Unmoderated Posters: Oncology – Prostate

UP-18

Patterns of Systemic Chemotherapy Use in Metastatic Castration Resistant Prostate Cancer Patients: A Population-based Study

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Introduction and Objectives: To examine the rates of chemotherapy use in North American men with metastatic castration resistant prostate cancer (mCRPC). Specific emphasis was placed on identifying predictors of chemotherapy use.

Methods: Patients aged 65 years and older, diagnosed with metastatic prostate cancer (PCa) between 2000 and 2009, treated with androgen deprivation therapy (ADT) were abstracted from the Surveillance Epidemiology and End Results (SEER) Medicare database. Only patients who died of PCa were included. Chemotherapy use was identified according to previously validated methodology. Covariates included age at diagnosis, year of diagnosis, race, income, education, marital status, population density, Charlson Comorbidity Index (CCI) and region. Univariable and multivariable analysis were used.

Results: Of 2070 patients with metastatic PCa who died from PCa, 1,312 patients (63.4%) received chemotherapy. In multivariable analyses, use of chemotherapy was associated with younger age, higher individual annual income, married status, and region of residence (all $p<0.05$). Access to chemotherapy was unrelated to race, education, population density or CCI.

Conclusions: Overall, two-thirds those who died of metastatic PCa received chemotherapy. Important regional differences affected chemotherapy access. Age and socio-economic status were also important determinants. Conversely, access was unrelated to race, education, population density, and CCI.

UP-19

Patterns of Use of Bone-targeted Therapy in Metastatic Castration Resistant Prostate Cancer Patients: A Population-based Study

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Background: To examine the rates of zoledronic acid (ZOL) use in patients with metastatic prostate cancer (PCa), treated with androgen deprivation therapy (ADT), who died of PCa. Specific emphasis was placed on identifying predictors of ZOL use.

Methods: Patients aged 65 years and older with metastatic PCa who received ADT and died of PCa were abstracted from the Surveillance Epidemiology and End Results Medicare database between 2002 and 2009. Zoledronic acid use was identified according to Current Procedural Terminology codes. Covariates consisted of age at diagnosis, year of diagnosis, income, education, marital status, population density, Charlson Comorbidity Index (CCI) and region of residence. Univariable and multivariable analyses were performed.

Results: Of 1,534 patients with metastatic PCa who eventually died of PCa, 670 patients (43.7%) received ZOL. Predictors of ZOL use consisted of younger age, married status and higher education level ($p<0.05$). Importantly, neither, income, race, region of residency, population density or CCI represented barriers to ZOL access.

Conclusions: Of all individuals with metastatic PCa who died of their disease, 43.7% received ZOL. Of all patients, 15% might not have had bone metastases, which implies higher rate of actual use. Nonetheless, the overall rate of ZOL exposure was suboptimal. Importantly, income, race, region of residency, population density and CCI did not represent barriers to ZOL access.

UP-20

Impact on Survival of Prostate Cancers Found in Radical Cystoprostatectomy Specimens: Results of a Multicentre Study

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Introduction and Objectives: Prostate cancer (CaP) is identified in 25-50% of patients undergoing radical cystoprostatectomy (RC) for bladder cancer. The aim of our study was to report the incidence, histopathological features of the prostates and prognosis in patients who had had a RC in 8 of our nation's institutions.

Methods: A retrospective review was performed in 8 of our nation's medical centres on all patients who had had a RC for urothelial carcinoma of the bladder between 1993 and 2008. Patients who had a CaP diagnosed prior to RC were removed from our analysis. Patients' demographic, histopathogical data, and survival outcomes were collected. Univariate and multivariate analyses were performed to determine if the presence and the characteristics of the prostate cancers found had an impact on the observed survival outcomes.

