Poster Session 1: Prostate Cancer (1)
June 27, 2016 0800-0930

MP-01.01

Percent Gleason pattern 4 on prostate biopsy in patients with Gleason 7 (3 + 4) prostate cancer does not predict upstaging to T3/T4 at radical prostatectomy

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Introduction and Objectives: Gleason (GL) score on prostate biopsy and radical prostatectomy (RP) specimens is a strong predictor of survival in patients with prostate cancer (PC). Patients with GL7 (3 + 4) on biopsy are known to have worse PC-specific survival than those with GL6 (3 + 3) and better outcomes than patients with GL7 (4 + 3). Relative volume of GL 4 vs. GL 3 in prostate biopsies is now routinely reported, but its effect on outcomes is unclear. To explore this, we assessed the predictive power of percent GL4 for adverse pathologic events at RP.

Methods: Cases were collected from January 2008 to August 2015. Patients with GL6 or GL7 (3 + 4) on pre-RP biopsy were assessed and we explored clinicopathologic predictors of adverse pathology on RP defined as: extracapsular extention (ECE), seminal vesicle (SVI), or bladder neck invasion (BNI). For men with GL 7 (3 + 4) on biopsy, we then evaluated the association between percent GL4 and adverse RP pathology. Univariable and multivariable logistic regression was performed using SPSS.

Results: 1475 RPs were performed on biopsy-proven GL6 or GL7 (3 + 4) PC from 2008 to 2015; detailed biopsy data, including percent GL4 was available for 776/931 patients with GL7 (3 + 4). Median patient age for the entire cohort was 61 years (interquartile range (IQR) 55-65) and pre-RP prostate-specific antigen (PSA) was 5.5 ng/ml (IQR 4-7.9). ECE, SVI, and BNI were present in 27.9%, 4.1%, and 3% of the cohort, respectively. On multivariable analysis, patients with GL6 vs. 7(3 + 4) had 40% less odds of upstaging to pT3 or pT4 on RP when taking into account age, PSA, percent positive cores, and clinical stage (OR 0.6, 95% CI 0.43-0.82, p=0.002). For patients with GL7 (3 + 4), the percent GL4 score was not predictive of poor pathologic outcomes.

Conclusions: Percent GL4 does not appear to discriminate those patients with GL 7 (3 + 4) PC with adverse pathological findings on RP. GL4 may not be a reliable indicator of patients who will succeed active surveillance or focal therapy for PC.

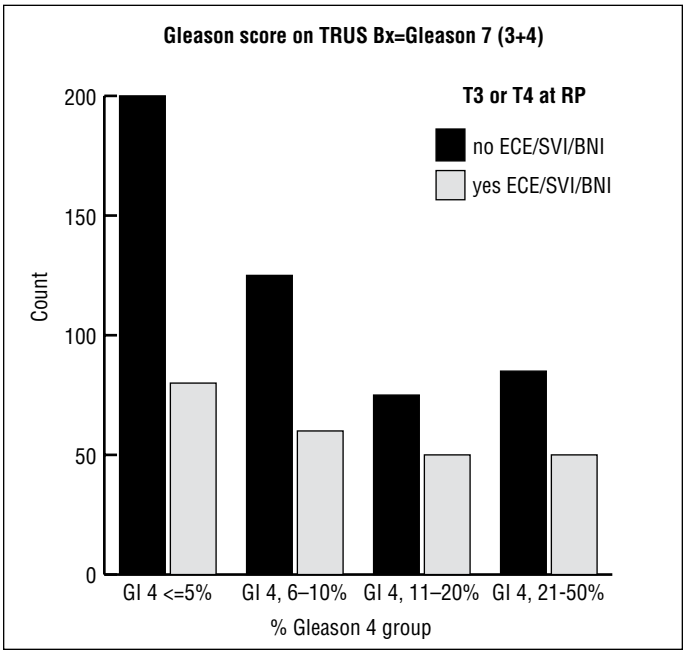

Fig. 1. MP-01.01.

MP-01.02

Time of occurence of metastasis influences overall survival in treatment-naïve prostate cancer

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Introduction and Objectives: Novel therapies have evolved the way to treat advanced prostate cancer. However, patients eventually die from metastatic disease. Little is known about the impact of time of occurrence of metastasis on overall survival (OS). Therefore, we divided patients with metastatic prostate cancer into three groups: 1) patients who presented with metastasis within three months of initial diagnosis (de novo-M); 2) patients who were free of metastasis initially, but developed metastasis more than six months prior to castration resistance (castration-sensitive prostate cancer with metastasis-CSPC-M); 3) patients who developed metastasis within six months of becoming castration-resistant or after (castration-resistant prostate cancer with metastasis-CRPC-M). Our objective was to clarify the impact of the timing of metastasis on OS.

Methods: From 2008 to 2015, we identified 169 prostate cancer patients treated in our service. These patients included 69 de novo-M, 44 CSPC-M, and 56 CRPC-M. We analyzed patients' characteristics and OS.

Results: After a median followup of 5.86, 10.97, and 12.57 years for de novo-M, CSPC-M, and CRPC-M, respectively, 34.8% of patients with de novo-M, 47.7% in CSPC-M, and 44.6% in CRPC-M had deceased. There was a significant decrease in OS when metastases were present at diagnosis (median 5.72 years) compared to patients with CRPC-M (11.2 years) and a trend to better survival than CSPC-M (9.55 years). The difference observed in time to metastasis between CSPC-M and CRPC-M did not lead to a difference in OS. De novo-M showed a longer survival from occurrence of metastasis to death when compared to CSPC or even CRPC, although reaching a castration-resistant stage earlier than the other groups.

Conclusions: Our results suggest that timing of the development of metastasis and corresponding initiation of treatment are important prognostic factors. Early intervention and diagnosis of M1 disease is important in advanced prostate cancer.

MP-01.03

Impact of visceral fat volume and fat density on biochemical outcome after radical prostatectomy and postoperative radiotherapy

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Introduction and Objectives: To assess the predictive value of visceral adipose tissue (VAT) and adipose tissue density after both radical prostatectomy (RP) and adjuvant or salvage external beam radiotherapy (EBRT).

Methods: We randomly selected 201 patients treated with RP and EBRT between 2005 and 2015. VAT and subcutaneous adipose tissue volumes were manually contoured and corresponding tissue densities in Hounsfield units (HU) calculated. Time to biochemical recurrence (BCR) was calculated using the Kaplan-Meier method and comparisons were made using the log-rank test. Cox regression analysis was done for multivariate analysis.

Results: Median time to BCR or last followup was 32 months. In univariate analysis for BCR, VAT volume and fat density were both associated with a better outcome (p=0.025 and p=0.024, respectively), as well as seminal vesicle involvement (p=0.024). Body mass index (BMI) was not predictive of BCR (p=0.32). In a multivariate model including seminal vesicle involvement, both a VAT volume above the median (HR 2.5, 95% CI 1.1-5.7; p=0.03) and a VAT density (HR 2.4, 95% CI 1.1-5.1; p=0.028) above the median remained predictive for a better biochemical outcome. Adjusting for BMI did not significantly change the model.Only when the model included all risk factors grouped together according to the CAPRA-S did the VAT volume (p=0.93) and VAT density (p=0.75) lose their predictive value. No correlation between adipose tissue volume or density and diabetes were found (p>0.4), but there was a statistically significant difference (p=0.03) in the mean VAT volume when comparing the 18 patients on metformin (25.8 cc; SD: 18.8 cc) vs. patients without metformin treatment (18.0 cc; SD: 13.9 cc). Neither subcutaneous fat (SAT) volume nor SAT density was predictive of biochemical outcome (p=0.5 and p=0.7, respectively).

Conclusions: In both univariate and multivariate analysis, patients with both a larger VAT volume and density had a better biochemical outcome. The interaction between prostate cancer aggressiveness and visceral fat volume and density needs to be further evaluated to provide a better understanding of this disease.

MP-01.04

Justifying resources used for multiparametric magnetic resonance imaging with transrectal ultrasound targeted prostate biopsy (MRI/TRUS-TB) in a district general hospital

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Introduction and Objectives: Evidence is emerging to support the use of magnetic resonance imaging with transrectal ultrasound (MRI/TRUS)-targeted biopsy (TB) for detection of clinically significant prostate cancer (csPCa).[1,2] In our trust, MRI/TRUS-TB has significantly increased the workload for histopathologists, necessitating justification for use of this biopsy technique. We compare the clinical significance and the National Institute for Health and Care Excellence (NICE) risk group classification[3] of each tumour when reviewing histology from systematic TRUS-guided biopsy (STB) and TB results separately. According to NICE recommendations, the NICE risk group classification of a tumour significantly affects the management of patients with prostate cancer.

Methods: Each patient underwent a 10-core systematic prostate biopsy in addition to a 2-4-core TB for suspicious MRI lesions. 53 MRI/TRUS-TBs from March 2014 to December 2015 were included in the analysis. Histological outcomes of STB, TB, and combined outcome were recorded. MRI/TRUS-TB accounted for 53/385 (14%) of all prostate biopsies within this period.

Results: Detection rates for csPCa increased with addition of MRI/TRUS-TB (STB 32/53, 60 %; TB 33/53, 62%; combined 38/53, 72%). Some csPCa was missed by STB or TB alone. The NICE risk group classification[3] was increased in some patients when TB and STB results were reviewed (higher risk TB than STB 7/42, 17%; same risk 31/42, 74%; higher risk STB than TB 5/42, 12%). The addition of TBs led to a 29% (12/42) increase in the final NICE risk group classification[3] and Gleason upgrading in 36% (15/42).

Conclusions: In our trust, TB combined with STB increased NICE risk group classification[3] in 29% of patients, and upgraded Gleason grade in 36%. This difference in biopsy outcome would alter the management advice given to these patients. Targeted biopsies of suspicious areas on MPMRI are justified, as they affect the management of patients with prostate cancer.

1. Bacoa E, Rudb E, Eria LM, et al. A randomized, controlled trial to assess and compare the outcomes of two-core prostate biopsy guided by fused magnetic rsonance and transrectal ultrasound images and traditional 12-core systematic biopsy. *Eur Urol* 2016;69:149-56. http://dx.doi.org/10.1016/j.eururo.2015.03.041
2. Moore CM, Robertson NL, Arsanious N, et al. Image-guided prostate biopsy using magnetic resonance imaging-derived targets: A systematic review. *Eur Urol* 2013;63:125-40. http://dx.doi.org/10.1016/j.eururo.2012.06.004
3. NICE guidelines [CG175]. Prostate cancer: Diagnosis and management. Staging: 1.2.12. Published date: January 2014. www.nice.org.uk/guidance/cg175/chapter/1-Recommendations#assessment-2. Accessed April 14, 2016.

MP-01.05

Prostate cancer patients' preferences for information and decision support: Where, when, and how?

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Introduction and Objectives: We aimed to determine the population of prostate cancer patients' preferences for information and decision support: where, when, and how.

Methods: Surveys were conducted in British Columbia, Alberta, and Saskatchewan in 2014 and 2015. A random sample of 55% of the prostate cancer patients in each provincial registry diagnosed in late 2012 was surveyed.

Results: Provincial response rates were 46-55%, total N=1007. Across provinces, mean age was 69 years. Between diagnosis and treatment decision, preferred information sources were urologists (90%), family physicians (85%), and radiation oncologists (58%); 73% wanted printed information and 58% wanted it on the internet. Barriers to obtaining information from physicians included not having enough time (27%), worrying about time (21%), and worrying about asking too many questions (15%). Barriers to obtaining information from books/internet, respectively, included uncertain quality (37/46%), unclear if personally applicable (39/41%), and poor search skills (31/20%). Recommended facilitators for providing information included a person to guide its acquisition (71%), providing printed information (69%), and someone to answer questions: in person (77%), over the phone (53%), or via email (43%). Even if access was easy, 27% would not want information from the internet and 13% would not want any printed information. Regarding decision-making, 18% would have liked more help with their decision, though half of that group (53%) felt well-informed. 77% of all respondents either used decision support or would have wanted to if they had known about it. Recommended timing for decision support included before meeting any specialists (11%), at the urologist visit (31%), and after all specialist visits before the decision is made with a doctor (35%).

