Patients and Methods: 41 patients scheduled for RP were screened for recruitment between July 2011 and Jan 2012. 31 patients were eligible and 24 were suitable for final analysis. The index test was PHS, immediately prior to scheduled RP. The reference test was histological analysis of whole mount RP specimens.
Results: A total of 144 prostate sextants from 24 patients were examined (Pearson coefficient for all sextants 0.14). No correlation was observed between PHS and pathology for total cancer volumes (Pearson coefficient of -0.099). The sensitivity and specificity of PHS in detecting foci >0.5 ml were 37% and 71%, respectively. The Pearson correlation coefficient for index lesion volume identified at pathology versus PHS was -0.065. PHS failed to accurately locate EPE with only 4.9% of the sextants matched for its presence.
Conclusions: Previous manufacturer sponsored studies have shown positive results in highly selective patients. This independent study assessing the value of PHS in routine clinical practice reveals that PHS fails to identify the total tumour volumes, tumour volumes by prostate sextants, the location and volume of index lesions, and the presence and location of EPE.

A8

Urinary Engrailed-2 (EN2) levels and their correlation with tumour volume and pathological tumour stage in men undergoing radical prostatectomy for prostate cancer

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Objective: To assess the relationship between urinary Engrailed-2 (EN2) levels prior to radical prostatectomy with tumour volume and pathological characteristics in radical prostatectomy specimens. EN2 is homeodomain containing transcription factor secreted by prostate cancer cells and not by normal prostate cells and belongs to HOX genes family.
Materials and Methods: Early morning first pass urine samples (10 ml) without prior digital rectal examination were collected from 57 patients and stored at −80°C. EN2 levels were measured using an enzyme-linked immunoabsorbent assay. Tumour volume in the prostatectomy specimens was determined histologically.
Results: 57 men undergoing RP in one urological cancer network were evaluated. EN2 was detected in 85% of RP patients. EN2 correlated with tumour volume (but not total prostatic volume) in a linear regression analysis, with increasing pathological T stage and margin positivity. Using three 'cutoff levels' of tumour volume (0.5 ml, 1.3 ml and 2.5 ml) to define 'significant disease', men with 'significant disease' had markedly higher levels of urinary EN2 ($p < 0.001$ for each cut off level).
Conclusions: Urinary EN2 levels closely correlated with tumour volume in prostatectomy specimens. Levels of urinary EN2 may be useful in predicting tumour volume in men with prostate cancer by potentially identifying men with small volume 'insignificant' disease. This may help in critical decision making in the management of PC patients when deciding between active surveillance vs radical treatment. This study justifies a larger multicentre evaluation of urinary EN2 levels as a biomarker of PC significance.

A9

D'Amico risk stratification outperforms published active surveillance selection criteria from the USA as a way to identify patients with indolent prostate cancer in a relatively unscreened UK population

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Introduction: Eligibility criteria for active surveillance are based on data from screened populations where stage migration renders the patient cohort dissimilar to UK patients. We evaluate the performance of 6 different methods to identify indolent disease in a UK cohort.
Methods: 848 patients (including 445 patients with Gleason 3 + 3 prostate cancer on initial biopsy) underwent robotic radical prostatectomy between July 2007 and October 2011. Follow up data was available for 841. 5 published criteria to identify insignificant disease in candidates for active surveillance were identified and the ability to predict insignificant disease and low grade organ confined disease compared with D'Amico risk stratification (Gleason score 6, no grade 4/5, $PSA^2$10, cT1/T2a) using univariable Cox regression. AIC (Akaike information criterion) and BIC (Bayesian information criterion) were used to compare the 'goodness of fit' of the six non-nested models. Area under the curve (AUC) of the receiver operator characteristic curve was calculated.

Results (for A9):

Approach	Patients with Gleason 3 + 3 on biopsy meeting criteria for AS n(%)	Insignificant cancer, updated definition					Organ-confined low-grade cancer				
		Sens	Spec	PPV	NPV	AUC	Sens	Spec	PPV	NPV	AUC
Tosoian 2011	46 (10.3)	0.17	0.94	0.28	0.89	0.55	0.14	0.95	0.52	0.75	0.55
Adamy 2011	157 (35.3)	0.45	0.76	0.21	0.91	0.60	0.43	0.79	0.43	0.79	0.61
Van den Bergh 2009	67 (15.1)	0.22	0.91	0.26	0.89	0.56	0.20	0.93	0.51	0.76	0.56
Whitson 2011	184 (41.4)	0.51	0.69	0.19	0.91	0.60	0.48	0.72	0.39	0.79	0.60
Soloway 2010	114 (25.6)	0.35	0.84	0.23	0.90	0.59	0.30	0.85	0.43	0.77	0.58
D'Amico 1998	286 (64.3)	0.56	0.69	0.21	0.92	0.63	0.58	0.75	0.47	0.83	0.67
Any criteria	305 (68.5)	0.69	0.50	0.17	0.92	0.60	0.70	0.54	0.36	0.83	0.62
All criteria	45 (10.1)	0.14	0.96	0.33	0.89	0.55	0.12	0.97	0.62	0.75	0.55