Results: Of the 2287 patients who had a RC in 8 of our nation's medical centres during our study period, 1985 had data available for analysis and no history of CaP. CaP was identified in 25.6% of those patients. Mean age was 66.6 (±10.5 SD) years old in the total cohort, while it was 69.4 (±8.8 SD) in patients with CaP on their specimen ($p<0.0001$). Among those patients, 99.6% had a CaP staged pT2 or above (85.42%: 14.24% = pT2: pT3). 73.2% of the patients who were found to have a CaP had a Gleason score of 6 (3+3) or less. Median follow-up was 2 years in patients with CaP and 37.6% of those patients were deceased at last follow-up. There was no statistical difference in overall survival and bladder cancer specific survival between patients with or without CaP on their specimen ($p=0.072$ and $p=0.133$). No patients died secondary to their CaP during the follow-up period.

Conclusions: The incidental finding of histologic Cap in RC specimens is common. The biology of the CaP does not seem to impact on survival outcomes in the short term and the bladder cancer pathological findings should direct all short-term management.

UP-21

Correlation of PCA3 and Multi-parametric Prostatic MRI in the Detection and Monitoring of Prostate Cancer

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Introduction: Novel prostatic biomarkers and imaging modalities have been proposed to overcome the limits of prostate-specific antigen to improve prostate cancer detection and to decrease the need for unnecessary biopsies and their complications. PCA3 (prostate cancer gene 3) and multi-parametric MRI are new and hopefully promising diagnostic tools in the detection and monitoring of prostate cancer. We set out to determine the correlation between these 2 tests and determine if either were not required if one were abnormal.

Methods: Multi-parametric prostatic MRI and PCA3 tests were performed on an active surveillance (AS) group (30 patients) and to a cohort prior to initial prostate biopsy (106 patients). Abnormality was defined as PCA-3 ratio > 35 or MRI lesion with more than 3 PI-RADS score. Cohen's kappa coefficient was done to determine the correlation of these tests among individual patients.

Results: Data from 136 patients with abnormal PSA on active surveillance or who have suspicion of prostate cancer were retrospectively analyzed between January 2012 to August 2013. The mean PSA was 7.22 ng/mL (0.75-25.2) and the mean age and PCA3 score were 62 and 36.5 respectively. The negative predictive value (NPV) of prostatic MRI and PCA3 in our cohort were 66% and 82% respectively. While, the positive predictive value (PPV) of prostatic MRI and PCA3 were 43% and 62% respectively. The sensitivity and specificity of PCA3 and MRI were 69%, 77% and 53%, 56% respectively. The Cohen's kappa coefficient for the entire cohort is 0.27 indicating fair agreement. The percentages of agreement in both groups were 52% and 53% respectively.

Conclusions: Although, PCA3 and prostatic MRI are valuable diagnostic and monitoring tools for Prostate cancer patients; they demonstrated only fair correlation. Based on these data, the clinician cannot rely on either one alone in the detection and monitoring of prostate cancer.

UP-22

The Role of Prostate Cancer Antigen 3 Test and Multi-parametric Prostatic Magnetic Resonance Imaging for Diagnosis of Prostate Cancer in Patient with Multiple Prior Negative Biopsies

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Introduction: For clinicians, identifying new biomarkers and imaging modalities can better detect prostate cancer and eventually reduce the number of unnecessary biopsies. It has been suggested that the most relevant practice in which the prostate cancer antigen 3 (PCA-3) test could be used for patients with a previous negative prostate biopsy and abnormal elevated PSA levels. Multi-parametric MRI is not currently the first approach for diagnosing prostate cancer, it is useful for directing targeted biopsies, especially in patients with high PSA levels and a multiple previous negative biopsies. We aimed to evaluate the role of prostatic MRI and PCA-3 as additional diagnostic tools for improving the accuracy of the prostate biopsies patients with increased PSA levels and more than two previous negative biopsies.

Methods: This is a retrospective study on patients with more that two previous negative prostate biopsies and elevated PSA levels from January 2012 to August 2013. In total, 260 cases submitted to PCA-3 test were analyzed. Only 21 patients underwent PCA-3, prostatic MRI and more than 2 previous negative prostate biopsy within 6 months.