Conclusions: Most prostate cancer patients want information and decision support, but vary in where, when, and preferred medium. Optimal

support needs to be multifaceted and flexible, with urologists playing a central role.

MP-01.06

Testosterone replacement therapy in patients with known prostate cancer: Impact on oncologic outcomes

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Introduction and Objectives: Both hypogonadism and prostate cancer have increasing prevalence with age. However, because of the relationship between prostate cancer and androgen receptor activation, testosterone replacement therapy (TRT) among patients with known prostate cancer has been approached with caution. We seek to add to the growing body of literature on the safety of TRT in this setting with one of the largest multimodal reviews of men treated with TRT following localized treatment or active surveillance (AS) for prostate cancer.

Methods: We identified a cohort of 83 hypogonadal men with prostate cancer who were treated with TRT. These included 50 men treated with radiation therapy (RT), 22 with radical prostatectomy (RP), eight with AS, one with cryotherapy, and one with high-intensity focused ultrasound (HIFU). We evaluated changes in prostate-specific antigen (PSA), testosterone, hemoglobin, the rate of biochemical recurrence (BCR), and PSA velocity (PSAV).

Results: Median patient age was 75.5 years and median followup was 41 months. We found an increase in both testosterone ($p<0.001$) and PSA ($p=0.001$) levels in the entire cohort, but when analyzed by risk group, only low-risk prostate cancer patients had a statistically significant increase in their PSA ($p=0.006$). PSA did also increase in the AS patients, however, no patients were upgraded to higher Gleason score on subsequent biopsies, and none have yet gone on to definitive treatment. We did not have any cases of BCR among RP patients, but three RT patients (6%) experienced BCR by 2006 Phoenix criteria.[1] It is unclear whether these were related to TRT or reflected the natural biology of their disease.

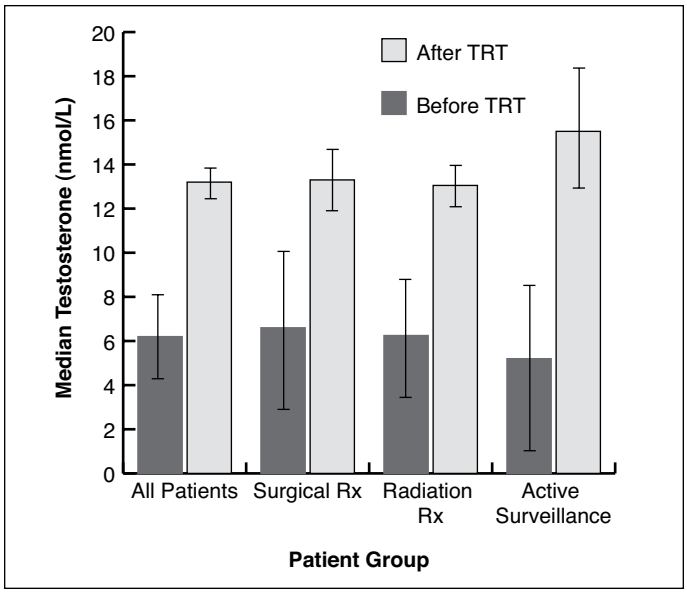

Fig. 1. MP-01.06. Bar graph of serum testosterone levels before and after TRT for each treatment modality. Error bars represent 95% CIs.

We calculated the mean PSAV to be 0.001, 0.12, and 1.1 ug/L/yr for the RP, RT, and AS groups, respectively.

Conclusions: Our study supports the hypothesis that TRT is oncologically safe in hypogonadal men following definitive prostate cancer treatment, as well as those on AS of low-risk cancer.

1. Roach M 3rd, Hanks G, Thames H Jr, et al. Defining biochemical failure following radiotherapy with or without hormonal therapy in men with clinically localized prostate cancer: recommendations of the RTOG-ASTRO Phoenix Consensus Conference. *Int J Radiat Oncol Biol Phys* 2006;65:965-74. http://dx.doi.org/10.1016/j.ijrobp.2006.04.029

Table 1. MP-01.06. TRT and PSA parameters in 83 patients with CaP classified by primary treatment modality and D'Amico risk stratification

Type of treatment	D'Amico risk	n	Time Rx to TRT (median months)	Duration TRT (median months)	Initial median T (mmol/L)	Final median T (mmol/L)	Initial PSA (median)	Final median PSA	Median PSAV (ng/ml/yr)	BCR (%)
Radical prostatectomy	All	22	15	48	6.60	13.3	undetectable	undetectable	0	none
	Low	3	33	55	6.2	11.75	undetectable	0.016	0.0014	none
	Intermediate	11	13	37.7	7	15.4	undetectable	undetectable	0	none
	High	8	15	59.5	6.25	15.1	undetectable	undetectable	0	none
Radiotherapy	All	50	45	36.5	6.25	13.05	0.125	0.18	0.0175	6.00%
	Low	10	61	40	7	15.5	0.185	0.145	0.0039	5.26%
	Intermediate	19	42	47	6.95	10.6	0.06	0.062	0	0.00%
	High	21	43	23	5.6	14.7	0.18	0.49	0.1025	9.52%
Active surveillance	Low	8	n/a	33	5.2	15.5	3.9	5.2	0.51	NA
HIFU	Low	1	4	42	5	1.3	0.26	1.2	0.31	
Cryotherapy	High	1	17	9	4.9	NA	1.1	3.2	0.8	

MP-01.07

Prognostic factors in radical prostatectomy and permanent seed brachytherapy for low- and intermediate-risk prostate cancer: A comparative study

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Introduction and Objectives: To compare the outcomes between radical prostatectomy (RP) and permanent seed prostate brachytherapy (PB) in patients with low- and low-intermediate-risk prostate cancer from a single tertiary care centre.

Methods: Patients were selected from our institute's internal database, based on preoperative selection criteria from the NCCN guidelines (2015) for low- and intermediate-risk patients. No patient had received any neoadjuvant androgen-deprivation therapy. The endpoint was biochemical recurrence (BCR) or any salvage treatment for both RP and PB at 48 ± 4 months after treatment. The biochemical relapse threshold was set at prostate-specific antigen (PSA) ≥0.5 ng/mL for PB, and two PSA values of ≥0.2ng/mL for RP. Patients from both treatment groups were compared using non-parametric tests. A binary logistic regression analysis was performed to determine an association of treatment and pretreatment factors with a BCR at 48 months.

Results: 575 patients were included in this study; 254 were treated with RP and 321 with PB. Patients treated with RP were younger (mean 61 years vs. 64 years) and more likely to have cT1-stage cancers (83% vs. 73% for PB), but had a higher mean percentage of positive biopsies (44% vs. 34% for PB) and were more likely to be diagnosed with a Gleason 7 score (30%) than patients treated with PB (20%). BCR occurred in 54 patients (21.2%) in the RP group and in 66 patients (20.6%) in the PB group (p=0.24, Chi-square test). Based on univariate and multivariate logistic regression analyses, younger age, higher percentage of positive biopsies and initial PSA were predictive of BCR. Treatment modality was not predictive in either univariate (p=0.56) or multivariate (p=0.42) analyses.

Conclusions: Using closely related cut-off values for BCR, both RP and PB appear to result in equal outcomes at four years post-treatment.Clinical T-stage, age, percentage of positive biopsies, and Gleason score were predictive of BCR.

MP-01.08

Cancer control outcomes of robot-assisted radical prostatectomy for high-risk, clinically localized prostate cancer: Prospective analysis of 124 consecutive men from the University of Alberta

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Introduction and Objective: Approximately 20-30% of men are diagnosed with high-risk, clinically localized prostate cancer (HR-CLPC) at initial presentation. Radical prostatectomy and external beam radiation therapy with androgen-deprivation are standard primary treatment options for HR-CLPC. Over the past decade, robot-assisted radical prostatectomy (RARP) has supplanted open radical prostatectomy as the preferred surgical approach. However, limited data are available examining the efficacy of RARP for HR-CLPC. Our aim was to examine cancer control and perioperative outcomes in men who underwent RARP for HR-CLPC.

Methods: A prospective analysis of data from the University of Alberta Radical Prostatectomy Database was performed. Between September 2007 and January 2013, 124 consecutive men underwent RARP for D'Amico classification HR-CLPC. Cancer control outcomes were biochemical recurrence (BCR) and salvage therapy (ST) rates. BCR was defined as a prostate-specific antigen (PSA) ≥0.2 ug/l, followed by a subsequent confirmatory value or initiation of ST. ST was defined as receipt of radiation therapy (RT) or hormone therapy (HT) >6 months after surgery and/or in the presence of BCR. Perioperative outcomes were 90-day complication and health care utilization rates. The Kaplan-Meier method was used to estimate BCR and ST. Multivariable Cox regression analysis was used to determine predictors of BCR. Statistical tests were two-sided (p<0.05).

Results: Evaluable data were available for 124 men (100%). The median followup duration was 37.9 months (range 0.4-82.7 months). Mean age and body mass index (BMI) were 61.9 years (range 47.0-78.0 years) and 29.1 kg/m^2 (range 18.1-45.0 kg/m^2), respectively. 83 men (67%) had preoperative biopsy composite Gleason score ≥8. 114 (92%) and 100 (81%) men had >pT2c and pN0 disease, respectively. The five-year freedom from BCR rate was 65.0%. The five-year freedom from ST rate was 75.1%. Multivariable Cox regression analysis showed that pTstage and pNstage were independently associated with BCR (≤pT2 vs. ≥pT3: HR 0.32, 95% CI 0.15-0.69; p=0.004; pN0 vs. pN1; HR 0.23; 95% CI 0.10-0.54; p<0.001). No patient (0%) required blood transfusion. 29 patients (23%) experienced one or more complication within 90 days of surgery. 20 (16%) and one (1%) patients returned to the emergency room and were readmitted to hospital within 90 days of surgery, respectively.

Conclusions: RARP conferred acceptable intermediate-term cancer control and perioperative outcomes for men with HR-CLPC. These data support the continued use of RARP for HR-CLPC. Extended followup of this cohort with assessment of clinical endpoints is needed.

MP-01.09

Positive surgical margin rates during the robot-assisted laparoscopic radical prostatectomy learning curve of an experienced laparoscopic surgeon

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Introduction and Objectives: Experience with laparoscopic radical prostatectomy (LRP) is hypothesized to hasten the robot-assisted laparoscopic radical prostatectomy (RARP) learning curve. In this study, we describe the positive surgical margin (PSM) rates, as well as other outcomes during the RARP learning curve of a single surgeon with significant prior LRP experience.

Methods: Participants were consecutively enrolled from March 2012 to April 2015 if they underwent RARP by a single surgeon. The RARP procedure was performed with a standardized transperitoneal technique and the RARP postoperative course followed a standardized clinical pathway. The primary outcome of this study was the impact of case quartile on margin status. Multivariate logistic regression of case number relative to margin status was performed, with established predictors of margin rates included as co-predictors (T3 stage, prostate-specific antigen (PSA), body mass index (BMI), and prostate weight). Secondary outcomes included the impact of case quartile on pT2 and pT3 PSM rates, operative time, estimated blood loss, and length of hospital stay. The most recent quartile was used as the reference standard. Odds ratios and t-testing were used where appropriate and statistical significance was defined as p<0.05.

Results: A total of 400 consecutive patients were included in this study, with a median patient age of 63.8 years and a median PSA of 6.9 ng/ml. Overall mean operative duration was 187.2 minutes and mean estimated blood loss was 240.9 ml. A total of 157/400 (39%) patients had pT3 disease and the remainder (243/400, 61%) had pT2 disease. There were 82 positive margins. The pT3 PSM rate was 33.3% and the pT2 PSM rate was 11.9%. The first quartile of cases had an odds ratio for overall, pT3, and pT2 positive margins of 1.74 (95% CI 0.90-3.36; p=0.1), 1.45 (0.62-3.41; p=0.39), and 1.69 (95% CI 0.62-4.58; p=0.30) respectively. When looking at the second or third quartiles relative to the most recent quartile, no significant differences were noted. Multivariate logistic regression suggested that case number did not predict probability of PSM (Exp[B]=0.998, 95% CI 0.994-1.002; p=0.3). The first quartile operative time was a mean of 207.4 minutes, decreasing to 179.2 by quartile four (p<0.0001). The first quartile estimated blood loss was a mean of 255.1 ml and this decreased to 213.6 ml by quartile four (p=0.0064).