Conclusion: D'Amico performs best at predicting insignificant (modified definition) or Gleason 6 organ confined disease according to AIC, BIC and AUC, however, all 6 methods have a poor PPV. Our dataset included only 2 classically defined insignificant tumours of less than 0.5 cm^3 rendering further analysis impossible. This reflects differences between our UK cohort and screened USA and European cohorts in which these criteria were developed and validated. Low AUR values underline the need for a biomarker of indolent prostate cancer, and justify further investigation with confirmatory transrectal biopsy, transperineal biopsy or MRI prior to embarking on an active surveillance program.

BJUI Wednesday 19 June Paper Session B 1330–1430 Charter 1 GENERAL UROLOGY Chairmen: Mr Peter Malone & Mr Toby Page Papers B1–B7

B1

8 years experience of Holmium enucleation of the prostate

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Introduction: Holmium enucleation of the prostate (HoLEP) is an established surgical technique for men with bladder outflow obstruction secondary to benign prostatic enlargement (BPE). We present our experience of performing HoLEP over an 8year period at a single institute. Peri-operative variables were recorded including age, operation time, enucleation weight and length of stay. A prospectively recorded database was maintained. We attempt to identify predictive factors for complications and increased length of stay.
Methods: Prospective data was collected for patients undergoing surgery from 2004 – September 2012 with retrospective data analysis. All patients were operated on by a single surgeon experienced in this technique and beyond the initial learning curve for this procedure.
Results: Overall, 458 patients were treated by HoLEP surgery. Mean follow-up was 5.2 years (3–90 months). Mean age was 69.4 years old and mean enucleation weight was 82 g (8–367 g). Overall complication rates were acceptable at 15.6% with the urinary incontinence (5.2%), urethral stricture (3.0%) and infection (1.5%) most common. Retreatment rates were low at 4.1%. There was no correlation with advancing age and increased risk of incontinence, of the 47 patients over the age of 80 only 2 patients (4.2%) were incontinent. However, this subgroup were more likely to fail to void and were more likely to result in increased length of stay (>2days).
Conclusion: HoLEP appears safe and effective treatment for BPE. It appears to have a low retreatment rate. Age is not a predictive of complications although it does impact on length of stay.

[Correction added on 4 June 2013 after first online publication: The author list has been updated to include O Nehikare.]

B2

The efficacy of a mobile lithotripsy service: A one-year review of 222 patients

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Introduction: Extracorporeal shock wave lithotripsy (ESWL) is the management of choice for ureteric and renal stones ≤20 mm with stone clearance rate (CR) up to 89% (EAU guidelines). We determined whether such a high success rate could be applied to centres using mobile ESWL by reviewing the performance at our centre that provides such a service.
Patients and Methods: Between July 2011 and July 2012, 222 patients (mean age: 52.5 years, range: 19–89) underwent 1–5 sessions of ESWL for ureteric and renal stones (mean size: 15 mm, range 4–22). Stone clearance was regarded for residual fragment ≤2 mm after completion of sessions.
Result: A total of 110/222(49%) patients were stone clear. 198(89%) were radiopaque, 24(11%) were radiolucent with CR of 48% and 63%. Regarding sizes, 36(16%) were 1–5 mm, 144(65%) were 5–10 mm, 28(12%) were 10–15 mm, 8(4%) were 15–20 mm and 6(3%) were >20 mm with a CR of 61%, 55%, 18%, 13% and 50%. 173(78%) were renal stones and 49(22%) ureteric with a CR of 49% and 51%. For kidney stones, 15(9%) were in the upper, 32(18%) in the mid, 75(43%) in the lower pole and 51(30%) in the pelvis with a CR of 52%, 59%, 49% and 41%. For ureteric stones, 32(65%) were in upper, 10(20%) in mid and 7(15%) in lower ureter with CR of 47%, 70% and 43%.
Conclusion: Our results demonstrated that the mobile ESWL performance is significantly poorer than expected. This may be related lack of clinical ownership. We believe such a service should be permanently placed on-site.