Results: In patients with >2 negative biopsy, a histological diagnosis of prostate cancer of subsequent biopsy was found in 21 patients of 50 cases (42%). The sensitivity and specificity of MRI were 71.4% and 57.1% respectively (positive predictive value of 45.5%, negative predictive value of 80%). For PCA-3, the sensitivity and specificity were 61% and 67%, respectively (positive predictive value of 58.5%, negative predictive value of 73%. When comparing both test together, 40% had both PCA-3 and MRI positive and MRI alone missed 63% and PCA-3 alone missed 69%.

Conclusions: In patients with a previous negative biopsy and persistently elevated PSA levels, the use of prostatic MRI for indicating sites suitable for re-biopsy may improve the sensitivity of the PCA3 test in the diagnosis of prostate cancer.

UP-23

Immediate Focal Therapy versus Active Surveillance of Clinically Localized Low-intermediate Risk Prostate Cancer

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Introduction: Active surveillance (AS) is recommended for men with localized low- intermediate risk prostate cancer (PCa). Focal therapy may be considered for selected patients. Our aim is to assess the probability of developing unfavourable disease features (UDF) while on AS as a guide to whether institution of immediate rather than delayed hemiablation therapy (HAT) is appropriate.

Methods: Of the 300 patients diagnosed with adenocarcinoma of the prostate between 1992 and 2012 who managed by AS, 148 had biopsy proven unilateral prostate cancer at diagnosis. Patients were followed every 3-6 months with prostate-specific antigen (PSA) and physical examination and were offered repeat ultrasound-guided biopsy every 1-3 years. Using five different definitions of UDF (Table 1), patient data were used to simulate theoretical outcomes if all were managed by immediate HAT or AS. Kaplan-Meier curves were used to evaluate the probability of developing UDF while on AS, or following immediate HAT.

Results: The mean age at the time of diagnosis was 67 years (range 47-81). The median follow-up was 5 (IQR 4- 8) years. Seventy-one (49%) patients

Table 1. UP-23.

		On active surveillance				If Received hemiablation therapy		
	Histological feature	Developed UDF N (%)	Developed UDF ipsilateraly N (%)	3-years UFHR (%)	5-years UFHR (%)	Would develop UDF N (%)	3-years UFHR (%)	5-years UFHR (%)
Definition 1	>20% of cancer at any core	63 (43)	45 (31)	42	47	20 (14)	14	14
Definition 2	>50% of cancer at any core	15 (10)	14 (10)	9	15	1 (0.7)	1	1
Definition 3	Predominant Gleason pattern of 4	16 (11)	13 (9)	11	16	7 (5)	4	7
Definition 4	Definition 1 or 3	66 (45)	48 (32)	45	49	23 (16)	15	17
Definition 5	Definition 2 or 3	22 (15)	18 (12)	15	19	8 (5)	5	7

UFHR: unfavourable feature hazard risk; UDF: unfavourable disease features.

had >1 repeat biopsy. Baseline characteristics included a median (IQR): PSA of 5.3 ng/mL (3- 7), prostate volume of 42.3 gm (33-62), number of biopsy cores taken of 10 (6-10), maximum cancer percentage on any core of 10 (5-20) (see Table 1 for further results).
Conclusions: Many men (particularly those with GS ≤ 6) did not develop UDF during the follow-up, and thus could be spared the negative consequences of immediate HAT. An accurate definition of clinically significant prostate cancer requiring treatment will be essential in order to properly assess the benefit of HAT. Further studies are needed to support our finding with the use of multiparametric MRI for more accurate localization of PCa.

UP-24

PSA Bounce after Standard Fractionation or Hypofractionated External Beam Radiotherapy and Brachytherapy: An Investigation of Its Etiology and Comparison of Its Occurrence

