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Abstract 40

Do patients with ischemic heart disease undergo prostate-specific antigen screening?

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Introduction: Prostate-specific antigen (PSA) testing can improve early prostate cancer detection; however, numerous factors can influence patients' willingness and ability to undergo PSA testing. We aimed to assess the association between ischemic heart disease (IHD) diagnosis and PSA testing.

Methods: We performed a cross-sectional study investigating the impact of various degrees of IHD on PSA testing. We assessed 3822 male respondents aged 55–75 from the 2018 year of the National Health Interview Survey (NHIS). Men were stratified according to the degree of IHD (none, history of angina pectoris (AP), history of myocardial infarction (MI), or history of neither, but with a diagnosis of IHD. Multivariable logistic regression analysis was used to assess the relationship between IHD and being tested for PSA, adjusting for known cofounders.

Abstract 40. Table 1. Multivariable logistic regression analysis results demonstrating relationships with likelihood of being PSA tested

	Patient has ever received as PSA test		
	OR	95% CI	p
Age	1.060	1.046–1.074	<0.001
Race (White reference)	–	–	–
Black	1.159	0.913–1.472	0.226
Asian	0.507	0.344–0.748	0.001
Native American & other	0.749	0.496–1.131	0.169
Region (Northeast reference)	–	–	–
Midwest	0.904	0.716–1.140	0.393
South	1.128	0.904–1.407	0.286
West	0.830	0.655–1.051	0.122
Smoking status (Never reference)	–	–	–
Current	0.573	0.469–0.700	<0.001
Former	0.914	0.774–1.080	0.292
Ischemic heart disease (None reference)	–	–	–
Myocardial infraction	0.885	0.686–1.141	0.347
Angina pectoris	1.588	0.884–2.852	0.122
General IHD diagnosis	1.630	1.115–2.383	0.012
Sexual orientation (heterosexual reference)	–	–	–
Homosexual	2.032	1.216–3.394	0.007
Bisexual/other	1.178	0.538–2.576	0.682
Ever had cancer (no reference)	–	–	–
Yes	2.789	2.173–3.579	<0.001
Marital status (without partner reference)	–	–	–
With partner	1.865	1.605–2.167	<0.001

Results: Multivariable logistic regression demonstrated that males with a history of IHD (no MI or AP) were more likely to have ever been PSA tested than males without IHD (OR 1.630, 95% CI 1.115–2.383, p=0.012) (Table 1). Additionally, older age (p<0.001), having a partner (vs. no partner, p<0.001), homosexual sexual orientation (vs. heterosexual orientation, p=0.007), and a history of cancer (vs. no history, p<0.001) all increased likelihood of being PSA tested. In contrast, Asian race (vs. White, p=0.001), and being a current smoker (vs. no smoking history, p<0.001) decreased the likelihood. Interestingly, males with a history of a symptomatic IHD (MI or AP) were not shown to be more likely to undergo PSA testing.

Conclusions: Our results suggest that males with non-symptomatic IHD are more likely to be PSA tested. Males with symptomatic IHD do not seem to undergo more PSA screening, perhaps due to lower suggested life expectancy. Awareness of discrepancies in PSA testing in men with IHD should be raised among healthcare professionals.

Abstract 41

The association of annual household income with prostate cancer diagnosis, treatment, and outcomes

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Introduction: Financial difficulties can lead to cancer patients delaying or deferring necessary care, resulting in later presentation with more advanced disease and worse clinical outcomes. We aimed to assess the association between annual household income (HHI) and prostate cancer outcomes.

Methods: A cross-sectional study was conducted assessing 488 853 prostate cancer patients from the Surveillance, Epidemiology, and End Results (SEER) program between the years of 2010 and 2018. The association between annual HHI and diagnosis and outcomes of prostate cancer were examined using analysis of variance (ANOVA) and Chi-squared analyses comparing clinical measures based on categorical HHI groupings.

Results: Sociodemographic data and univariate analyses are displayed in Table 1. The average age across all HHI classifications was 66.6 years. ANOVA analysis demonstrated that patients with a lower HHI had higher PSA levels upon diagnosis (12.10 vs. 10.90, 10.61, and 10.37 for ≤35K, 35–55K, 55–75K, and >75K, respectively, p<0.001). Patients with lower HHI also demonstrated lower rates of undergoing surgical treatment (31.9%, 36.9%, 37.6%, and 35.1% for ≤35K, 35–55K, 55–75K, and >75K, respectively, p<0.001) and the highest rate of disease metastasis to bone upon diagnosis (6.3%, 6.6%, 5.7%, and 5.8% for ≤35K, 35–55K, 55–75K, and >75K, respectively, p<0.001). Lastly, patients with lower HHI demonstrated progressively higher rates of cancer-specific-mortality (8.4%, 6.8%, 6.5% and 5.1% for ≤35K, 35–55K, 55–75K, and >75K, respectively, p<0.001), as well as higher overall mortality (21.2%, 18.0%, 15.0%, and 11.9% for ≤35K, 35–55K, 55–75K, and >75K, respectively, p<0.001).