Conclusions: Even when controlling for co-predictors, a statistically significant learning curve for PSM rate was not demonstrated in this study. We hypothesize that previous LRP experience may reduce the RARP PSM learning curve.

MP-01.10

The use of graphical displays of quality of life information to improve patient understanding when deciding on prostate cancer treatment

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Introduction and Objectives: In prostate cancer, treatment-related decisions are complex and may impact post-treatment quality of life (QOL). Decision aids for patients have been shown to be effective in preparing patients for treatment-related decision-making and in reducing post-decisional regret. Additionally, pictographs have been shown to increase understanding of medical information. We investigated the use of two different graphical displays of QOL information in the context of a prostate cancer decision aid.

Methods: Patients with low- and intermediate-risk, localized prostate cancer were recruited for study participation. A previously studied decision aid was adapted to include QOL data displayed via a line graph showing temporal trends and a pictograph showing proportional risks of QOL impairment. In a semi-structured interview, participants used Likert scales to rate graphical information formats with respect to usefulness and ease of understanding. They were then asked to verbally explain the information to a third party to judge understanding. Single-sample and paired t-tests were used to evaluate responses.

Results: Participants found both graphical formats useful and easy to understand. Differences between mean subjective usefulness ratings (9.1 vs. 8.2; p=0.13) and mean subjective understanding ratings (9.5 vs. 9.0; p=0.26) of pictograph and line graph formats did not reach statistical significance. Third-party assessment of patient understanding of the informational content also did not differ significantly between graphical formats (p=0.36). Common themes from qualitative feedback include the feeling of being overburdened with information and the possible preference of pictograph information over "scientific" line graphs, with the preference to review line graphs if desired.

Conclusions: Graphical displays of health information may assist in patient understanding and decision-making with patients' preferences possibly favouring pictographs of proportional risk.

MP-01.11

Impact of posterior urethrovesical reconstruction on early return to continence after robot-assisted radical prostatectomy: A randomized, controlled trial

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Introduction and Objectives: Urinary incontinence post-radical prostatectomy has a significant negative impact on quality of life. As 12-month continence rates range from 85-95%, few patients are continent in the early postoperative period. Posterior reconstruction (PR) of Denonvilliers' musculofascial plate may improve early return to urinary continence, though prior studies have shown mixed results, with varied definitions of continence, differing surgeon experience, lack of randomization, and insufficient statistical power. We compared the PR vs. conventional anastomosis during robot-assisted radical prostatectomy (RARP) in a randomized, controlled trial (RCT).

Methods: Patients with localized prostate cancer scheduled for RARP were prospectively recruited and randomly allocated to PR or conventional anastomosis. Patients were blinded and the surgeon was informed just prior to the case to minimize bias. All cases were performed by a single high-volume surgeon at a tertiary centre. The Expanded Prostate Cancer Index Composite Short Form (EPIC-26) survey was used at baseline and two, three, four, six, eight, and 12 months postoperatively. Continence was defined as 0-1 safety pads per day. The trial is powered to detect a significant improvement in continence of 40-75% at three months. Followup interviews were done via telephone.

Results: Recruitment occurred from April 2014 to July 2015, with a total N=164. Six-month followup data are available on 55 patients in the PR group and 42 in the control group. At two, three, four, and six months, use of pads for the intervention group and the control group at 0-1 per day (continence) was 36.5% and 37.5%, 60.7% and 60.5%, 72.6% and 65.7%, and 83% and 76.5%, respectively.

Conclusions: Interim analysis of this RCT suggests a trend towards PR being more effective than conventional anastomosis in terms of early return to continence following RARP, especially approaching the fourth month. Continuing analysis of patient followup and completion of the trial is required to establish statistical significance of these findings.

MP-01.12

First results of a new tool for evaluating of cavernous body fibrosis after radical prostatectomy: Penile elastography

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Introduction and Objectives: It is believed that the main cause of erectile dysfunction following radical prostatectomy (RP) is cavernous tissue fibrosis depending on neurovascular bundle (NVB) damage. We aimed to evaluate the changes in cavernous tissue elasticity scores in patients who underwent RP with NVB preserving or not.

Methods: We prospectively collected data of 65 preoperative potent patients who underwent RP for organ-confined prostate cancer at our institution between April 2014 and March 2015. Patients were divided into three groups: non-nerve-sparing (Group 1=22 patients); unilateral (left/right) nerve-spared (Group 2=22 patients); and bilateral nerve-spared (Group 3=21 patients). Preoperative and postoperative (third and sixth month) International Index of Erectile Function (IIEF)-5 and elasticity scores were recorded. Elasticity of cavernous tissue (at level of penoscrotal junction) was assessed with real-time elastography. All elastography measures were performed by a single radiologist between 0-6 scores (0:elastic, 6:fibrotic).

Results: Age, preoperative IIEF-5, and elasticity scores were similar for all three groups (p=0.22, p=0.54, p=0.36, respectively). The differences of postoperative IIEF-5 and elasticity scores between Groups 1 and 2 and Groups 1 and 3 were statistically significant. However, difference between Groups 2 and 3 was not statistically significant. Postoperative IIEF-5 and elasticity scoreswere at three and six months are summarized in the

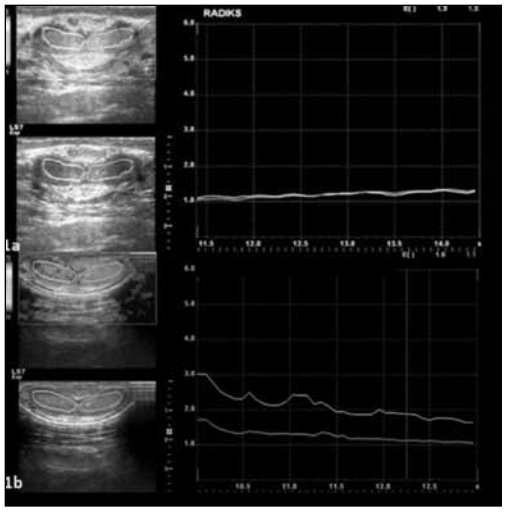

Fig. 1. MP-01.12.

tables on the right-hand side of Fig. 1. Also a very strong negative correlation was detected between IIEF-5 and elasticity scores in Spearman correlation test at postoperative Month 3 (r=-0.818) and 6 (r=-0.814).
Conclusions: Lower IIEF-5 and higher elasticity (in favour of fibrosis) scores were observed in bilateral non-nerve-sparing patients after RP. Preserving NVB in at least one side mediates better IIEF scores and lower elasticity scores. Preliminary results of the penile elastography studies are promising for prediction of erectile functions and cavernous tissue fibrosis. Further prospective studies are necessary for confirmation of our results.

UP-01.01

Effects of dietary omega-3 fatty acids on tumour growth and immune response in the TRAMP-C2 prostate tumour model in castrated mice

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Introduction and Objectives: Inflammation is a contributing factor to prostate cancer (PCa) development. Dietary omega (Ω)-3 fatty acids (FA) reduce tumour growth likely by affecting the immune response in an immune-competent TRAMP-C2 PCa mice model. However, it remains unclear if that effect remains in the context of androgen deprivation. Our objectives were to measure the effects on tumour growth an intratumoural immune response of dietary Ω-3 FAs using the TRAMP-C2 PCa model in castrated mice.
Methods: Groups of 15 C57BL/6 mice were fed with Ω-3- or Ω-6-enriched diets until sacrifice. After two weeks of diet, all mice were surgically castrated and two weeks after castration, $2x10^6$ TRAMP-C2 cells were implanted s.c. on each flank. Mice were sacrificed when the tumour volume reached 2 cm^3. Plasma, red blood cells, and tumours were collected at sacrifice. The FA profiles were determined by capillary gas-liquid chromatography, and cytokine profiles by Luminex assays. Finally, immune-cell infiltration was analyzed in dissociated tumours using multicolour flow cytometry. Survival analysis was used to estimate time to sacrifice. Intratumoural levels of cytokines and immune cells were compared using the Mann-Whitney test, with p-values <0.05 declared significant.
Results: Tumours of the Ω-3-treated mice had a slower growth than Ω-6-treated mice tumours and survival time of mice was improved (log rank p=0.0004). FA profile showed substantial incorporation of Ω-3 FAs in the tumours of Ω-3- vs. Ω 6-treated mice. Granulocyte-macrophage colony-stimulating factor (GM-CSF) was detected in 1/3 of Ω-3-treated mice tumours and none of in the Ω-6-treated mice. IL4, IL5, IL10, IL12(p70), MCP-1, MIP-1b, and TNF-α were expressed at significantly higher level in Ω-3 group. $CD4^+$ $IL\text{-}10^+$ and $CD4^+$ $IL4^+$ cells were significantly more abundant in Ω-3 mice tumours compared with tumours in Ω-6 mice.
Conclusions: Dietary Ω-3 FAs reduce prostate tumour growth in this castrated, immune-competent mice model. This could be achieved by favouring a more effective immune response.

UP-01.02

Re-examining the administration of prophylactic ciprofloxacin prior to transrectal ultrasound-guided prostate biopsies at a tertiary academic Canadian hospital

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Introduction and Objectives: Recently, there has been an increase in bacterial resistance to ciprofloxacin, encouraging exploration of other prophylactic antibiotic regimens prior to transrectal ultrasound (TRUS)-guided prostate biopsies. We performed a retrospective analysis of patients who underwent a TRUS biopsy at our tertiary academic Canadian hospital to examine infection rates comparing ciprofloxacin only to other antibiotic therapies.
Methods: A retrospective chart review was performed between 2013 and 2015 of men who underwent TRUS biopsy. Of the 382 charts reviewed, 71 patients were excluded due to insufficient data, leaving a study cohort of 311 patients. Demographic data, prostate-specific antigen (PSA), prostate volume, and complications, particularly post-TRUS sepsis within 30 days, were ascertained from electronic records. We compared infection rates of patients who were given ciprofloxacin (Group 1) vs. other regimens (Group 2).
Results: The average age of the patients was 64 years with a mean PSA of 7.2 ng/mL and prostate volume of 42.3 cc. Approximately 84.9% of patients (Group 1: 264/311) were given ciprofloxacin only prophylaxis prior to TRUS biopsy. The rest of the patients (Group 2: 47/311) were given other antibiotics, including tobramycin, gentamycin, septra, ampicillin, and/or vancomycin with or without concurrent ciprofloxacin. Overall rate of sepsis was 3.22%. Sepsis rates for Group 1 and Group 2 were 3.79 and 0%, respectively (p<0.05). The majority of those who developed bacteremia in Group 1 grew organisms resistant to ciprofloxacin. There were no other serious post-biopsy complications noted.
Conclusions: At our centre, the rate of post-TRUS biopsy sepsis in patients receiving ciprofloxacin only compared to other antibiotic regimens was statistically higher. Consideration should be given to using alternative antibiotics, to evaluate local patterns of antibiotic resistant organisms and change practice accordingly, or to performing routine rectal swabs to identify at-risk individuals.