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Introduction and Objectives: This study aims to explore potential risk factors for a PSA bounces (PSAb) in patients treated with either brachytherapy (BT) or external beam radiotherapy (EBRT).
Methods: We identified 366 patients with low-risk prostate adenocarcinoma with a follow-up of at least 36 months. Patients were treated with either: 1) EBRT 76Gy in 38 fractions (n=58) 2) extreme hypofractionated EBRT, 45 Gy in 9 once-weekly fractions (n=74) 3) LDR brachytherapy (BT), prescribed dose 144 Gy (n=234). All were hormone-naïve. A PSAb was defined as a PSA rise of ≥0.2 ng/mL within the first 3 years after treatment. Univariate and multivariate logistic models were used to assess the association between clinical factors and occurrence of PSAb.
Results: There was no significant difference (p=0.45) for the occurrence of at least one PSAb between treatment groups: 38% in the standard EBRT, 31% in extreme hypofractionation and 35% of BT. We found that younger age (OR=0.94, 95% CI 0.90-0.98, p=0.002) was associated with a higher risk of PSAb upon multivariate analysis. Factors associated with less aggressive cancer, such as fewer positive biopsy cores (OR=0.26, 95% CI 0.08-0.83, p=0.026) and, within a separate multivariate model, a higher Cancer of the Prostate Risk Assessment (CAPRA) score were also predictive of PSAb occurrence (CAPRA 3 vs. 1: OR=0.44, 95% CI 0.22 0.87, p=0.02). Associated with a shorter interval before PSAb were younger age (HR=0.95, 95% CI 0.92 0.98, p=0.0009), fewer positive biopsy cores (HR=0.3476, 95% CI 0.14 0.89, p=0.027), and, on separate analysis, a lower CAPRA score (CAPRA 3 vs. 1: HR=0.51, 95% CI 0.28 0.92, p=0.025).
Conclusions: Patients experience comparable rates of PSAb after EBRT and LDR brachytherapy. Predisposing factors include younger age and factors associated with less aggressive cancer. We hypothesize that these transient elevations in PSA values result from late damage to healthy prostatic tissue.

UP-25

Do 5-Alpha-Reductase Inhibitors Have a Radiosensitizing Effect?

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Introduction and Objectives: The combination of 5-alpha-reductase inhibitors (5-ARI) and permanent seed brachytherapy (BT) has the potential benefit of increasing the efficacy of radiation through its antiandrogen effect. We investigated the effect of this combination on biochemical control, PSA-bounce (PSAb) and urinary symptoms.
Methods: We identified 49 patients from our database of 850 treated with at least 1 month of 5-ARI before BT. 68% had a 5-ARI for ≤6 months (mean 5.5, SD 4.4 months) before BT and 77% for 1 month following BT (1.8, SD 1.5 months). Minimum follow-up was 2 years. Patients taking a 5-ARI were compared to 236 randomly chosen patients. Biochemical failure (bF) was defined as nadir +2. Both groups were compared using T-test or Fisher's Exact Test.
Results: Pre-treatment PSA was significantly lower (p=0.017) in the 5-ARI group (mean=5.1ng/mL) than the control group (6.1ng/mL). Prostate volume at the time of BT as well as baseline IPSS (international prostate symptom score) score were similar between both groups was similar (38.9 cc vs. 37.5 cc, p=0.43) and p=0.91, respectively). Although there was no bF in the 5-ARI group compared to 3.8% in controls, this was not statistically significant (p=0.37 Fisher's Exact Test and p=0.30 Log Rank test) although that may be due to a significantly longer (p<0.001) follow-up in the control group (mean 46.8 vs. 33.4 months). The last PSA in patients without any bF between both groups was not significantly different (mean 0.32 vs. 0.28 ng/ml, p=0.83). Patients on a 5-ARI were not more likely to have a PSA <0.5 ng/mL, 84% vs. 75% (p=0.27). There was a trend (p=0.084) towards less frequent PSAb in the 5-ARI group (18.4% vs. 31.8%). IPSS within the first year was not different (p=0.5-0.9).
Conclusions: There seems to be no clinical benefit for the use of short-term 5-ARI in combination with BT. Longer follow-up will show whether the so far lower failure rate and lower PSAb will become significant.