Conclusions: These data suggest that prostate cancer patients with lower household income are diagnosed with more aggressive disease, tend to undergo surgery at lower rates, develop more advanced disease, and endure worse clinical outcomes than those in higher income brackets. Healthcare providers should be made aware of the clear associations between lower income and more aggressive disease at diagnosis, lower rates of surgical treatment, and worse cancer-specific and overall mortality.

Abstract 41. Table 1. Sociodemographic data and univariate analyses stratified by household income

	Household income (dollars)				
	<35 000 (n=7577)	35 000–55 000 (n=112 951)	55 000–75 000 (n=219 382)	75 000+ (n=148 943)	p
Mean age (years)	66.72	66.65	66.58	66.67	0.10
Cancer-specific mortality (n, %)	638 (8.4%)	7690 (6.8%)	14 253 (6.5%)	7574 (5.1%)	<0.001
Overall mortality (n, %)	1605 (21.2%)	20 311 (18.0%)	33 003 (15.0%)	17 790 (11.9%)	<0.001
Received surgical treatment (n, %)	2416 (31.9%)	41 725 (36.9%)	82 459 (37.6%)	52 348 (35.1%)	<0.001
Bone metastasis on diagnosis (n, %)	476 (6.3%)	6345 (5.6%)	12 515 (5.7%)	8612 (5.8%)	<0.001

Abstract 42

Assessing racial disparities in treatment patterns and outcomes in castrate-resistant prostate cancer patients: Real-world data from a regional cancer center in Ontario

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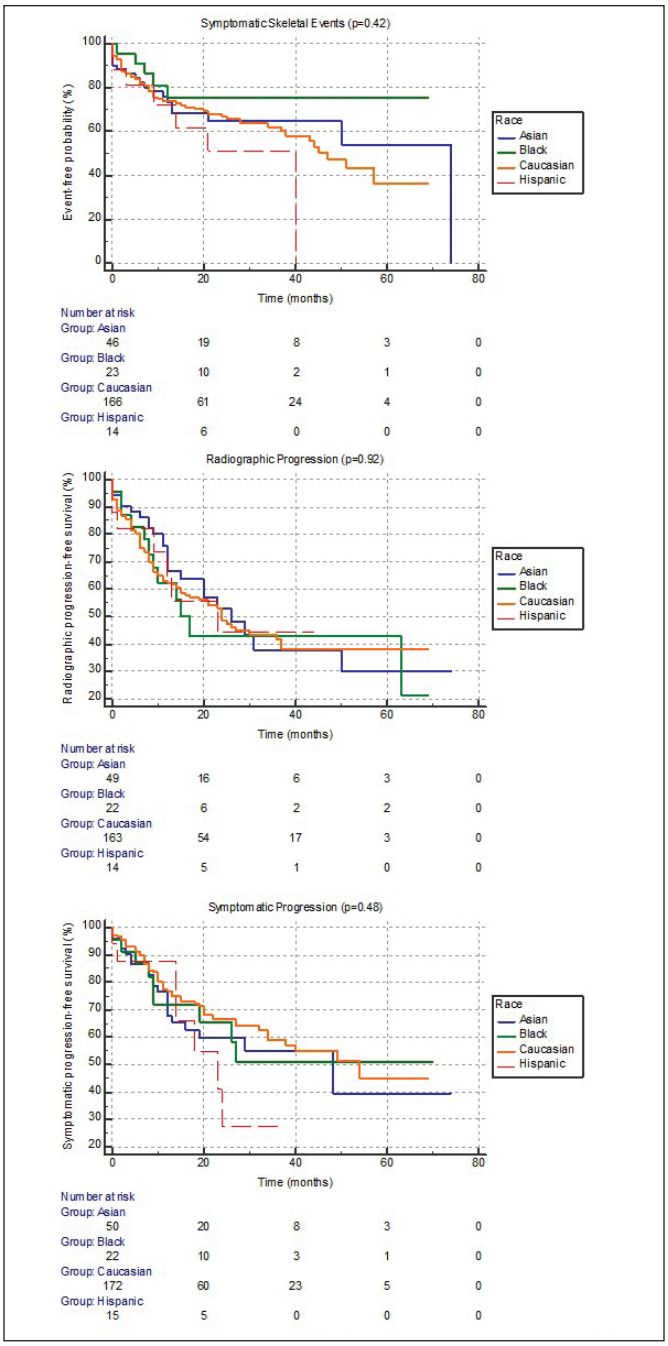
Introduction: There are many socioeconomic factors linked to disparities in healthcare delivery. In the last decade novel androgen receptor axis therapies for advanced prostate cancer were introduced; however, access to these treatments may not be equitable across all patient groups. This study aims to investigate castrate-resistant prostate cancer (CRPC) treatment patterns and outcomes at a Canadian center serving one of the most diverse communities worldwide, with >50% of its constituents identifying as immigrants.

Methods: A retrospective chart review of 276 CRPC patients from 2012–2020 was conducted. Sociodemographic, clinical, and disease features, treatments received, and outcomes were assessed. Outcomes included symptomatic skeletal events (SSE), symptomatic (SP), and radiographic progression (RP). Race was determined by self-reported questionnaires, or using a validated deep learning model that predicts race based on first and last names. Chi-squared tests were used to evaluate differences in primary treatment and first-line CRPC therapy stratified by race. Time to SSE, SP, and RP were assessed by Kaplan-Meier curve analysis.