B3

The complications of laparoscopic renal surgery, a ten year review. On behalf of the BAUS section of endourology

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Introduction: The BAUS laparoscopic nephrectomy database has been running since the year 2001 and all UK Consultants are invited to submit data prospectively. These data provide a valuable insight into complication rates for these commonly performed procedures.
Patients and Methods: Data were obtained from the BAUS cancer registry for laparoscopic renal surgeries completed between 1st January 2002 and 31 December 2011. Prior to 2010, complications were recorded as free text. From 2010, only

limited defined complications were recorded. All free-text complications recorded were retrospectively classified according to the post-2010 system to allow for analysis of the entire data set.
Results: Data for 13,118 laparoscopic nephrectomies, carried out at 175 centres, were analysed. The median patient age was 63. The median operating time was 155 minutes.
The overall complication rate was 18.2%. This fell from 24% in 2002 to 14.3% in 2011. 30-day mortality was 0.6% (67 deaths).
The intra-operative complication rate was 2.9%. Intra-operative bleeding was reported in 216 cases (1.6%), 36 bowel injuries (0.3%), 25 splenectomies (0.2%) and 9 liver injuries (0.1%) and 3 pancreatic injuries were reported. Intra-operative complication rates pre- and post-2010 were comparable. 6.2% of operations were converted to open procedures.
From 2010 the most common post-operative complication was chest-infection (2.2%), followed by ileus (1.4%) and wound-infection (1.3%). Analysis of post-operative complications prior to 2010 is ongoing; complication rates pre- and post-2010 appear to be comparable once reclassified.
Conclusion: Laparoscopic renal surgery is safe, and major complications are rare.

B4
The prevalence of depression and anxiety in men undergoing active surveillance for prostate cancer

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Introduction: Active surveillance (AS) is an attractive treatment option for men diagnosed with low risk prostate cancer. These men commonly express concern about living with an untreated cancer, and greater anxiety and depression are associated with transfer to potentially unnecessary radical treatments. We report the largest cross-sectional survey to date, completed in December 2012, evaluating depression and anxiety in AS.
Materials & Methods: 338 men on AS completed the Hospital Anxiety and Depression Scale (HADS) and a demographic questionnaire. Descriptive statistics and regression analyses were conducted.
Results: Preliminary analysis from the first 181 men are reported. Mean depression and anxiety scores were 3.31 (SD = 3.569) and 4.63 (SD = 3.791), respectively . 14.9% (n = 24) of cases met the HADS criteria (score ≥8) for clinical depression and 22.36% (n = 36) for anxiety. General population rates of anxiety and depression for men aged over 65 are 8% and 6% respectively. Regression analysis showed that those who left school before the age of 15 had higher depression scores than those who completed secondary education (p = 0.022). Older men had lower levels of anxiety (p = 0.069). Relationship status was a significant predictor of anxiety (p = 0.05).
Conclusion: Men on active surveillance are almost twice as likely to be depressed and three times as likely to be anxious as the general population of men aged over 65. Given the high incidence of prostate cancer and the increasing use of AS, these results suggest the need for a framework to better identify and manage their psychological distress to minimize unnecessary radical intervention.

B5
Bacteraemia during TURP: is it more prevalent than previously thought?