UP-26

The Effect of Cavernosal Neurvascular Preservation during Radical Prostatectomy on Surgical Margin Status: A Systematic Review and Meta-analysis

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Introduction and Objectives: Cavernosal neurovascular preservation decreases risk of post-prostatectomy erectile dysfunction. However, the impact of nerve sparing on oncologic outcomes is controversial. The objective of this study was to summarize the published data on associations between nerve spare and positive surgical margin (PSM).
Methods: A systematic literature search was performed for publications published between 2000 and 2012. Studies were included if they compared clinical outcomes of nerve sparing and non-sparing radical prostatectomy. Screening and data abstraction was performed independently by 2 reviewers. PSM data was only included if stratified by pathological stage. A meta-analysis was performed to calculate pooled estimates for risk of a PSM in nerve sparing (bi- and unilateral) and non-sparing groups.
Results: A total of 1674 abstracts were identified and screened, 149 full text articles were reviewed and 89 studies met inclusion criteria. The analysis of PSM included 13 studies with 10,311 patients. Five studies used a laparoscopic surgical approach, 4 robotic-assisted, 3 open and 1 study used multiple approaches. Among patients with pT2 tumours, nerve sparing was associated with a 60% increased relative risk of a PSM (RR 1.60; 95%CI 1.24 to 2.07; p<0.0001), corresponding to a 3% absolute increased risk (95%CI 2% to 4%; p<0.0001). Among patients with pT3 tumours, nerve-sparing was associated with a 19% decreased relative risk of a PSM (RR 0.81; 95%CI 0.71 to 0.94; p=0.004), corresponding to a 6% absolute decreased risk (95%CI 2% to 10%; p=0.008).
Conclusions: Information about benefits and harms of nerve preservation is important for surgical planning. While nerve preservation improves postoperative sexual function, there is an increased risk of a PSM for organ-confined tumours. Our findings for patients with extraprostatic disease may be explained by unadjusted confounding factors such as tumour size and extent of periprostatic extension.

UP-27

Can 11C-Choline PET/CT Detect Disease Progression in Active Surveillance of Prostate Cancer?

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Introduction and Objectives: Active Surveillance (AS) is an increasingly popular management strategy for men diagnosed with low-risk indolent Prostate cancer (PCa). Current tests (PSA, clinical staging, and prostate biopsies) to monitor indolent disease are lacking predictive accuracy. Hence, 11C-Choline PET, which has previously been shown to have excellent detection rates in local and distant recurrence of PCa, was

hypothesized as an additional means for identifying earlier aggressive PCa warranting treatment in the active surveillance setting.
Methods: In total, 24 patients on AS had clinical assessments and PSA testing every 6 months, with 11C-choline PET scans and prostate biopsies performed annually. Descriptive statistics were used to analyze 11C-Choline PET data, including the sensitivity and specificity to identify PCa and progressive disease (PD).
Results: 68 serial 11C-Choline PET scans (median 3 per patient), were analyzed. With a mean follow-up of 24 months (2.9-46.4), 11 out of 24 (45.8%) low risk PCa patients developed PD and received definitive treatment. PCa detection rate with 11C-Choline PET showed moderate sensitivity (76.1%) but lower specificity (50.0%). PD detection with 11C-Choline PET also showed moderate sensitivity (81.8%) and lower specificity (30.8%). Interestingly, most patients (81.8%) that developed disease progression had a lesion detected by their initial baseline 11C-Choline PET scan. Unfortunately, serial annual 11C-Choline PET scans did not provide additional value.
Conclusions: 11C-Choline PET scans may provide beneficial information to patients enrolling in AS programs. Preliminary data from this study suggests that 11C-Choline PET may be considered when enrolling patients on AS programs, as it can detect patients who subsequently develop disease progression. Application of 11C-Choline PET in PCa patients considering AS requires further investigation.

UP-28

The Impact of Robotic-assisted Radical Prostatectomy on the Use and Extent of Pelvic Lymph Node Dissection in the "Post-Learning Curve" Era