Results: The median followup was 16 months (IQR 8–30). Race was available for 50% of patients, of which our deep learning model was internally validated, showing 90% accuracy. Among all patients, 183 (66%) were Caucasian, 24 (9%) Black, 52 (19%) Asian, and 17 (6%) Hispanic. Race was not associated with treatment choice for the primary tumour nor for first-line CRPC therapy (p=0.08 and 0.28, respectively). When stratified by race, no differences in time from CRPC to SSE, SP, or RP were observed (Figure 1).

Conclusions: Across this diverse immigrant population, no disparities in treatment patterns or outcomes were observed when stratified by race. While this finding is not unexpected given the comprehensive approach by our program and universal healthcare, it underscores the importance of outcomes assessment for all diseases to ensure equitable access and quality of care.



Abstract 42. Figure 1. Time from diagnosis of CRPC to symptomatic skeletal events, symptomatic and radiographic progression, stratified by race.

Abstract 43

Impact of piflufolastat F-18 on renal function in high-risk prostate cancer patients from the OSPREY trial

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Introduction: Piflufolastat F-18, a PSMA-targeted radiopharmaceutical, is approved for imaging prostate cancer patients at the time of initial staging and disease recurrence. As part of its normal biodistribution, piflufolastat F-18 is eliminated via urinary excretion. We report on the impact of piflufolastat F-18 on renal function in men with high-risk prostate cancer.

Methods: Piflufolastat F-18-PET/CT was evaluated in NCCN high-risk prostate cancer patients scheduled to undergo radical prostatectomy with pelvic lymphadenectomy. A single dose of 9 mCi (333 MBq) of piflufolastat F-18 was administered IV, followed by PET/CT 1–2 hours thereafter. Serum creatinine (mg/dL) was measured at baseline and within 28 days of dosing. Changes were measured and stratified by estimated glomerular filtration rate (eGFR).

Results: A total of 268 men (median PSA 9.7 ng/mL, range 1.2–125.3, n=267) underwent piflufolastat F-18-PET/CT. Baseline creatinine levels (mean ± SD, median) were 0.979±0.187, 0.949 mg/dL; n=264; and post-piflufolastat F-18 levels were 0.987±0.206, 0.949 mg/dL, n=252. Minimal changes in creatinine levels (mean ± SD, median) were seen after piflufolastat F-18 dosing and this lack of effect was observed over a range of eGFRs (Table 1).

Conclusions: Despite high renal uptake of piflufolastat F-18, kidney function remained unchanged after dosing, without any change in creatinine clearance at all eGFR ranges. Piflufolastat F-18 appears to be safe/well-tolerated including men with mild/moderate renal insufficiency.

Funding: Progenics Pharmaceuticals, Inc.

Abstract 43. Table 1. Change in creatinine (mg/dL) (baseline to post)

eGFR (mL/min)	Mean±SD (95% CIs)	Median (range)
All Patients (n=249)	0.003±0.118 (-0.012 – 0.018)	0 (-0.519 – 0.678)
30 to <60 (n=16)	-0.070±0.203 (-0.178 – 0.038)	0 (-0.519 – 0.200)
60 to <90 (n=168)	0.0002±0.115 (-0.017 – 0.018)	0 (-0.210 – 0.678)
≥90 (n=65)	0.029±0.085 (0.008 – 0.050)	0.023 (-0.271 – 0.300)

Abstract 44

Changes in planned disease management after piflufolastat F-18 PET/CT in men with biochemically recurrent prostate cancer and low PSA levels: A CONDOR study secondary analysis

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Introduction: Piflufolastat F-18 is a FDA-approved PSMA-targeted imaging agent for prostate cancer patients at initial staging and disease recurrence. In a phase 3 study of prostate cancer patients with biochemical recurrence, 63.9% (131/205) of participants had a change in intended disease management plan based on pre- and post-piflulfolastat F-18 PET/CT medical management questionnaires (MMQs). Clinical utility of piflufolastat F-18 scanning in men with very low/low PSA levels (<0.5 ng/mL) hasn't been previously described. We report changes in intended management in this patient subset.

Methods: Men ≥18 years old with rising PSA after definitive prostate cancer therapy and negative/equivocal imaging were enrolled. A single ~9 mCi (333 MBq) dose of piflufolastat F-18 was administered followed by PET/CT 1–2 hours later. Treating physicians completed a pre-PET MMQ documenting the initial intended management plan for their patients based on available clinical information. After PET, a post-PET MMQ was completed in light of PET findings. Differences from pre-scan recommendations were reported as changes in intended management plans.

Results: A total of 208 men (median PSA 0.8 ng/mL , range 0.17–98.45, n=202) underwent piflufolastat F-18-PET/CT; 200 patients had both baseline PSAs and completed MMQs. Sixty-nine patients had baseline PSA levels ≤0.5 ng/mL; 27 (39.1%) recorded a change in intended management based on positive (n=20) or negative (n=7) PET: salvage local-to-systemic therapy (n=15); systemic-to-local therapy (n=3); observation-to-treatment (n=5); and treatment-to-observation (n=4).

Conclusions: The frequency of changes in intended disease management in biochemically recurrent prostate cancer patients with low baseline PSA (≤0.5 ng/mL) was 39.1%. Both negative and positive PET/CT results impacted treatment recommendations and can provide useful and actionable information.