UP-01.03

Effects of chronic lung disease and smoking on prostate cancer mortality after radical prostatectomy

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Introduction and Objectives: Faced with an aging population and associated patient comorbidities, urologists are confronted with the dilemma of risk stratification in identifying higher-risk patients being followed for prostate cancer (PCa) post-radical prostatectomy (RP). Our objectives were to examine the associations between chronic obstructive pulmonary disease (COPD), smoking, and cause of mortality.
Methods: Between 1987 and 2007, 2385 consecutive men were treated by RP at CHU de Québec. Charts were reviewed systematically. Cause of death was ascertained by chart review and validated with data from Quebec Statistical Institute. We used competing risks modeling with right censoring (Fine & Gray method) adjusted for age, prostate-specific antigen (PSA), stage, grade, and nodal involvement to estimate the risks (HR) of prostate cancer-specific mortality (PCSM) and other-cause mortality (OCM).
Results: This cohort included 2385 men, with 57 (2.4%) PCSM and 302 (12.7%) OCM. Median survival time was 18 years (interquartile range (IQR) 16 years). All adjusted comparisons were made with non-smoking men without COPD. COPD significantly increased PCSM risk (HR 2.83, 95% CI, 1.3-6.4), but smoking in itself did not. Both types of COPD affected PCSM: COPD in men who never smoked (HR 6.7, 95% CI 1.4-32.2) and in current smokers (HR 5.1, 95% CI 1.3-19.6). However, PCSM was not affected in past smokers with COPD. Risk of OCM was increased by both COPD (HR 1.6, 95% CI 1.5-1.8) and smoking (HR 4.3 95% CI 3.7-4.9).
Conclusions: Both smoking- and non-smoking (ever)-associated forms of COPD were significantly and independently associated with OCM, as expected, but additionally with PCSM in this cohort. Moreover, smoking cessation appears to reverse the risks of smoking-related COPD effects on PCSM. If validated, our findings would support a specific PCSM effect of smoking and smoking cessation post-RP. More research to is required at this time to identify the underlying mechanisms linking COPD and smoking to PCSM.

UP-01.04

CAPRA-S predicts outcome for adjuvant and salvage EBRT after radical prostatectomy

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Introduction and Objectives: To evaluate the predictive value of the Cancer of the Prostate Risk Assessment Postsurgical Score (CAPRA-S) for patients treated with radical prostatectomy followed by subsequent external beam radiotherapy (EBRT).

Methods: A total of 373 patients treated with EBRT between January 2000 and June 2015 were identified in the institutional database. Followup and complete CAPRA-S scores were available for 334 (89.5%) patients. Median followup following EBRT was 48 months (interquartile range (IQR) 28-78); 12% received EBRT within four months of surgery. Concomitant androgen-deprivation therapy (ADT) was administered in 36.2% of cases. CAPRA-S scores were sorted into previously defined categories of low- (score 0-2), intermediate- (3-5), and high-risk (6-12). Time to biochemical recurrence (BCR) was defined as prostate-specific antigen (PSA) >0.20 ng/mL after EBRT. Survival analyses were performed using the Kaplan-Meier method and comparisons were made using the log-rank test.

Results: Overall median time from surgery to EBRT was 18 months (IQR 8-36) and median followup since EBRT was 48 months (IQR 28-78). CAPRA-S predicted time to BCR (<0.001), time to palliative ADT (p=0.017), and a trend for significantly predicting overall survival (OS, p=0.058). Using predefined PSA categories before EBRT, we found that each rise to a higher group increases the hazard of BCR by 28.6% (HR 1.286; 95% CI 1.009-1.641). When evaluating the PSA before EBRT as a continuous variable, each increase of 1 ng/mL translated into a 20% increase risk of BCR (HR 1.199; 95% CI: 1.070-1.343).On multivariate analysis, the CAPRA-S was predictive of time to BCR only (low-risk vs. intermediate-risk; HR 0.14, 95% CI 0.043-0.48; p=0.001). The last PSA measurement before EBRT as a continuous and grouped variable proved highly significant in predicting all outcomes tested, including OS (p≤0.002).

Conclusions: CAPRA-S predicts time to BCR and freedom from palliative ADT, and was borderline significant for OS. Together with the PSA before EBRT, CAPRA-S is a useful predictive tool. The main limitation of this study is its retrospective design.

UP-01.05

Pathological outcome at salvage prostatectomy for post-radiation adenocarcinoma with treatment effect

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Introduction and Objectives: Prostate biopsies following localized radiation therapy for prostate cancer often demonstrate residual prostatic carcinoma with treatment effect, in which the malignant glands exhibit histologic features that are distinct from treatment-naïve prostate cancer. The final oncological outcome of prostatic adenocarcinoma with treatment effect is currently unknown. We set out to identify the pathological outcome for those with complete treatment effect (CTE) on post-local therapy biopsy who subsequently underwent salvage prostatectomy and relate this to oncological outcome.

Methods: A single-centre, retrospective review of all salvage radical prostatectomies (SRP) performed at MDACC from 1995 to 2014 was performed. Biopsy results post-local therapy were stratified as CTE, partial treatement effect (PTE), or no treatment effect (NTE). They were compared to final pathology following salvage prostatectomy. Primary outcome was recurrence-free survival (RFS).

Results: 70 patients who had SRP met study criteria. 16 patients had CTE in the absence of other adenocarcinoma on biopsy. Among them, one (7%) patient had no evidence of carcinoma at time of salvage prostatectomy, four (27%) had adenocarcinoma with CTE, three (20%) had adenocarcinoma with minimal or PTE, and seven (47%) had adenocarcinoma with NTE. The median RFS was 2.78 years (95% CI, 0.81-5.43 years) and the five-year RFS rate was 37% (95% CI, 22%-52%). Number of positive cores at time of pre-salvage (p=0.01) and Gleason sum prior to salvage (p=0.03) were significantly associated with RFS. The presence of CTE was not predictive of RFS (p=0.12) (Fig. 1).

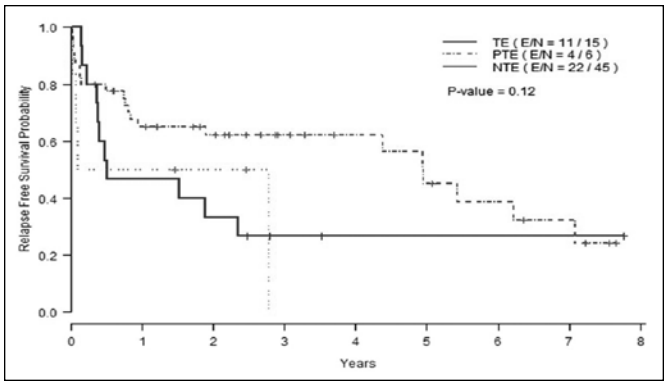

Fig. 1. UP-01.05.

Conclusions: In patients who have CTE on biopsy post-local therapy, less than one-third had concordant pathology at time of RP and 66.7% had radiation-resistant disease. The presence of CTE did not have effect on RFS. High biopsy Gleason grade and volume of disease was predictive of recurrence.

UP-01.06

Haptic simulation of prostate surgical planning based on magnetic resonance elastography

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Introduction and Objectives: The average rate of positive margins in robotic-assisted laparoscopic radical orostatectomy is 15% (range 6.5-32%).[1] Improved preoperative planning could reduce the incidence of positive margins. Magnetic resonance elastography (MRE) has the potential to provide quantitative data of the tissue mechanical properties, linked to tumour malignancy.[2] The goal of this project is to develop a virtual reality haptic simulator that will improve pre-surgical planning and reduce the incidence of positive margins.

Methods: A virtual 3D prostate model was created by scanning a plastic phantom (CIRS) with an ultra-high field 9.4 T Agilent horizontal bore preclinical magnetic resonance imaging (MRI) system (310/ASR), upgraded with MRE scanning capabilities. MRE data was obtained by inserting an acoustic source tube into the probe opening (rectum), and processed by performing full 3D Helmholtz direct inversion to the noise-filtered 3D wave displacement data.

Results: A haptic device (3D Systems Touch™ X) was used to explore the virtual prostate model. Haptic resistance was computed-based on the shear modulus map provided by the MRE data. It was found that regions of high stiffness obtained by MRE correspond well with the phantom lesions and urethra.

Conclusions: The results of this preliminary study suggest the feasibility of using a novel combination of MRE and haptics to better identify prostate tumour locations and sizes, and more accurately perform cancer staging in patients with prostate cancer.

1. Yossepowitch O, Briganti A, Eastham JA, at al. Positive surgical margins after radical prostatectomy: A systematic review and contemporary update. *Eur Urol* 2014;65:303-13. http://dx.doi.org/10.1016/j.eururo.2013.07.039
2. Hoyt K, Castaneda B, Zhang M, et al. Tissue elasticity properties as biomarkers for prostate cancer. *Cancer Biomark* 2008;4:213-25.

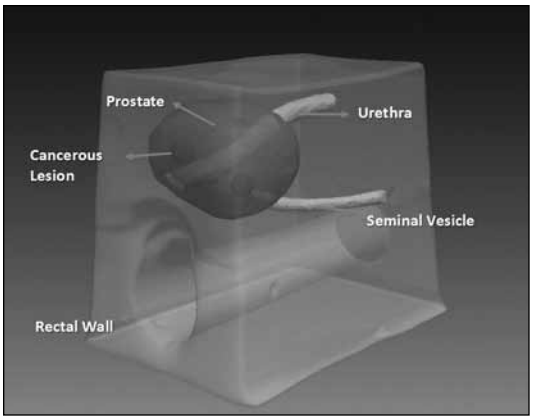

Fig. 1. UP-01.06.

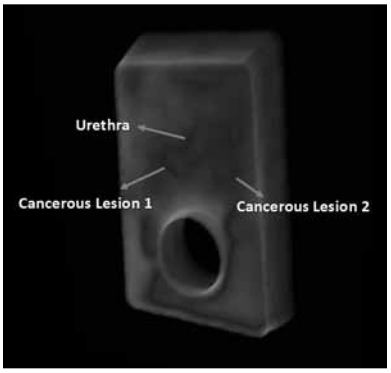

Fig. 2. UP-01.06.

UP-01.07

Comparing perspectives of men diagnosed with prostate cancer and healthcare professionals about active surveillance

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Introduction and Objectives: The practice of active surveillance (AS) for men with low-risk prostate cancer (PCa) is growing across Canada. This study explored the perspectives of men diagnosed with PCa and healthcare professionals (HCP) regarding AS and the factors that influence the uptake of AS.

Methods: Focus groups were held in several Canadian cities with men (seven groups, N=56) diagnosed with PCa and eligible for AS, and with HCPs (five groups, N= 48) who care for men with PCa and engage in conversations about AS. Viewpoints were captured regarding understanding of AS, practices regarding AS, and factors that influence decision-making about AS. A content analysis was performed on the verbatim transcripts and a comparison was made between the men's and the HCP's viewpoints.

Results: Both men and HCPs agreed AS is for low-grade or low-risk disease, it has intent ("it is not about doing nothing"), it avoids treatment side effects, and the regular monitoring allows time for treatment if the disease changes. Both groups agreed that men could be accepting of AS if there was no change in disease status. Disease status was a key factor for clinicians and men in deciding to pursue AS. However, men discussed the importance of quality of life as a key consideration to balance in their decision-making. The differences in perspectives between men and clinicians became evident regarding clarity around criteria for AS, interpretation of test results, what constitutes a standard (best practice) approach for AS, clarity of information provided to patients, how much information is needed and given to men, as well as the amount of time required to make a decision.

Conclusions: Differences in perspectives can be a source of tension and misunderstanding between patients and clinicians. Communication and education efforts are needed to achieve clear, shared perspectives on AS between men diagnosed with PCa and their physicians.

UP-01.08

Predictors for upgrading and upstaging of biopsy Gleason 3 + 4 prostate cancer at radical prostatectomy

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Introduction and Objectives: Some patients with Gleason grade 3 + 4 prostate cancer may be safely managed with active surveillance. The purpose of this study was to identify predictors for upgrading or upstaging of biopsy Gleason grade 3 + 4 prostate cancer at radical prostatectomy.

Methods: Consecutive patients with Gleason 3 + 4 on biopsy between January 2010 and December 2015 were identified. Patients who had both biopsy and radical prostatectomy at The Ottawa Hospital were included. Baseline clinical variables were identified from the medical record. Prostate biopsy specimens were re-reviewed by blinded genito-urinary pathologists. The primary outcome was upgrading (grade 4 + 3 or higher), upstaging (pT3), or a composite of either upgrade or upstage from the prostatectomy specimen.