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Introduction and Objectives: Despite the established advantages associated with extended pelvic lymph node dissection (PLND), several studies reported a disconcerting decrease in the utilization rate of PLND in recent years, even among patients with intermediate- and high-risk prostate cancer (PCa). Many have indicated the advent of minimally invasive surgery, such as robotic-assisted radical prostatectomy (RARP), as a predominant reason for declining rates of PLND. We sought to revisit the utilization rate of PLND and its extent in a contemporary population-based cohort of North American men, as well as the impact of surgical approach (open radical prostatectomy [ORP] vs. RARP) on the use of PLND.
Methods: Relying on the Surveillance Epidemiology and End Results Medicare-linked database, 5804 patients with non-metastatic PCa undergoing ORP or RARP between years 2008 and 2009 were identified. Multivariable logistic regression analyses tested the relationship between surgical approach (RARP vs. ORP) and: (1) the rate of PLND (pNx vs. pN0-1); and (2) the extent of PLND (limited vs. extended).
Results: Overall, 3,357 (57.8%) patients underwent a PLND. The proportion of patients treated with PLND was significantly higher among ORP vs. RARP patients: 71.2 vs. 48.6%, respectively ($p<0.001$). In addition, the median number of lymph nodes removed was significantly higher for patients treated with ORP vs. RARP: 5 vs. 4, respectively ($p<0.001$). In multivariable analyses, ORP was associated with 2.7- and 1.3-fold higher odds of undergoing PLND and of receiving an extended PLND compared to RARP, respectively (both $p\leq0.001$). Stratified analyses according to disease risk classifications revealed similar trends.
Conclusions: Our results indicate that RARP remains associated with absence of PLND and suboptimal extent when performed even in patients with high-risk tumours. These observations can no longer be attributed to the "learning-curve" period.

UP-29

A Contemporary Analysis of Predictors of Lymph Node Positivity at Radical Prostatectomy and Clinical Outcomes at a Tertiary Care Referral Centre

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Introduction and Objectives: The extent of pelvic lymph node dissection (PLND) at the time of radical retropubic prostatectomy (RRP) varies among surgeons and institutions. Differences mainly focus on candidacy for node dissection and the limit of dissection (limited versus extended). We analyzed our local experience of lymph node outcomes.
Methods: In this retrospective study with institutional board ethics, data was collected on consecutive patients undergoing RRP with PLND from January 2003 to June 2013 by 2 academic uro-oncologists. Extracted information included surgical pathology and patient, biopsy, and biochemical recurrence (BCR) characteristics. A univariate and multivariate analysis was conducted using SAS software.
Results: 420 consecutive patients, of whom 411 underwent a RRP with PLND and 9 aborted prostatectomies, had median follow-up of 46 months. Median patient age was 60 with a mean preoperative PSA of 11. Overall lymph node metastases rate was 16.1%. Of these N1 patients, the average number of positive nodes was 2.3 with an average removal of 13.4 nodes. Anatomic regions of positive pelvic lymph node metastasis were 54 percent in hypogastric area, 13 percent in obturator area, and 33 percent were external iliac. 2 patients with N1 disease died and 79 percent had BCR. Median time from treatment to BCR was 4.5 months with a median PSA of 0.28. Multivariate analysis showed that year of surgery ($p=0.04$), Gleason $\geq 4+3$ ($p=0.0003$), and the biopsy ratio of total cancer length: total length of all cores (p less than 0.0001) was associated with node positivity.
Conclusions: This contemporary series of RRP for prostate cancer shows a high rate of lymph node metastases (16%). Performing a limited pelvic lymph node dissection would under stage 54% of our patients. To our knowledge, this study is the first to demonstrate that the ratio of preoperative biopsy total cancer length: total length of all cores was associated with node positivity.

UP-30

Distant Metastases of Men Treated With Initial Active Surveillance

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Introduction and Objectives: Active surveillance (AS) is an approach for reduction of overtreatment for favourable risk prostate cancer (PCa). However some cancer metastasizes despite close monitoring of the disease. The clinical background and long-term natural history of these patients are uncertain. In this present work we have reviewed the detailed case report of 27 patients in AS who developed metastatic prostate cancer. We analyzed their clinical and pathological correlates of metastases.
Methods: This is a retrospectively analysis that reviewed patients who selected AS at the Sunnybrook Health Sciences Centre, Toronto, Ontario from 1995 - 2012. Definitive intervention was offered to those patients with Grade progression, unequivocal clinical progression or a shorter PSA doubling time of less than 3 years. We applied the log-rank test and Cox model to a Kaplan Meier analysis of time to metastases in these patients.
Results: Interim results reveal that the mean age of these patients is 71 years. Mean PSA is 7.1 ng/mL and 5 patients of over 10 ng/mL of PSA. Three patients with clinical stage T2b/T2c were also included in the analysis. Eleven patients had a Gleason score of 7 on their initial biopsy. The most common metastatic site is the bone. Imaging revealed that only 2 patients did not represent any metastasis. The median duration to metastasis was 7.4 years. It was seen that 15 patients died from PCa with 5 patients who died from other causes. Out of all the patients included in this analysis 13 patients had a grade progression and 6 patients had high grade cancer on the confirmatory biopsy. The group of GS 8 or more on the confirmatory biopsy has shorter duration time to metastasis (GS 6 vs. GS 8-10, $p=0.017$).