Funding: Lantheus

Abstract 45

Prostatic-specific antigen screening and biopsy experiences for men at risk of prostate cancer: Results of the biomarkers and prostate cancer prevention and environment study

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Introduction: Prostate cancer (PCa) is the most common non-skin malignancy among Canadian men. Prostatic-specific antigen (PSA) testing is performed to screen for the disease, and a prostate biopsy is required to confirm the diagnosis. These procedures can have adverse effects and affect the quality of life of men; however, not much is known on how men at risk of PCa experience screening and diagnosis procedures, and no study have been performed in Canada. Here, we aimed to describe the experience of men at risk of PCa about their PSA testing and prostate biopsy.

Methods: PCa screening and diagnosis procedure experiences was collected for 2053 men at risk of PCa participating in a prospective, multicenter, observational study called Biomarkers, Prostate Cancer, Prevention and Environment (BIOCaPPE), aimed at evaluating the impact of various biomarkers associated with lifestyle habits on PCa incidence. Participants had either 1) a first negative prostate biopsy in the past six months or 2) a PSA level between 2.5–10 ng/mL but no previous prostate biopsy.

Results: Of all participants, 1498 (73.0%) had a previous prostate biopsy. The mean PSA level was 5.75 ng/mL for participants who had a previous biopsy and 4.85 ng/mL for those who did not have a previous biopsy; 52.3% had benign prostatic hyperplasia. A majority (55.0%) of participants underwent PSA testing to screen PCa, from which, 77.3% was prescribed by a family physician; 72.3% had a previous discussion with the prescribing physician on the benefices and harms of PSA testing; and 83.1% saw their experience with PSA testing as positive. For participants who underwent a prostate biopsy, 52.9% decided to undergo this procedure following a recommendation from a urologist; 67.3% were under local anesthesia during the procedure; 79.7% had mild to moderate pain; and 73.0% had mild to moderate anxiety. Most men (89.2%) had at least one side effect following the biopsy. The most common side effects were blood in the sperm (79.6%), prostatic pain (22.9%), and bleeding (16.4%). Overall, 79.2% saw their experience with prostate biopsy as positive.

Conclusions: Men at risk of PCa generally had a positive experience with both PCa screening and diagnostic procedures, even if the majority had at least one side effect following the prostate biopsy. This is the first description of PSA testing and prostate biopsy experiences in a Canadian cohort of men at risk of PCa.

Funding: Cancer Research Society of Canada, Ministère de l'enseignement supérieur, de la recherche, de la science, et de la technologie du Québec, and Fonds de Recherche du Québec - Santé (FRQ-S)

Abstract 46

Does PSA density predict a positive biopsy in men presenting with a solitary PI-RADS 3 lesion?

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Introduction: Multiparametric (mp) prostate MRI has improved detection of clinically significant prostate cancer (PCa) but the likelihood of PCa in a PI-RADS3 lesion is equivocal. Given prostate biopsy-associated morbidity, PSA density (PSAD) has been explored to help guide the decision to biopsy after mpMRI. We prospectively analyzed the impact of PSA density on the likelihood of detecting PCa in those with solitary PI-RADS 3 lesions.

Methods: Between October 2020 and May 2021, 84 men with a solitary PI-RADS 3 lesions on mpMRI underwent both targeted biopsy (TB) and systematic biopsy (SB). We reviewed these patients' clinical and demographic information. PSAD was calculated from the pre-biopsy PSA and prostate volume on mpMRI, with a cutoff of 0.15 ng/mL. Means, ranges, and percentages were calculated.

Results: Mean age was 65.6 years (range 50–79). Pre-biopsy PSAs were a mean of 7.59 ng/mL (range 1.6–25.6). The mean PSA density was 0.13 ng/mL/cc (range 0.02–0.65). Lesions were a mean of 14.6 mm (range 6–34). Thirty-four of 84 (40.5%) men were diagnosed with PCa; 7/34 (20.6%) were in low or very low NCCN risk groups, while 27 (79.4%) were in the favorable-intermediate or greater NCCN risk groups. Seventeen (50%) had a PSAD less than 0.15, with 6/17 (35.3%) in the low or very low NCCN risk groups and 11 (64.7%) in the intermediate-favorable or greater NCCN risk groups. Thirty-six of the 50 (72.0%) men with a negative TB and SB had a PSAD under 0.15. Twenty-one men had PCa diagnosed at the PI-RADs 3 lesion and 16 of these (76.2%) had a PSAD over 0.15. Eighteen of 21 (85.7%) with PCa diagnosed at the PI-RADS 3 lesion were in the favorable-intermediate or greater NCCN risk groups; however, of the 13 with a negative TB but PCa detected on SB, 12 (92.3%) had a PSAD under 0.15 and nine (69.2%) were in the intermediate-favorable or greater NCCN risk groups. Eleven of 27 (40.7%) men diagnosed with an intermediate-favorable or greater NCCN risk group PCa had a PSAD under 0.15.

Conclusions: While most men with PCa detected at a PI-RADS 3 lesion had a PSAD density greater than 0.15, most men with a negative TB but PCa detected during SB had a PSAD less than 0.15. PSAD is likely a poor predictor of PCa risk in men presenting with a solitary PI-RADS 3 lesion.