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Introduction: The incidence of bacteremia post TURP with antibiotics prophylaxis is reported at 1%. In a separate study, we have shown a statistical association between urological procedures and infective endocarditis. We therefore sought to investigate the rate of bacteraemia during TURP in a contemporary series, using contemporary culture and molecular methods to detect bacteraemia.
Methods: We conducted an ethically approved prospective cohort study of patients undergoing TURP. A focused medical history was obtained. All patients received 160 mg IV gentamicin prophylaxis. 20 ml of blood was obtained at 5–6 different time points [pre-procedure, when the urethral catheter was removed in urinary retention patients, 5 minutes into the procedure, 10 minutes into the procedure, 20 minutes into the procedure, and 0–10 min post-procedure]. 15 ml of the blood was used for the 'culture-method' and it was inoculated into BACTEC[a] Plus Aerobic and Anaerobic culture vials, incubated for 10 days and subcultured on day 10. Bacterial identification was done using 16 S PCR. The remaining 5 ml of blood was used for the 'molecular method' and it was used to extract bacterial DNA, using the MolYsis Complete5 kit by Molzym™. Broad-range 16 S PCR (Mastermix 16 S by Molzym™) and Multiplex PCR (Plex-ID by Abbott™) were performed. Sequencing and mass-spectrometry were respectively used for bacterial identification. A pre-procedure urine sample was also cultured. A follow-up telephone interview at 3 months was conducted.
Results: 50 patients were recruited with a total of 276 blood samples. The mean age was 71.1 years. 16 patients developed asymptomatic bacteraemia (32.0%), with 38 out of the 276 blood samples (13.8%) being positive. The main organisms detected were *P. aeruginosa*, *E. faecalis* and *S. agalactiae*. Out of the 16 patients with bacteraemia, 12 had pre-operative bacteriuria, with the main organisms being *P. aeruginosa* and *E. faecalis*. 2 patients had symptomatic bacteraemia (*S. epidermidis* and *E. faecalis*) in the immediate post-operative period. 13 out 50 patients (26%) required therapeutic antibiotics within 3 months of the procedure. 8 of these patients (61.5%) were bacteraemic during their procedure.
Conclusion: This study shows a higher incidence of bacteraemia peri-TURP than previously reported. Bacteraemia occured in spite of the antibiotics prophylaxis regimen. This increased bacteraemia rate may be owing to the design of the study. The significance of transient bacteremia in relation to more serious infective complications like infective endocarditis is not known.

B6
Histology following paediatric circumcision for phimosis: Is this useful?

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Introduction: The foreskin is routinely sent for histology by Urologists performing circumcision in children at our institution.

There are no guidelines to recommend this practice. This study was undertaken to assess:
a) The pathology underlying phimosis in paediatric patients.
b) Proportion of BXO as a cause and correlation of clinical and histological diagnosis.
c) Usefulness of foreskin histology in this group.
Materials and Methods: The clinical notes and histology of the foreskin of all paediatric patients undergoing circumcision from 2008 to 2012 was reviewed retrospectively.
Result: In the 5-year period from 2008 to 2012, a total of 212 paediatric patients underwent circumcision for phimosis. Of these, 180 (85%) had Chronic Inflammation, 21 (10%) had BXO, 5 (2%) had Fibrosis without Inflammation and 6 patients (3%) had a normal histology. Twenty six (14%) patients thought to have BXO pre-operatively had chronic inflammation only. BXO was clinically diagnosed correctly in all cases. Although BXO was clinically over diagnosed, it was not missed. Three patients (1%) of the 212 presented with meatal stenosis and required surgery. Two had BXO whilst one did not.
Conclusion: BXO caused phimosis in 10% of our paediatric patients. The majority (87%) had inflammation or fibrosis only. In 3% of cases, the histology was normal. Since the histology does not change the follow-up protocol or the management and since dysplasia or malignancy in children is unknown, there is no merit in sending the foreskin for histology in paediatric patients.

B7

Comparative oncologic effectiveness of surgery and radiotherapy in prostate cancer: an analysis of mortality outcomes in 34,515 patients treated with up to 15 years follow-up

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Introduction & Objectives: No high quality data exists that compares survival outcomes of surgery versus radiotherapy in the treatment of prostate cancer; this large observational study aimed to fill that void.
Patients & Methods: 34,515 men were treated for prostate cancer throughout Sweden with either surgery (n = 21,533) or radiotherapy (n = 12,982). The dataset has >98% completion on age, PSA, year of treatment, clinical TNM stage, Gleason/ WHO grade, county of treatment, marital status, Charlson co-morbidity index (CCI), and educational/ socioeconomic status. Patients were categorized by risk group, age, and CCI; cumulative incidence curves for prostate-cancer-mortality (PCM) and other-cause-mortality (OCM) were derived. Competing risks regression hazard ratios for radiotherapy versus surgery were computed with and without adjustment.
Results: PCM became a larger proportion of overall mortality as risk group increased for both the surgery and radiotherapy cohorts; for localized prostate cancer patients survival outcomes favored surgery, and for locally advanced/ metastatic patients treatment results were similar. The only cohort in which radiotherapy had superior PCM outcomes was those aged 65–74 with non-localized disease.
Conclusions: Surgery may be superior to radiotherapy in terms of prostate cancer survival for the majority of men with localized prostate cancer. Radiotherapy appears at least equivalent to surgery for men with non-localized disease. Age and co-morbidity also seem to play a part in the comparative effectiveness of treatments for prostate cancer.