Results: Of 154 patients who met inclusion criteria, 41 (27%) had palpable tumours and 115 (76%) had prostate-specific antigen (PSA) density of 0.15 or greater. Median PSA was 6.7 ng/ml (interquartile range (IQR) 5-9) and mean age was 63 years (SD 6.5). On blinded review of biopsy tissue, 11 (7%) had cribiform pattern and 57 (37%) had perineural invasion. The mean proportion of cores with any grade 4 tumour was 23% (SD 0.16), the mean proportion of all tissue that had prostate cancer was 18% (SD 13%) and the proportion of all tumour that was grade 4 was 14% (SD 12%). Median time between biopsy and radical prostatectomy was 108 days (IQR 84, 146 days). At prostatectomy, Gleason scores were upgraded to 4 + 3 or higher in 44 patients (29%); 69 (45%) patients were upstaged to pT3; and either of these outcomes was found in 84 (54%) patients. On multivariable analysis, statistically significant predictors of upgrading or upstaging included PSA density ≥0.15 (OR 2.9; 95% CI 1.1, 8.3) and proportion of cancer tissue with Gleason pattern 4 (OR 71; 95% CI 2.4, 2089).

Conclusions: Some patients with Gleason grade 3 + 4 on biopsy may be candidates for active surveillance. Higher PSA density and higher proportion of cancer tissue with Gleason pattern 4 on biopsy are indications for treatment with curative intent.

UP-01.09

Canadian consensus guidelines for sexual rehabilitation following prostate cancer treatment

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Introduction and Objectives: Treatment options for prostate cancer (PCa) vary widely and depend on a number of factors. The prevalence of erectile dysfunction (ED) following radical prostatectomy (RP) is high (40-75%), and severely impacts patients' sexual function and quality of life. The present descriptive analysis carried out by a pan-Canadian panel of medical experts summarizes best practices for PCa survivorship, with an overall aim of using these results to establish an online sexual health and rehabilitation clinic (SHARe-c), where patients can independently access medical guidance and care.

Methods: Men's health experts convened for the True NTH Sexual Health and Rehabilitation Initiative Consensus Meeting to address concerns about ED therapy and management following treatment for PC. The day-long meeting brought together experts from across Canada for discussion of current practices, latest literature, and patient interviews.

Results: A baseline algorithm is presented in Fig. 1, incorporating surgical RP and degree of nerve-sparing or radiation-based therapy, and level of invasiveness. This algorithm provides an initial treatment approach from both a biomedical and psychosocial focus that can be more specifically tailored to different patient groups. Regular sexual activity is recommended, and there is further consideration for partner sexual dysfunction, libido concerns, climacturia, and dysorgasmia. Primary goals of long-term penile health, short-term erectile function, and psychosocial aspects are addressed with specific therapies at key milestones.

Conclusions: With ED affecting such a large portion of men post-PC therapy, establishing best practices for sexual rehabilitation is critical. The guidelines proposed by the expert consensus have taken into account important factors, such as patient input, type of treatment, and timeline post-therapy, with the goal of becoming a nationwide standard and independently accessible online as SHARe-c.

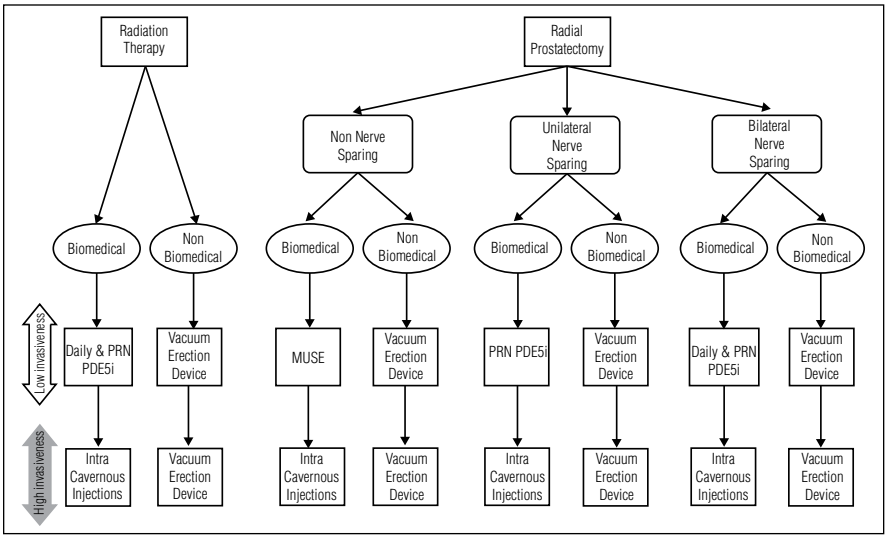

Fig. 1. UP-01.09. Baseline treatment algorithm.

UP-01.10

Open vs. extraperitoneal laparoscopic radical prostatectomy: Perioperative and oncologic outcomes for localized prostate cancer

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Introduction and Objectives: Laparoscopic and robot-assisted laparoscopic radical prostatectomies have showed some advantages as minimally invasive surgeries for cancer patients. Open radical prostatectomy (ORP) remains the gold standard of the surgical treatment of localized prostate cancer. Extraperitoneal laparoscopic radical prostatectomy (ELRP) more closely mimics the open approach than intraperitoneal or the robotic-assisted laparoscopy. Few studies have been reported on this technique. We wanted to compare perioperativeand oncologic outcomes of ELRP to open ORP in a single, tertiary Canadian centre from July 2006 to June 2010.

Methods: A total of 442 patients were identified; 191 underwent ORP and 251 ELRP from July 2006 to June 2010 for a localized prostate cancer. Demographic, surgical, and pathologic data were collected for both groups. Student, Chi-square, Fisher, and Mann-Whitney tests were used for statistic analysis. Multivariate analysis with logistic regression was performed to evaluate the association of the surgical technique with the rate of complications and oncological results.

Results: Some characteristics differ between the two groups at baseline; in the ORP group, patients were younger (62.7 vs. 64.2 years; p=0.007) and had lower-stage tumours (pT2, 73.3 vs. 62.2%; p=0.037). Operative time was shorter for ORP (148 vs. 173 minutes; p<0.001) from 2006 to 2009, but similar (149 vs. 153 minutes; p=0.377) after 2009. For ORP vs. ELRP, respectively, blood loss was 597 vs. 432 mL (p<0.001), postoperative stay was 3.2 vs. 2.9 days (p 0.133), lymph nodes count was 7 vs. 4.4 (p<0.001), and biochemical recurrence was 43.5 vs. 32.1% (p=0.018). There was no difference between the groups with regard to positive surgical margins (43.5 vs. 43.9%; p=0.995), complication rate (16.8 vs. 23.1%; p=0.100), or delay of recurrence (66.5 vs. 71 months; p=0.060). In multivariate analysis, surgical technique was not associated with an increased risk of complications (p=0.133) or biochemical recurrence (p=0.075).

Conclusions: ELRP results in a significantly shorter length of hospital stay and lower blood loss than ORP. ORP seems to be faster, but the ELRP operative time is getting shorter with the learning curve. Also the lymph node count is higher with the ORP approach. In multivariate analysis, surgical technique was not associated with a higher risk of complications or biochemical recurrence.

UP-01.11

The cost-effectiveness of Greenlight laser compared to transurethral resection of the prostate for patients with benign prostate hypertrophy

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Introduction and Objectives: Benign prostatic hyperplasia (BPH) is a non-cancerous enlargement of the prostate that affects up to 50% of men 50 years of age and older, and frequently leads to bothersome lower urinary tract symptoms (LUTS). Transurethral resection of the prostate (TURP) is the leading intervention used to ablate prostate tissue and restore normal urinary

function. A newer, energy-based alternative called the Greenlight laser photoselective vaporization of the prostate (PVP) is less invasive, has a shorter surgical procedure, faster symptom improvement, and decreased morbidity compared to TURP.[1] The present study compares case costs and complication rates of both methods.
Methods: We employed a single-centre descriptive analysis of average case cost summaries of BPH surgical procedures PVP and TURP (both traditional and with Olympus power button; OP) over a 19-month timeframe (2013-2015). Proportion of total cases, total cost (surgical cost + hospital stay), and proportions of post-treatment complications were calculated.
Results: There were 147 BPH surgical cases. PVP, TURP, and TURP with OP accounted for 29%, 62%, and 10% of cases, respectively. Notably, only 10% of PVP surgeries required in-patient hospital stays, whereas nearly all TURP cases were hospitalized. When cost of surgical procedure and hospital stay were calculated, PVP offered total cost savings over TURP and TURP OP of 30.2% and 33.4%, respectively. Furthermore, readmission rates within 60 days were 0% for PVP patients and 14% for TURP (due to mechanical or medical complications).
Conclusions: The newer, energy-based PVP is a minimally invasive treatment intervention for BPH, requiring shorter surgical case duration over traditional TURP. We found that PVP offered savings of approximately 31% over TURP and resulted in fewer complications that led to readmission. Considering its cost-effectiveness and medical benefits, PVP should be a leading treatment option for BPH-related LUTS.

1. Bowen JM, Whelan JP, Hopkins RB, et al. Photoselective vaporization for the treatment of benign prostatic hyperplasia. *Ont Health Technol Assess Ser* 2013;13:1-34.

UP-01.12

Subjective intraoperative difficulty encountered by the surgeon at the time of robotic-assisted radical prostatectomy predicts continence recovery: Novel finding emphasizing role of the surgeon

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Introduction and Objectives: It has been increasingly recognized that the surgeon plays an important role in functional and oncological outcomes post-robotic-assisted radical prostatectomy (RARP). In the current study, we examined the surgeon's perception of difficulty encountered during surgery and its impact on continence recovery after RARP.
Methods: We analyzed continence data of 322 patients with prostate cancer who underwent RARP between October 2006 and May 2015, operated by single surgeon (AEH), from a prospectively collected database. During surgery, the surgeon assessed several subjective parameters in an objective fashion using a Likert-type scale. These included overall difficulty (high-intermediate-low), quality of the anastomosis (perfect-good-poor), and overall satisfaction (high-intermediate-low). All patients were interviewed at one, three, six, 12, and 24 months after surgery. Primary endpoint was time to 0 pad usage per day. We presented the relative risks with 95% confidence intervals and we analyzed risk factors in univariate and multivariate cox regression analysis.
Results: Overall difficulty encountered by surgeon at time of procedure predicted delayed continence recovery in multivariate analysis (HR of intermediate scale 0.63, 95% CI 0.45-0.87; p=0.006 and HR of low scale 0.52 95% CI 0.37-0.73; p=<0.001). However, surgeon impression on quality of anastomosis and surgeon overall satisfaction did not predict continence recovery. Prostate size (HR 0.71, 95% CI 0.5-0.99; p=0.04), and operative time (HR 0.99, 95% CI 0.98-0.99; p=0.02) were also independent predictors of delayed continence recovery. In our cohort, continence rates were 39%, 58%, 71%, 80%, and 91% at at one, three, six, 12, and 24 months, respectively. Moreover, preoperative high International Prostate Symptom Score (IPSS) index was associated with delayed continence recovery during the first year after surgery at all time intervals (p≤0.05). In addition, preoperative low Sexual Health Inventory for Men (SHIM) score predicted delayed continence recovery at 24 months (p≤0.05). No statistically significant correlation was found between body mass index, Charlson comorbidity index, or preoperative oncological parameters and continence recovery.
Conclusions: Overall, difficulty encountered by surgeon at time of RARP is an independent predictor of continence recovery in addition to prostate size and preoperative IPSS. To our knowledge, this is the first time a subjective intraoperative parameter has been correlated with functional outcome post-RARP.