Abstract 47

Combination MRI-targeted and systematic prostate biopsy results in significant downgrading based on final surgical pathology

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Introduction: Combination MRI-targeted and systematic biopsy has increased in popularity. Multiple studies have suggested that combination biopsy results in the highest concordance with final surgical pathology while minimizing upgrade rates on final surgical pathology; however, the downgrade rate for combination biopsy is unclear and there are conflicting reports in the current literature. In this study, we aimed to assess combination biopsy concordance, upgrading, and specifically downgrading with final surgical pathology.

Methods: We queried our institutional database to identify patients that underwent both combination biopsy and radical prostatectomy at the institution from the years 2014–2021. Combination biopsy results were examined to identify Gleason grade on the MRI-targeted and systematic biopsy components individually in addition to overall Gleason grade (targeted and systematic combined). These were compared with Gleason grade on final surgical pathology. Concordance, upgrading, and downgrading between the biopsy types were compared using the McNemar test. SPSS version 28 was used for all statistical analysis.

Results: A total of 126 patients underwent combination biopsy followed by radical prostatectomy. Final surgical pathology was concordant with 46.8% of systematic biopsies, 44.4% of targeted-only biopsies, and 54.0% of combination biopsies. Upgrade rates were 36.5% for systematic biopsy, 37.3% for targeted-only biopsy, and 17.5% for combination biopsy. Downgrade rates were 16.7% for systematic biopsy, 18.3% for targeted-only biopsy, and 28.6% for combination biopsy. Combination biopsy was significantly less likely to have upgrading on final surgical pathology when compared to systematic biopsy (17.5% vs. 36.5%, $p<0.001$). Combination biopsy overestimated Gleason grade on final surgical pathology compared to systematic biopsy (28.6% vs. 16.7%, $p<0.001$). When examining the downgraded patients with combination biopsy only, the downgrade rate from high-risk to intermediate-risk disease was 38.9% and from unfavorable to favorable intermediate-risk disease was 50.0%.

Conclusions: While combination MRI-targeted and systematic prostate biopsy maximizes concordance and minimizes upgrading on final surgical pathology, our cohort suggests that targeting these higher-risk areas also results in significant downgrading on final surgical pathology. Over 80% of patients who downgraded on final surgical pathology downgraded to Gleason grade groups that may have resulted in less aggressive disease management. Therefore, combination biopsy could lead to overtreatment of prostate cancer that in reality is less severe.

Abstract 48

Are all PI-RADS 3 lesion equal? Analysis of positive prostate biopsies in men presenting with a solitary PI-RADS 3 MRI lesions

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Introduction: Prostate MRI has improved the detection of prostate cancer (PCa) and the likelihood of detecting PCa is correlated with the PI-RADS scoring system. PI-RADS 3 lesions represent a moderate risk of detecting PCa at biopsy. We analyzed the incidence of detecting PCa at biopsy in men presenting with solitary PI-RADS 3 lesions.

Methods: The study was approved by the institutional review board prior to commencement. Between October of 2020 and May of 2021, we identified 84 men who had a solitary PI-RADS 3 lesions on MRI who subsequently underwent both targeted and systematic biopsies. We subsequently reviewed these patients' charts for clinical and demographic information. Patients were categorized into low, intermediate, and high NCCN risk groups. Descriptive statistics were calculated.

Results: Subjects were a mean 65.6 years old (range 50–79). Pre-biopsy PSAs were a mean 7.59 mg/mL (range 1.6–25.6). The mean PSA density was 0.13 ng/mL/cc (range 0.02–0.65). PI-RADS lesions were a mean 14.6 mm (range 6–34 mm). Of the 84 men, 16 (19.0%) had Gleason 7 or greater PCa at the target lesion (TL), five (6.0%) had Gleason 6 PCa at the TL, and 63 (75.0%) did not have PCa detected at the TL. Of the 63 who had a negative TL, eight (9.5%) had Gleason 7 or greater PCa detected on systematic biopsy (SB) and five (6.0%) had Gleason 6 PCa detected on SB. Twelve of these 13 subjects had positive biopsies in the same hemigland of the PI-RADS 3 lesion, but the subject with positive biopsy on the contralateral gland had a Gleason 8 NCCN high risk cancer. Ultimately, of the 84 men presenting with a solitary PI-RADS 3 lesion, 34 (40.5%) were diagnosed with Gleason 6 or greater PCa and 24 (28.6%) of men were diagnosed with Gleason 7 or greater PCa. Of the 34 who had PCa detected, seven were classified in the low or very low NCCN risk groups, while 27 were in the intermediate favorable or greater NCCN risk groups.

Conclusions: The presence of a solitary PI-RADS 3 lesion on MRI represents a moderate risk of detecting PCa when a SB is performed at the same time the TL is biopsied. Patients may benefit from research that will help further stratify the risk of detecting clinically significant PCa in those presenting with a solitary PI-RADS 3 lesion.