Conclusions: Interim conclusion revealed that 6 patients had high grade cancer on confirmatory biopsy despite low-grade cancer at diagnosis. These patients are likely to develop metastasis more than patients with low-grade cancer.

UP-31

Barriers and Enablers of Active Surveillance: The Canadian Prostate Cancer Biomarker Network Initiative

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Introduction and Objectives: Advances in prostate cancer screening have increased the proportion of early-stage disease at the time of diagnosis. This early detection contributes to the overtreatment of man for whom interventional therapy is neither required nor appropriate to ensure a lifespan uncompromised by cancer. The Canadian Prostate Cancer Biomarker Network is interested in exploring the perspectives of men diagnosed with low grade PCa and healthcare providers about their experiences regarding active surveillance (AS) to identify the factors that influence the decision-making.

Methods: Focus groups have been held with men diagnosed with prostate cancer and with physicians in four provinces: Quebec, Ontario, Manitoba, British Columbia. Data were subjected to a descriptive qualitative content and theme analysis.

Results: This presentation will focus on the men's perspective. Most patients did not know about AS prior to their diagnosis. Most engaged in significant information seeking from health care professionals, other patients/survivors, and the Internet. The main influences on their decisions about being followed through AS include: information about treatment options and AS, understanding about their own disease status, conversations with physicians, family/friend experience with cancer, family member responses, and quality of life considerations. Comfort with being on AS was based on the notion that they were able to safely postpone treatment with all the inherent side effects and that they were being monitored closely and, if the need arose, they could access appropriate treatment quickly. Men's decisions to discontinue active surveillance was linked to a change in disease status.

Conclusions: Going forward, the rich in-depth data collected during the focus groups will be used to inform questionnaires that can provide a quantitative measure of the importance of different barriers and facilitators from the patient and practitioner point of view.

UP-32

Active Surveillance for Low-risk Prostate Cancer Patients: The Canadian Prostate Cancer Biomarker Network Initiative

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Introduction and Objectives: In active surveillance (AS), practitioners delay curative treatment strategies in low-risk patients until there is evidence of disease progression, at which time active treatment is initiated. Although the uptake of active surveillance appears to be increasing, the true uptake in Canada remains largely unknown. The Canadian Prostate Cancer Biomarker Network (CPCBN) is focused on the identification of markers and other factors that predict risk in order to inform clinical management decisions, and in particular AS. In addition, through its knowledge to action plan, the CPCBN is interested in gathering Canadian statistics regarding the use of active surveillance in low risk prostate cancer.

Methods: Using a database interrogation approach in four different provinces the CPCBN evaluating the use of AS in men who underwent a biopsy in 2010. Clinical and pathological information are collected for a period of 12 months following the last biopsy of 2010. In parallel, using a focus group approach, patients and health care providers in different provinces were interrogated to identify perceived barriers and facilitators to AS.

Results: Interestingly, early results of the analysis suggest different practice patterns between and within provinces. A larger proportion of patients who chose AS were observed in academic centres when compared to the non-academic centres.

Conclusions: More in depth analysis will be required to understand the root of these differences, and also to determine whether AS uptake is changing over time.

UP-33

Salvage High Intensity Focused Ultrasound of Radio-recurrent Prostate Cancer: Clinical Outcomes of a Prospective Trial at Tertiary Referral Centre

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Introduction and Objectives: Salvage high intensity focused ultrasound (s-HIFU) is a minimally invasive potentially curative therapeutic option for locally radio-recurrent prostate cancer (rr-PCa), when other options (mainly endocrine therapy) are limited. Aim of this study was to assess safety and oncological outcomes of s-HIFU on a prospective cohort.