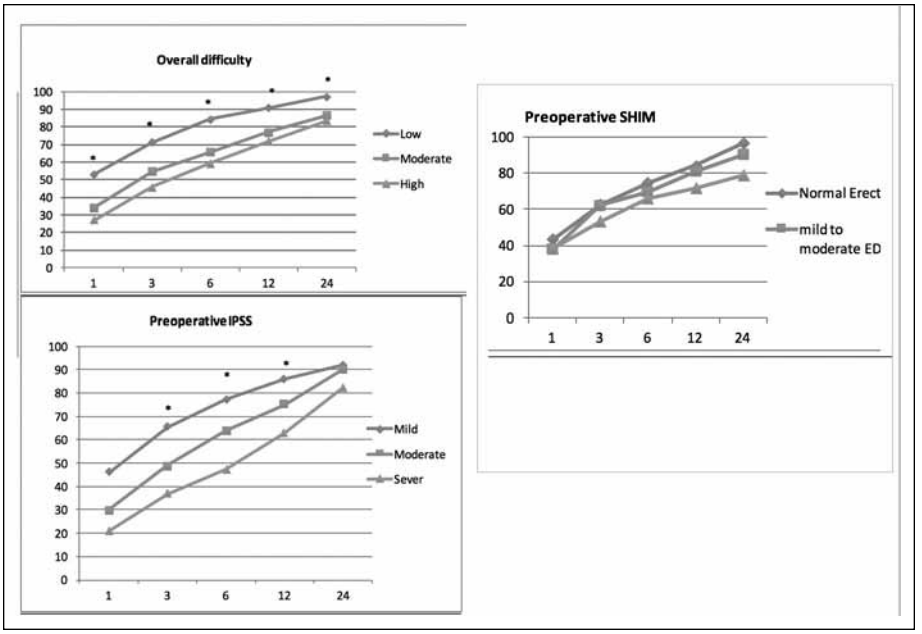

Fig. 1. MP-01.12. Marked lines show the continence rate in comparison with preoperative IPSS, preoperative SHIM, and intraoperative overall difficulty.

UP-01.13

An update on methods of assessment in robotic surgery: A urology perspective

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Introduction and Objectives: In recent years, there has been a rapid accumulation of new tools for assessment of robotic surgical skill, both technical and non-technical domains. The current climate in surgical assessment and accreditation calls for robust measurement of surgical skill, as the literature points to its impact on patient outcomes. Our objective in this article is to review the recent literature on robotic skills assessment and interpret the evidence from a urology viewpoint.
Methods: A literature search of the MEDLINE, PsycINFO, and Embase databases was performed for publications from January 2010 to January 2016 on technical and non-technical skills assessment in robotic surgery.
Results: The search yielded 124 papers; abstracts were reviewed. The

Table 1. UP-01.12. Univariate and multivariate analysis, Cox regression analysis, of various factors in relation to postoperative early continence recovery

		Univariate		Multivariate	
		HR (95% CI)	*p* value	HR (95% CI)	*p* value
Age		0.98 (0.96–1)	0.06	0.98 (0.96–1.01)	0.28
CCI					
	0–2	Reference	0.5	Reference	0.2
BMI					
	≤25	Reference		Reference	
	>25–30	0.95 (0.68–1.32)	0.8	1.02 (0.72–1.430	0.9
	>30	0.88 (0.61–1.27)	0.5	1.01 (0.68–1.51)	1
	unknown	0.76 (0.51–1.13)	0.2	0.79 (0.52–1.21)	0.3
PSA		0.99 (0.96–1.02)	0.6	0.99 (0.96–1.02)	0.5
Prostate size		0.99 (0.98–0.99)	**0.002***	0.99 (0.98–0.99)	**0.05***
Pathological stage					
	T2a–b	Reference		Reference	
	T2c	1.05 (0.78–1.41)	0.7	0.99 (0.73–1.35)	1
	T3a	0.84 (0.58–1.24)	0.4	0.87 (0.57–1.33)	0.5
	T3b–T4	1.3 (0.76–2.23)	0.3	1.41 (0.59–2.22)	0.7
Gleason score					
	6	Reference		Reference	
	3+4	0.81 (0.58–1.13)	0.2	0.81 (0.57-1.16)	0.3
	4+3	0.9 (0.55–1.49)	0.7	0.96 (0.55–1.68)	0.9
	≥8	0.93 (0.6–1.44)	0.7	0.91 (0.52–1.59)	0.8
Operative time		1 (1–1.01)	0.2	1.001 (1.001–1.01)	**0.02***
IPSS					
	Mild	Reference		Reference	
	Moderate	0.72 (0.56–0.94)	**0.01***	0.74 (0.56–0.98)	**0.04***
	Severe	0.57 (0.34–0.97)	**0.04***	0.57 (0.32–1.02)	0.06
SHIM					
	No ED	Reference		Reference	
	Mild	0.87 (0.65–1.16)	0.3	1 (0.74–1.36)	1
	Mild-Moderate	0.85 (0.57–1.25)	0.4	1.16 (0.75–1.79)	0.5
	Moderate	0.79 (0.42–1.46)	0.4	0.84 (0.43–1.66)	0.6
	Severe	0.64 (0.43–0.95)	**0.03***	0.78 (0.51–1.18)	0.2
Overall difficulty					
	Low	Reference		Reference	
	Intermediate	0.62 (0.46–0.84)	**0.002***	0.63 (0.45–0.87)	**0.006***
	High	0.51 (0.39–0.68)	**<0.001***	0.52 (0.37–0.73)	**<0.001***
Overall satisfaction					
	High	Reference		Reference	
	Intermediate	0.97 (0.5–1.88)	0.9	1.74 (0.82–3.7)	0.1
	Low	1.79 (0.74–4.33)	0.2	2.34 (0.89–6.16)	0.09

BMI: body mass index; CCI: Charlson comorbidity index; CI: confidence interval; ED: erectile dysfunction; HR: hazard ratio; IPSS: International Prostate Symptoms Index; PSA: prostate-specific antigen; SHIM: Sexual Health Inventory for Men; * statistically significant (p<0.05)

search included articles not directly related to urology, and so here we focus on those papers pertaining more to urologic surgery. Table1 shows those tools identified in our search that have been used in, or developed for, robotic surgery technical and non-technical skills assessment.

Conclusions: There has been a rapid expansion in robotic surgical skills assessment, both in simulated and real operating room settings. Global rating scales have become the predominant rubric for technical skills assessment, but procedure-specific checklists also demonstrate concurrent and external validity. To date, non-technical skills have been assessed with instruments that are not specific to robotic surgery. Crowdsourcing has emerged as another novel method of formative assessment providing rapid and validated feedback to trainees and has the potential to be used in summative assessment and credentialing practices as well.

Table 1. UP-01.13.

Technical skills

Assessment tool	Type of xcale	Measured domains	Internal consistency	Concurrent validity	Construct validity
GEARS	GRS	Depth perception Bimanual dexterity Efficiency Force sensitivity Autonomy Robotic control	Very high	Moderate	Yes
R-OSATS	GRS	Depth perception/accuracy Force/tissue-handling Dexterity Efficiency	High	Unknown	Yes
RACE	Checklist	Needle-positioning Needle entry Needle-driving and tissue trauma Suture placement Tissue-approximation Knot-tying	Moderate	Moderate	Yes
OSATS	GRS	Respect for tissue Time and motion Instrument handling Knowledge of instruments Use of assistants Flow of operation & forward-planning Knowledge of specific procedure	Moderate to high	High	Yes
GOALS+	GRS	Depth perception Bimanual dexterity Efficiency Tissue-handling Participant autonomy Instrument awareness and precision Camera awareness and precision	Unknown	High	Yes
Contact Vibration	Unique metric	Instrument vibration and force of movement (via accelerometers)	High to very high	High	Yes

Non-technical skills

Assessment tool	Scale	Measured domains	Use in robotic surgery
NOTSS	N/A = Not applicable skill 1 = Poor 2 = Marginal 3 = Acceptable 4 = Good	Situation awareness Decision-making Communication and teamwork Leadership	Volpe et al.
NOTECHS	1 = Below standard 2 = Basic standard 3 = Standard 4 = Excellent	Leadership and management Teamwork and cooperation Problem-solving and decision-making Situational awareness	Patki et al.
OTAS	Rating anchors 0 = Problematic behaviour 1 = Team function 2 = Slight detriment to team function 3 = Team tunction neither hindered nor enhanced 4 = Behaviour enhances team function 5 = Behaviour greatly enhances team function 6 = Exemplary behaviour	Communication Coordination Cooperation and backup behaviour Leadership Team-monitoring and situational awareness	Randall et al.

UP-01.14

Androgen-deprivation therapy is not associated with depression: Results of a two-year prospective cohort study

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Introduction and Objectives: The presence, timing, and magnitude of effect of androgen-deprivation therapy (ADT) on anxiety and depression are controversial in prostate cancer (PCa). This is an analysis of a two-year prospective cohort study investigating the influence of ADT on patient depression and quality of life (QoL).

Methods: Three cohorts of men with PCa were enrolled: a control group consisting of patients on watchful waiting (Group A), those initiating ADT for advanced disease (Group B), and those undergoing adjuvant ADT in a combined-modality curative protocol for higher-risk cancer (Group C). Patients were assessed every three months from baseline for two years. Questionnaire data were collected to assess depression and QoL.

Results: There were no significant group differences at baseline in terms of age (p=0.57), marital status (p=0.80), depression (p=0.32), or mental QoL (p=0.11). A repeated measures ANOVA examined differences in mental QoL, physical QoL, and depression from the baseline assessment up to two years. A significant main effect was found for time (p =0.01) on mental QoL, but not for group (p=0.32). Additionally, there was a significant decrease in mental composite scores over time in Group C (p=.01). Results show a significant main effect of treatment group (p=0.02) on physical QoL, but no main effect of time (p=0.70). Group A (M=41.14, SE=2.25) reported significantly lower physical QoL scores than Group C (M=49.10, SE=1.84). Interestingly, there were no significant main effects for time (p=0.07), group (p=0.23), or the interaction (p=0.65) on depression.

Conclusions: Individuals receiving any form of treatment ADT had significant decrease in mental QoL over time in comparison to controls. Further, individuals in receiving ADT were more likely to experience reductions in their physical QoL compared to controls. All individuals within this sample appeared to have an increase in depressive symptoms over time, however, the decrease was not statistically significant.

UP-01.15

Characterizing APCaRI participants by their patient-reported outcomes

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Introduction and Objectives: Patient-reported outcomes (PROs) are validated questionnaires intended to measure patients' functional status and symptom severity. By including PROs as part of the routine collection of data in a clinical registry, they can be used to characterize sub-groups of patients and track changes in their symptoms over time. The purpose of this presentation is threefold, to: 1) report on the PROs being collected in the APCaRI registry; 2) describe the APCaRI sample using the PROs collected at intake; and 3) provide an example of how PROs can be used to characterize a sub-group of patients with suspected overactive bladder (OAB).

Methods: The APCaRI clinical registry includes generic and condition-specific PROs, including: EQ-5D, Expanded Prostate Cancer Index Composite (EPIC)-26, and the International Prostate Symptom Score (IPSS). Data from the APCaRI clinical registry was extracted and de-identified for analysis. Responses to the EQ-5D were analyzed for its five items: mobility, self-care, usual activities, pain/discomfort, depression/anxiety. Responses to the EPIC-SF were analyzed for its five domains: urinary incontinence, urinary irritative/obstructive, bowel, sexual, and hormonal. Responses to the IPSS were analyzed for its global score. Relevant items were extracted from the PROs to characterize those patients with suspected OAB.

Results: Complete PRO data collected at intake were available for 657 (83%) of 794 patients in the APCaRI registry. The results are summarized in Table 1.

Table 1. UP-01.15.

EQ-5D (# patients reporting moderate or severe)	(n=664)
Mobility	31
Self care	7
Usual activities	7
Pain/discomfort	10
Depression/anxiety	6
EPIC-26 (median values out of 100)	
Urinary incontinence	83.75
Urinary irritative/obstructive	93.75
Bowel	100.00
Sexual	52.83
Hormonal	100.00
IPSS (median value of out 35)	
Global score	6.0

162 patients met our criteria for OAB at intake. Zero (0) PROs were available for 276 patients at six-month followup, and for 28 (24%) out of 115 patients at 12-month followup.