Abstract 49

Salvage cryotherapy for prostate cancer seminal vesicle recurrences after radiation therapy

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Introduction: Local prostate cancer (PCa) recurrences after primary radiation therapy can propose a treatment conundrum, as there is a balance of reducing overtreatment with the associated side effects and undertreating clinically significant recurrences which may lead to worse oncologic outcomes. We present four cases and short-term followup of PCa seminal vesicle (SV) recurrences after primary radiation therapy treated with salvage cryotherapy. To the best of our knowledge, this is the first description and reporting on outcomes for salvage cryotherapy for SV PCa recurrences after primary radiation therapy.

Methods: There were four cases identified of SV PCa recurrences after radiation therapy treated with salvage cryotherapy at the University of Rochester. These cases were reviewed, and pertinent clinical information was collected.

Results: Men were between 65 and 74 years old at the time of salvage cryotherapy and between 5–12 years out from their initial radiation therapy. No man received androgen deprivation therapy after salvage cryotherapy. For the three men with post-procedure PSAs, their post-salvage cryotherapy PSAs were less than 2 ng/mL above their post-primary radiation therapy nadir (the Phoenix criteria threshold). No man reported any significant complication from the procedure and there were no readmissions after salvage cryotherapy.

Conclusions: These short-term results suggests that salvage cryotherapy of SV PCa recurrences after radiation therapy is safe and feasible. Longer-term and larger trials will be needed to determine the safety and efficacy of salvage cryotherapy for PCa SV recurrences.

Abstract 50

Geographic proximity to a cancer center and health equity of prostate cancer patients – A study of Northwestern Ontario

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Introduction: Early detection of prostate cancer (PCa) leads to better survival; however, barriers to an early diagnosis like low accessibility can affect the outcomes of the disease. This study aimed to investigate the relationship between the distance from Thunder Bay Regional Health Science Center (TBRHSC) and the characteristics of patients with PCa presented to our center which is the only center that provides uro-oncological care to Northwestern Ontario region (area=526 417.35 km^2, population=232 299).

Methods: A retrospective chart review was conducted for all patients who were diagnosed with and received treatment for PCa from 2010–2020 at (TBRHSC). Patients fell under two distance-oriented categories: 1) < 300 km, 2) ≥ 300 km away from TBRHSC.

Results: Of 1411 patients (median=69 years old), 1143 (81%) were living at less than 300 km (median 7.3 km), while 268 (19%) at ≥300 km (median 382 km) distance from TBRHSC. There was no statistical significance against the basic characteristics (age, history of smoking and comorbidities, and having a family physician) but family history of PCa and marital status (Table 1). Compared to those who live at <300 km, those living at ≥300 km distance were more likely to present with higher PSA (13.25 vs. 9.00 ng/ml), higher Gleason score (>6, 84.4% vs 78%), advanced (25.9% vs. 17.9%), and metastatic (22.0% vs. 14.6%) cancer (all $p<0.05$) (Table 2). A significant correlation between PSA at diagnosis and the distance from TBRHSC was plotted ($p=0.008$, correlation coefficient=0.076). The logistic regression showed patients living far were 1.8 times more likely to present with advanced disease (aOR 1.81, 95% CI 1.05–3.95, $p<0.001$) (Table 3).

Conclusions: The unavailability of PCa-related health services due to living at distance from Thunder Bay Regional Health Science Center was associated with higher rate of advanced and metastatic PCa at presentation. To provide equitable yet high-quality care for PCa, it is prudent for healthcare providers, community resources, and the health care system to take access to cancer-related health services into account. As a result, some implications like satellite uro-oncology centers and a PCa screening campaign are underway in our region.

Funding: NOAMA

Abstract 50. Table 1. Basic characteristics overall and between distance groups

	Total	Less than 300 km	300 km and above	p
Demographic factors				
Age (year), mean±SD	69.31±9.07	69.22±9.16	69.7±8.68	0.304
Distance (km), mean±SD	112.91±219.01	33.48±67.71	451.96±302.39	<0.001
Marital status, n (%)				<0.001
Single	181 (12.9)	154 (13.5)	27 (10.1)	
Married/common-law	1060(75.1)	863 (75.4)	197 (73.5)	
Widowed	78 (55)	60 (5.2)	18 (6.7)	
Divorced	71 (5)	58 (5.1)	13 (4.9)	
Unknown	12 (1.5)	8 (0.7)	13 (4.9)	
Smoking status, n (%)				0.607
Never	325 (23.1)	258 (22.6)	67 (25)	
Former	505 (35.8)	415 (36.3)	90 (33.6)	
Current	162 (11.5)	135 (11.8)	27 (10.1)	
Unknown	419 (29.7)	335 (29.3)	84 (31.3)	
Medical factors				
Diabetes mellitus				0.445
No	997 (70.7)	804 (70.4)	193 (72)	
Yes	274 (19.4)	220 (19.2)	54 (20.1)	
Unknown	140 (9.9)	119 (10.4)	21 (7.8)	
Hypertension				0.405
No	580 (41.1)	464 (40.6)	116 (43.3)	
Yes	691 (48.9)	560 (49)	131 (48.9)	
Unknown	140 (9.9)	119 (10.4)	21 (7.8)	
Cardiovascular				0.445
No	957 (67.8)	772 (67.5)	185 (69)	
Yes	314 (22.3)	252 (22.1)	62 (23.1)	
Unknown	140 (9.9)	119 (10.4)	2 (7.8)	
Family history of PCa				0.002
No	672 (47.6)	567 (49.6)	105 (39.2)	
Yes	260 (18.4)	211 (18.4)	49 (18.3)	
Unknown	479 (30.4)	365 (32)	114 (42.5)	