Methods: Patients with biopsy-proven non-metastatic rr-PCa and serum PSA <10 ng/ml were enrolled. All pts underwent s-HIFU with Sonablate-500 system, and TRUS biopsy (Bx) at 6 months. Follow-up included serum PSA at 3 months (mo) and every 6 months thereafter. Treatment failure was defined by biopsy positive for PCa and/or biochemical failure, defined as per Phoenix criterion (PSA nadir + 2 ng/mL). Endpoints of the study were: safety, failure rate and Overall Survival.

Results: We enrolled 78 pts, of which 20 received hormonal therapy prior to s-HIFU. Mean PSA at baseline, 3 and 12 mo was 4.3±2.9, 1.7±2.6 and 1.9±2.3 ng/mL, respectively (p=0.1). At 6 mo, of 71 who underwent TRUS Bx, 14 (19.7%) had residual PCa. With mean follow-up of 63.3 mo, 25 pts (32.8%) have failed s-HIFU. Four patients (5.2%) are incontinent. At 1 year, IPPS (7.5±4.8 vs. 11.3±8.2; p=0.22) and IIEF-5 (9.4±8.1, 5.1±6.3; p=0.07) scores were not significantly changed. There were 16 Clavien II complications: acute retention (7), UTIs (6) and urethral strictures (3). Rectourethral fistula (Clavien IIIb) was detected in 3 cases. 1 patient developed urinary retention with malfunctioning suprapubic catheter requiring laparotomy (Clavien IVb). No mortality or metastases were recorded at follow-up.

Conclusions: With limited therapeutic options, S-HIFU is a viable and effective treatment option for rr-PaC, with a relatively low morbidity, provided stringent selection criteria are used. It is mandatory to take into account the increased risk of fistula when counseling pts for this minimally invasive procedure.

UP-34

Enumeration of Prostate Cancer Microparticles as a Tool to Identify Prostate Cancer

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Introduction: Prostate cancer (PCa) cells release a large number of small fragments called microparticles (PCMPs). These nanoparticles offer a non–invasive means of sampling the primary tumour and provide an ideal platform for a prostate cancer–specific fluid biopsy. Our blood test enumerates PCMP in minute volumes of patient plasma in a high–throughput and multi–parametric manner. This pilot study aims to validate the clinical utility of this microparticle–based blood test to successfully discriminate patients with PCa.

Methods: We used the A–50 Micro nanoscale flow cytometer (Apogee Flow Systems Inc.) to enumerate cancer microparticles present in 148 plasma samples. Group 1 included 35 individuals with no known cancers. This group comprised of either young individuals (age <35) or older men undergoing TURP for BPH. Group 2 included 113 plasma samples from patients with localized (n=113) obtained from Ontario Institute of Cancer Research. We used monoclonal antibodies specific to prostate specific membrane antigen (PSMA) and Ghrelin peptide, a ligand for the growth hormone secretagogue receptor (GHSR) which is over–expressed on prostate cancer cells. Dual positive PCMPs (PSMA+ve, Ghrelin+ve) were enumerated in both cohorts.

Results: We found significantly higher counts ($p<0.01$, ANOVA, Bon Ferroni test) of PCMP (PSMA+ve, Ghrelin+ve) in patients with PCa. The scatterplots with means and respective 95% confidence intervals reveal a cutoff (green dashed line) for distinguishing patients with PCa. With this cutoff, the blood test is 89% accurate in identifying patients with PCa (localized PCa cohort) with 20% of patients being mistakenly identified as having PCa. No significant differences (one–way ANOVA test) were observed between PCMP levels, Gleason score and stage of disease.

Conclusions: Our initial results show that PCMP levels have the potential to be the "Next Generation Screening Tool" for Prostate Cancer. Implementing this test in a large prospective clinical study will allow us to evaluate the performance characteristics of the test prior to prostate biopsy.