Conclusions: PROs can be used by APCaRI investigators to supplement their characterization of patients' prostate cancer-related symptoms and the impact these have on their quality of life. Collection of PROs at followup should be emphasized in order to track these outcomes over time.

UP-01.16

Concomitant use of emerging therapies and bone-targeting agents in prostate cancer: Observations from real-world data

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Introduction and Objectives: Clinical guidelines recommend emerging therapies and bone-targeting agents (BTAs) to treat castration-resistant prostate cancer (PCa) patients with evidence of bone metastases. However, real-world use of new therapies and BTAs is not well understood.

Methods: Electronic medical records (Flatiron Health; >1 million patients; 220 US cancer clinics) were used to identify men ≥18 years with PCa (ICD-9 185/ICD 10 C61) with ≥1 emerging therapy (abiraterone acetate, cabazitaxel, enzalutamide, radium 223, sipuleucel-T) in 2014, with or without BTA (denosumab or zoledronic acid).

Results: 3890 PCa patients (mean age 74.4 years) received an emerging therapy in 2014: abiraterone (57%), enzalutamide (48%), cabazitaxel (11%), sipuleucel-T (8%), and radium 223 (5%) (nonexclusive categories). In 2014, 68% received chemotherapy (82% ever), 18% docetaxel (39% ever), and 54% androgen-deprivation therapy (60% ever). Among new users, abiraterone (54%), enzalutamide (30%), and sipuleucel-T (11%) were most common in the pre-docetaxel setting (n=1745). In the post-docetaxel setting (n=282), enzalutamide (35%), abiraterone (31%), and cabazitaxel (27%) were most common. Among BTA users (n=2422; 62%) (Table 1), more patients received denosumab (73%) than zoledronic acid (38%). In 2014, patients averaged 3.5 (standard deviation (SD) 2.9) administrations of emerging therapies and 6.9 (SD 3.9) of BTAs.

Conclusions: Real-world data from oncology practices across the US suggest that abiraterone and enzalutamide are the novel agents of choice in PCa, with abiraterone preferred overall, pre-docetaxel, and with BTAs. Urologic oncologists are comfortable coadministering emerging therapies

Table 1. UP-01.16

	Any BTA N (%)	Denosumab N (%)	Zoledronic acid N (%)
Any ermerging therapy	2422	1776	920
Same day	1328 (55)	905 (51)	451 (49)
Within two weeks	2233 (92)	1535 (86)	757 (82)
Abiraterone acetate	1372 (57)	1008 (57)	510 (55)
Cabazitaxel	318 (13)	197 (11)	162 (18)
Enzalutamide	1184 (49)	884 (50)	425 (46)
Radium 223	153 (6)	119 (7)	56 (6)
Sipuleucel-T	223 (9)	168 (9)	76 (8)

and BTAs where almost two-thirds of patients received a BTA in 2014. Future research can address optimal sequence or combination of emerging therapies and impact on patient outcomes.

UP-01.17

Smoking is an independent risk factor of continence recovery after robotic-assisted radical prostatectomy: Long-term results from a prospective Canadian cohort

Rajih, Emad S.[1,2]; Meskawi, Malek[1]; Alenizi, Abdullah M.[1]; Zanaty, Marc[1]; Alnazari, Mansour[1]; Alhathal, Naif[1]; Zorn, Kevin C.[1]; El-Hakim, Assaad[1]
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Introduction and Objectives: Delayed continence recovery is the most bothersome complication post-prostatectomy. Several studies have reported the effect of various preoperative and intraoperative parameters on continence recovery. The role of active smoking has not been well studied.

Methods: We analyzed continence data of 322 patients with prostate cancer who underwent robot-assisted radical prostatectomy (RARP) between October 2006 and May 2015 by single surgeon (AEH). All patients were interviewed at one, three, six, 12, and 24 months after surgery. We analyzed the risk factors for urinary incontinence from prospectively collected database in univariate and multivariate cox regression analysis. Primary endpoint was time to 0 pad usage per day.

Results: Smoking at time of surgery predicted delayed continence recovery in multivariate analysis (HR 0.71, 95% CI 0.5-0.99; p=0.04). Furthermore, bladder neck-sparing (HR 0.71, 95% CI 0.5-0.99; p=0.04), prostate size (HR 0.99; 95% CI 0.98-0.99; p=0.02), and operative time (HR 1.001, 95% CI 1.001-1.01; p=0.03) were independent predictors of continence recovery after RARP. In our cohort, 0 pad continence rates were 39%, 58%, 71%, 80%, and 91% at one, three, six, 12, and 24 months, respectively. Age and neurovascular bundle preservation were associated with continence recovery only in univariate analysis. No statistically significant correlation was found with other variables, such as body mass index, Charlson comorbidity index, preoperative oncological factors, presence of median lobe, or thermal use.

Conclusions: Our results suggest that smoking at the time of surgery is a major factor responsible for delayed continence recovery. Men with large prostate glands, non-bladder neck-sparing, and longer operative times should be counselled on the increased risk of urinary incontinence postoperatively. The association between smoking and postoperative incontinence has not been well-documented until now. These results need to be validated by others.

UP-01.18

Continence recover after vesicourethral anastomosis with bidirectional barbed polyglyconate (V-Loc 180®) vs. polyglecaprone (Monocryl®) suture in robotic-assisted radical prostatectomy

Rajih, Emad S.[1,2]; Meskawi, Malek[1]; Alenizi, Abdullah M.[1]; Zanaty, Marc[1]; Alnazari, Mansour[1]; Alhathal, Naif[1]; Zorn, Kevin C.[1]; El-Hakim, Assaad[1]
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Introduction and Objectives: To evaluate long-term functional outcome with time to 0 pad after vesicourethral anastomosis (VUA) using monofilament poliglecaprone versus barbed polyglyconate suture in robotic-assisted radical prostatectomy (RARP).

Methods: From October 2006 to May 2015, 322 patients who underwent RARP in a single centre by same surgeon (AEH) included in a prospectively collected database were analyzed in a retrospective study. All patient underwent continuous, single-layer running anastomosis during RARP with either monofilament suture (n=141) or barbed suture (n=181). Primary outcome measures were time to 0 pad at one, thee, six, 12, and 24 months followup. Secondary outcomes were anastomosis time and perioperative complications.

Results: Continence rates were different between both groups up to one year, favouring monofilament suture. 0 pad continence rates in monofilament group and barbed suture group at one, thee, six, 12 and 24 months were 56% vs. 26% (p<0.001), 73% vs. 36.4% (p<0.001), 84.4% vs. 60.2% (p<0.001), 90.8% vs. 71.9% (p<0.001), and 93.5% vs.87.1% (p=0.1), respectively. Anastomosis time was shorter in V-Loc group with a mean of 24.5 min vs. 31.6 min (p<0.001). Independent predictors of continence were suture type (HR 0.53, 95% CI 0.41-0.68; p=0.02) and smaller prostate size (HR 0.99, 95% CI 0.98-0.99; p<0.001) in a multivariate Cox logistic regression analysis.

Conclusions: VUA with barbed suture might contribute to delayed continence recovery in the first year following RARP. This provocative finding is hypothesis-generating and should be tested in a prospective randomized study.

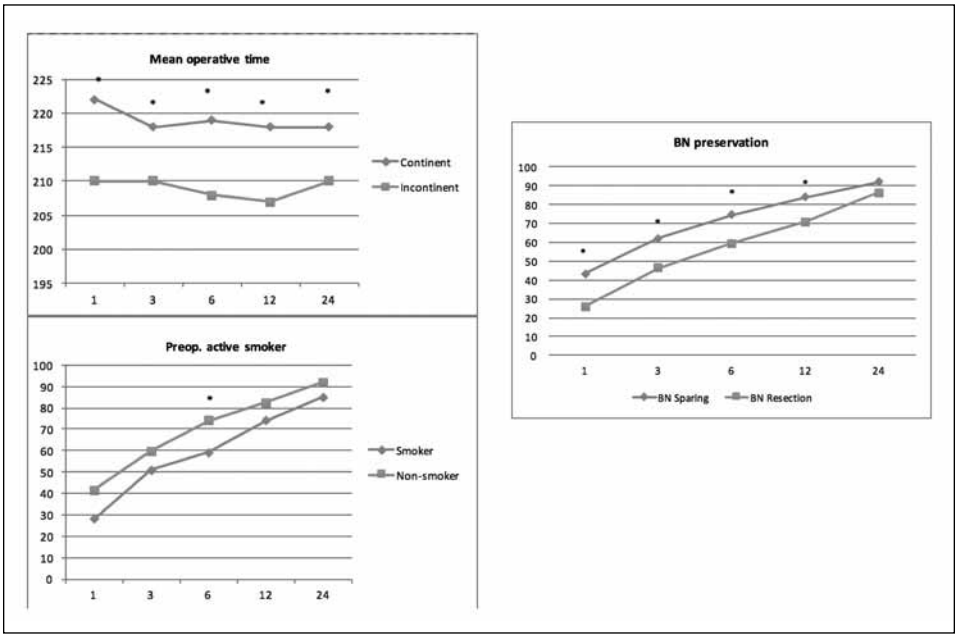

Fig. 1. UP-01.17. Marked lines show the continence rate in comparison with BN-sparing, preoperative smoker, and operative time.

Table 1. UP-01.17. Univariate and multivariate analysis, Cox regression analysis of various factors in relation to postoperative early continence recovery

	Univariate		Multivariate	
	HR (95% CI)	*p* value	HR (95% CI)	*p* value
Age	0.98 (0.96–1)	0.06	0.99 (0.96–1.02)	0.3
CCI				
0-2	Reference	0.5	Reference	0.5
>3	0 .92 (0.72–1.17)		1.12 (0.79–1.59)	
BMI				
≤25	Reference		Reference	
>25–30	0.95 (0.68–1.32)	0.8	0.99 (0.7–1.39)	0.9
>30	0.88 (0.61–1.27)	0.5	0.83 (0.56–1.22)	0.3
unknown	0.76 (0.51–1.13)	0.2	0.85 (0.56–1.28)	0.4
PSA	0.99 (0.96–1.02)	0.6	0.99 (0.96–1.02)	0.5
Prostate size	0.99 (0.98–0.99)	**0.002***	0.99 (0.98–0.99)	**0.02***
Pathological stage				
T2a–b	Reference		Reference	
T2c	1.05 (0.78–1.41)	0.7	1.06 (0.78–1.43)	0.7
T3a	0.84 (0.58–1.24)	0.4	0.93 (0.61–1.41)	0.7
T3b–T4	1.3 (0.76–2.23)	0.3	1.41 (0.73–2.72)	0.3
Gleason score				
6	Reference		Reference	
3+4	0.81 (0.58–1.1 3)	0.2	0.82 (0.58–1.17)	0.3
4+3	0.9 (0.55–1.49)	0.7	0.83 (0.48–1.46)	0.5
≥8	0.93 (0.6–1.44)	0.7	0.96 (0.55–1.67)	0.9
Operative time	1 (1–1.01)	0.2	1.001 (1.001–1.01)	**0.03***
Smoking history				
No	Reference	0.06	Reference	**0.04***
Yes	0 .73 (0.53–1.01)		0.71 (0.5–0.99)	
Median lobe				
No	Reference	0.9	Reference	0.4
Yes	0.98 (0.7–1.37)		1.18 (0.82–1.69)	
Use of perineal pressure				
No	Reference	0.6	Reference	0.7
Yes	0 .87 (0.56–1.36)		1.1 (0.68–1. 77)	
Thermal use				
No	Reference	0.6	Reference	0.5
Yes	0 .94 (0.72–1.22)		0.9 (0.69–1.19)	
BN sparing				
No	Reference	**0.02***	Reference	**0.04***
Yes	1.41 (1.06–1.88)		1.41 (1.01–1.96)	
NVB preservation				
No	Reference		Reference	
Unilateral	1.55 (1.01–2.4)	**0.04***	1.53 (0.96–2.44)	0.08
Bilateral	1.5 (1.01–2.23)	**0.04***	1.41 (0.91–2.2)	0.1

BMI: body mass index; BN: bladder neck; CCI: comorbidity index; CI: confidence interval; HR: hazard ratio; NVB: neurovascular bundles; PSA: prostate-specific antigen; *statistically significant ($p<0.05$).