Abstract 50. Table 2. Clinical characteristics overall and between distance groups

	Total	Less than 300 km	300 km and above	p
Age (year), mean±SD	69.31±9.07	69.22±9.16	69.7±8.68	0.304
Distance (km), mean±SD	112.91±219.01	33.48±67.71	451.96±302.39	<0.001*
PSA (ng/ml) at diagnosis				<0.001*
Mean±SD	77.05±379.111	59.74±312.94	152.94±582.06	
Median	9.6	9	13.25	
Gleason grade n (%)				0.009**
3+3	260 (20.9)	227 (22)	33 (15.2)	
3+4	412 (33)	350 (34)	62 (28.6)	
4+3	214 (17.2)	171 (16.6)	43 (19.8)	
8	205 (16.4)	165 (16)	40 (18.4)	
9 or 10	156 (12.5)	117 (11.4)	39 (18)	
Gleason grade				0.014**
6 and below	260 (20.9)	227 (22)	33 (15.2)	
Above 6	987 (79.1)	803 (78)	184 (84.8)	
Stage at diagnosis				<0.001**
Localized	1112 (80.6)	920 (82.1)	192 (74.1)	
Advanced	267 (19.4)	200 (17.9)	67 (25.9)	
Metastasis				<0.001**
No	1159 (84)	957 (85.4)	202 (78.0)	
Yes	220 (16)	163 (14.6)	57 (22.0)	
Risk group				0.061**
Low-risk	387 (32)	305 (30.5)	82 (38.9)	
Intermediate-risk	587 (48.5)	496 (49.6)	91 (43.1)	
High-risk	236 (19.5)	198 (19.8)	38 (18)	

Abstract 50. Table 3. The effect of distance from the medical center on the likelihood of advanced stage at diagnosis

Outcome	OR (95% CI)	p	aOR (95% CI)	p
Distance				
Less than 300 km	Ref			
300 km and above	2.59 (1.15–5.91)	<0.001	1.81 (1.05–3.95)	<0.001

Abstract 51

Using aromatherapy to reduce pain and anxiety during transperineal biopsy: A pilot study

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Introduction: Transperineal prostate biopsy (TPBx) is becoming increasingly used for tissue diagnosis in prostate cancer. Despite this, their decreased infection rate, increased rates of pain, anxiety, and embarrassment have limited their use in the office setting. This has led providers to search for other modalities to reduce discomfort and allow for transperineal biopsies to be shifted from the operative setting to a more standard office-based approach. One non-invasive approach that has been well-studied to reduce anxiety and pain is the use of aromatherapy. This passive and cost-effective approach can be easily incorporated into the biopsy process.

Methods: All patients undergoing a TPBx at a large academic medical center were eligible for inclusion in our study. This prospective study was approved by our institutional review board. Patients were approached prior to their procedure and written consent was obtained. Prior to the biopsy, a lavender-peppermint AromaTab™ was placed on the patient's gown per the manufacturer's instructions. Following the procedure, patients were given a questionnaire with a 10-point visual analog scale regarding pain, as well as questions regarding pain, anxiety, and embarrassment on a five-point Likert-based scale. A final questionnaire regarding aromatherapy-specific questions was also administered.

Results: All (100%, 8/8) patients agreed to participate in the study and no patients asked to have the aromatherapy patch removed prior to the end of the procedure. Half of the patients (4/8) had used aromatherapy in the past to reduce stress or anxiety. No participants had adverse symptoms associated with the aromatherapy. Half (50%, 4/8) participants enjoyed using the device to some extent and 63% (5/8) of participants agreed that the device helped with their anxiety during the procedure. All the patients would use a patch if they were to undergo the procedure again.

Conclusions: Non-pharmaceutical adjuncts to help alleviate pain and anxiety during transperineal biopsy are important when performing biopsies in the outpatient setting. The use of aromatherapy may help to reduce anxiety and discomfort for some patients. This simple intervention comes is a low-cost and is a non-invasive technique familiar to patients and may help to make their experience more tolerable.

Abstract 52

Distance matters: How far patients travel impacts localized and advanced prostate cancer treatment options

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Introduction: It is critical for the optimal management of prostate cancers that a patient has adequately planned and emergent access to appropriate facilities and specialists, such as experienced surgeons and oncologists. These aspects of care are difficult to provide for patients who live far from major population centers. The burden of travel is a significant factor influencing patient access to and utilization of healthcare. The objective was to examine: 1) the association of travel distance on the treatment choices of localized and advanced prostate cancer; and 2) the differences in treatment trends by risk group.

Methods: The hospital-based cancer registry of patients diagnosed with prostate cancer (PCa) from 2010–2020 who received treatment at Thunder Bay Northern Ontario Medical Centre was retrospectively reviewed. The primary predictor, which was the travel distance to the medical center, was defined as the distance between the geographic centroid of the patient's zip codes and the hospital and was classified as 1) <300 km, and 2) ≥300 km. Risk stratification was also applied to the cohort according to the American Urological Association.

Results: A cohort of 1412 patients aged 69 years (median) diagnosed with PCa was analyzed. Of these patients, 1211 (85.8%) were diagnosed with localized PCa, while 201 (14.2%) were advanced. There were no significant differences between the groups in terms of basic characteristics. The choice of treatment was statistically different only among patients with localized PCa; of patients living <300 km from the treatment facility, 36.3% received radical prostatectomy, compared to 26.3% of those living farther away (Table 1). Compared to those living ≥300 km, intermediate-and high-risk localized PCa patients living <300 km away were more likely to opt for radiotherapy and hormone therapy (Tables 2, 3, 4).

Conclusions: Increased distance to the treatment facility was associated with a decreased likelihood of proper therapy for surgically treatable localized tumors and an increased likelihood of hormone and radiotherapy. That might be attributed to the burden of access to postoperative care in case of complications for those who live in remote areas. Access to prostate cancer care services can influence the decisions at all time points during treatment.

Abstract 52. Table 1. Choice of treatment overall and between distances groups

Treatment	Total	Less than 300 km	300 km and above	p
Localized				
Radical prostatectomy	390 (34.6)	340 (36.3)	50 (26.3)	0.003
Radiotherapy	431 (38.4)	344 (36.8)	87 (45.8)	0.005
Primary ADT	104 (9.2)	78 (8.4)	26 (13.7)	0.004
Active surveillance	200 (17.8)	173 (18.5)	27 (14.2)	0.061
Advanced				
Radical prostatectomy	9 (4.5)	9 (6.3)	0 (0)	0.098
Radiotherapy	22 (10.9)	17 (11.8)	5 (8.8)	0.123
Primary ADT	168 (83.6)	117 (81.3)	51 (89.5)	0.079
Active surveillance	2 (1.0)	1 (0.7)	1 (1.8)	0.701

The above data were found for 1326 (out of 1412).

Abstract 52. Table 2. Choice of treatment in low-risk localized prostate cancer

Treatment	Total (%)	Less than 300 km	300 km and above	p
Radical prostatectomy	58 (25)	48 (24)	10 (27)	0.8
Radiotherapy	33 (15)	26 (14)	7 (19)	
Active surveillance	134 (59)	114 (60)	20 (54)	
Primary ADT	3 (1)	3 (2)	0 (0.0)	

Abstract 52. Table 3. Choice of treatment in intermediate-risk localized prostate cancer

Treatment	Total (%)	Less than 300 km	300 km and above	p
Radical prostatectomy	252 (44)	221 (46)	31 (36)	0.01
Radiotherapy	227 (40)	188 (39)	39 (45)	
Active surveillance	58 (10)	52 (11)	6 (7)	
Primary ADT	31 (5)	21 (4)	10 (12)	

Abstract 52. Table 4. Choice of treatment in high-risk localized prostate cancer

Treatment	Total (%)	Less than 300 km	300 km and above	p
Radical prostatectomy	81 (25)	72 (27)	9 (12)	0.02
Radiotherapy	171 (52)	131 (50)	40 (54)	
Active surveillance	8 (2)	7 (3)	1 (1)	
Primary ADT	70 (21)	54 (20)	24 (32)	

Abstract 53

Stereotactic body radiation impacts prostate cancer treatment patterns

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Introduction: Stereotactic body radiation (SBRT) is a highly conformal, hypofractionated radiation delivery technique that offers benefits over other radiation-based treatment approaches like intensity modulated radiotherapy (IMRT), such as shorter treatment duration and lower cost. It was first introduced in 2007, however, its impact on prostate cancer treatment patterns is unknown.

Methods: Using SEER-Medicare, we designed a longitudinal, retrospective study of patients diagnosed with localized prostate cancer from 2008–2017. We created prostate cancer-specific physician-hospital networks by linking each National Provider Identifier (NPI) to their the most commonly associated hospital network and assigned each patient to a network based on the treating physician. We identified the primary treatment and treatment year for each patient within 12 months following diagnosis. Finally, we stratified patients into two groups based on SBRT availability.

Results: Centers performing SBRT for prostate cancer increased from eight in 2008 to 45 in 2017. Similarly, the number of patients receiving SBRT increased steadily from 110 in 2008 to 1225 in 2017. Compared to patients treated in a non-SBRT network, patients receiving treatment in a SBRT network were less likely to be Black (9.7% vs. 10.4%, p<0.001) or Hispanic (4.3% vs. 5.5%, p<0.001), but were more likely to have a high school education (90.3% vs. 87.3%, p<0.001) and have higher median household income (>$60 000, 60.6% vs. 42.3%, p<0.001). Within SBRT networks, the proportion of patients treated with SBRT increased every period after adoption, while active surveillance and prostatectomy use remained stable, and IMRT decreased. This contrasts with networks that did not adopt SBRT, where active surveillance increased, and brachytherapy decreased over the study period.

Conclusions: We evaluated prostate cancer treatment patterns within networks offering SBRT, and found that SBRT use is increasing, while other treatment approaches remained stable (prostatectomy, active surveillance) or decreased (IMRT). Treatment patterns and patient characteristics within networks offering SBRT differ from those that do not and may have access and policy implications as the prostate cancer treatment landscape continues to evolve.