UP-01.19

New perioperative risk factors for biochemical recurrence after robotic-assisted radical prostatectomy: A single-surgeon experience in high-volume Canadian centre

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Introduction and Objectives: To identify and assess new predictive factors for biochemical recurrence (BCR) in patients undergoing robotic-assisted radical prostatectomy (RARP) in a Canadian cohort.[1-3]

Methods: After Institutional Board approval, a retrospective review of 326 patients who underwent RARP from October 2006 to May 2013 was accomplished. All cases were performed by a single surgeon (AEH) and data collected prospectively. Univariate and multivariate logistic regression analysis were performed. Variables analyzed include age, body mass index (BMI), year of surgery, statin use, oncological parameters, prostate volume, operative time, estimated blood loss, number of neurovascular bundles (NVB) preservation, NVB preservation time, apical dissection time, capsulotomy, and difficult pelvis anatomy (narrow and deep). BCR was defined as prostate-specific antigen (PSA) >0.2 ng/ml, patients who received adjuvant or salvage radiotherapy, and/or hormonal-

Table 1. UP-01.18. Patient characteristics

Variables	Monofilament (Monocryl®) n=141	Barbed (V-Loc 180®) n=181	*p* value
	Mean (IQR) or number of patients (%)		
Age (years)	60.6 (61)	61 (61)	0.7
BMI			
≤25	26 (18.4%)	36 (19.9%)	
>25–30	70 (49.6%)	64 (35.4%)	**0.04**
>30	28 (19.9%)	42 (23.2%)	
Unknown	17 (12.1%)	39 (21.5%)	
PSA (ng/ml)	6.5 (5.2)	7.1 (6)	**0.002**
Prostate volume (g)	46 (42.5)	52.3 (50)	**<0.001**
Pathological stage			
T2a–b	21 (14.9%)	52 (28.7%)	
T2c	87 (61.7%)	82 (45.3%)	**0.01**
T3a	25 (17.7%)	36 (19.9%)	
T3b–T4	8 (5.7%)	11 (6.1%)	
Gleason score			
6	26 (18.4%)	24 (13.3%)	
3+4	90 (63.8%)	111 (61.3%)	0.1
4+3	13 (9.2%)	15 (8.3%)	
≥8	12 (8.5%)	31 (17.1%)	
Anastomosis time (min)	31.6 (30)	24.5 (23)	**<0.001**
Blood loss (ml)	336 (300)	325 (300)	0.5
BN reconstruction			
No	131 (92.9%)	173 (95.6%)	0.3
Yes	10 (7.1 %)	8 (4.4%)	
NVB preservation			
No	94 (66.7%)	105 (58%)	0.4
Partial	36 (25.5%)	57 (31.5%)	
Complete	II (7.8%)	19 (10.5%)	

BMI: body mass index; BN: bladder-neck; IQR: interquartile range; NVB: neurovascular bundles; PSA: prostate-specific antigen.

deprivation therapy. We include in our study all patients who had at least a two-year followup.

Results: 53 (16.2%) out of 326 patients had BCR. 80 (9.2%) patients had positive surgical margin (PSM), of whom 51(63.7%) had no BCR and 29 (36.3%) had BCR. In univariate analysis, significant predictors of BCR included: year of surgery (p=0.01), PSA (p=0.003), PSA density (p=0.0001), pathological grade (p=0.0001), pathological stage (p=0.0001), PSM (0.0001), mean operative time (p=0.001), NVB release time (p=0.001), and apical dissection time (p=0.007). However, other covariates were not significant (p≥0.05). On multivariate analysis, PSM (p=0.0001), as well as year of surgery (p=0.01) and operative time (p=0.04) were significantly associated with BCR.

Conclusions: PSM, prolonged operative time, and earlier year of surgery were independent predictors of BCR after RARP. These factors emphasize the role of surgeon experience in oncological outcomes post-RARP.

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2. Tanimoto R, Fashola Y, Scotland KB, et al. Risk factors for biochemical recurrence after robotic assisted radical prostatectomy: A single surgeon experience. *BMC Urol* 2015;15:27. http://dx.doi.org/10.1186/s12894-015-0024-7
3. Hashimoto T, Yoshioka K, Gondo T, et al. Preoperative prognostic factors for biochemical recurrence after robot-assisted radical prostatectomy in Japan. *Int J Clin Oncol* 2014;19:702-7. http://dx.doi.org/10.1007/s10147-013-0611-0

UP-01.20

The effect of androgen-deprivation therapy on C-reactive protein levels in men with prostate cancer

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Introduction and Objectives: The potential contribution of androgen-deprivation therapy (ADT) to cardiovascular mortality in men with prostate cancer is very controversial. C-reactive protein (CRP) has long been used as a marker for cardiovascular risk. The purpose of this study is to investigate the effects of ADT on CRP levels in patients with prostate cancer.

Methods: This is a single-centre, prospective study where 44 men undergoing primary hormone therapy or adjuvant/neoadjuvant hormone therapy were recruited and followed with blood work at three-month intervals from initiation of hormone therapy for 24 months. A group of 19 men with prostate cancer under active surveillance were recruited as controls.

Results: There were no differences in age and cardiovascular comorbidities between the ADT group and control group. The ADT group had significant higher Charlson Comorbidity Index when compared to the control group (p<0.001). 32 participants from the ADT group and 14 from the control group remained in the study at 12 months. 21 participants from the ADT group and 11 from the control group remained at 24 months. The ADT group had significantly higher CRP levels at 12 months when compared to controls (p=0.025). There were no significant differences in CRP levels between the groups from 15 to 24 months.

Conclusions: There does appear to be elevation of CRP levels in patients with prostate cancer who are on ADT. Small sample sizes and loss to followup limited analysis beyond 12 months. Future studies with larger cohorts should be made to better understand effects of ADT on CRP levels.

Table 2. UP-01.18. Univariate and multivariate analysis, Cox regression analysis, of various factors in relation to postoperative early continence recovery

	Univariate		Multivariate	
	HR (95% CI)	***p* value**	**HR (95% CI)**	***p* value**
Age	0.98 (0.96–1)	0.06	0.99 (0.97–1.01)	0.5
BMI				
≤25	Reference		Reference	
>25–30	0.95 (0.68–1.32)	0.8	0.9 (0.65–1.26)	0.5
>30	0.88 (0.61–1.27)	0.5	0.88 (0.6–1.29)	0.5
unknown	0.76 (0.51–1.13)	0.2	0.82 (0.55–1.24)	0.4
PSA	0.99 (0.96–1.02)	0.6	1 (0.97–1.03)	0.9
Prostate size	0.99 (0.98–0.99)	**0.002***	0.99 (0.98–0.99)	**0.02***
Pathological stage				
T2a-b	Reference		Reference	
T2c	1.05 (0.78–1.41)	0.7	0.97 (0.72–1.31)	0.8
T3a	0.84 (0.58–1.24)	0.4	0.81 (0.54–1.23)	0.3
T3b–T4	1.3 (0.76–2.23)	0.3	0.97 (0.5–1.88)	0.9
Gleason score				
6	Reference		Reference	
3+4	0.81 (0.58–1.13)	0.2	0.79 (0.55–1.12)	0.2
4+3	0.9 (0.55–1.49)	0.7	0.93 (0.53–1.62)	0.8
≥8	0.93 (0.6–1.44)	0.7	1.18 (0.60–2.02)	0.6
EBL	1 (1–1)	0.6	1 (1–1)	0.5
BN reconstruction				
No	Reference	0.7	Reference	0.9
Yes	0.91 (0.54–1.52)		0.71 (0.5–0.99)	
Anastomotic suture				
Monocryl®	Reference	**<0.001***	Reference	**<0.001***
V-Loc 180®	0.52 (0.41–0.66)		0.53 (0.4 1–0.68)	
NVB preservation				
No	Reference		Reference	
Partial	0.98 (0.75–1.29)	0.9	1.13 (0.84–1.5)	0.4
Complete	0.71 (0.46–1.09)	0.1	0.79 (0.49–1.28)	0.3

BMI: body mass index; BN: bladder neck; CI: confidence interval; HR: hazard ratio; NVB: neurovascular bundles; PSA: prostate-specific antigen; *statistically significant (p<0.05).

Table 1. UP-01.19.

Covariates	No BCR n=273	+ve BCR n=53	*p* value	Multivariate analysis RR (CI 95%; *p* value)
	Mean (median) or number of patients (%)			
Age (years)	60.8 (61)	60.1 (61)	0.65	
BMI	28 (26.8)	28.1 (26.2)	0.97	
Prostate size	49.5 (47)	48 (44)	0.17	
PSA (ng/ml)	6.54 (5.5)	8.9 (6.9)	**0.003**	1.16 (9.9–1.4); 0.17
PSAD	0.14 (0.11)	0.2 (0.14)	**0.006**	0.008 (0–19.1); 0.17
Grade				
6	46 (90.2%)	5 (9.8%)		Reference
3+4	183 (89.7%)	21 (10.3%)	**0.0001**	0.5 (0.16–1.8); 0.30
4+3	17 (60.7%)	11 (39.3%)		3.1 (0.72–13.48); 0.12
≥8	27 (62.8%)	16 (37.2%)		1.76 (0.35–8.71); 0.49
Pathological stage				
T2a-b	65 (89%)	8 (11%)		Reference
T2c	151 (88.3%)	20 (11.7%)	**0.0001**	0.7 (0.25–2.34); 0.64
T3a	48 (76.2%)	15 (23.8%)		1.59 (0.44–5.67); 0.48
T3b–T4	9 (47.4%)	10 (52.6%)		1.15 (0.2–6.49); 0.87
Prop positive cores	3.9 (4)	4.4 (4)	0.17	0.96 (0.69–1.06); 0.78
Surgical margin				
-ve SM	222 (90.2%)	24 (9.8%)	**0.0001**	**Reference**
+ve SM	51 (63.7%)	29 (36.3%)		**5.1 (2.1–12.5); 0.0001***
% biopsy tumour volume	34.3 (33.3)	40.1 (41.6)	0.06	1.01 (0.98–1.06); 0.38
Statin use				
No	180 (90.2%)	36 (16.7%)	0.77	—
Yes	93 (84.5%)	17 (15.5%)		

Table 2. UP-01.19.

Covariates	No BCR n=273	+ve BCR n=53	*p* value	Multivariate analysis RR (CI 95%; *p* value)
	Mean (median) or number of patients (%)			
Year of surgery				
2006–2010	118 (78.1%)	33 (21.9%)	**0.01**	**1 (1.0–1.0); 0.01***
2011–2015	155 (88.6%)	20 (11.4%)		
Operative time (min)	208.2 (200)	249 (226)	**0.0001**	**1 (1–1.02); 0.04***
Blood loss (ml)	326 (300)	340 (300)	0.61	0.9 (0.98–1.0); 0.29
NVB release time (min)	43 (41)	52 (50)	**0.001**	—
Apical resection time (min)	10 (0.11)	14 (0.14)	**0.006**	0.9 (0.94–1.04); 0.71
NVB preservation				
No	49 (80.3%)	12 (19.7%)	0.77	Reference
Unilateral	95 (84.1%)	18 (15.9%)		0.96 (0.3–3.09); 0.95
Bilateral	129 (84.9%)	23 (15.1%)		1.15 (0.35–3.76); 0.81
Compromised pelvis				
No	219 (85.2%)	38 (14.8%)	0.16	—
Yes	54 (78.3%)	15 (21.7%)		
Capulotomy				
No	292 (84.2%)	38 (15.8%)	0.72	—
Yes	71 (82.6%)	15 (21.4%)		
Overall difficulty				
Easy	115 (87.1%)	17 (12.9%)	0.38	—
Mixed	71 (80.7%)	17 (19.3%)		
Difficult	87 (82.1%)	19 (17.9%)		