



**Urological Society
for American Veterans
2020 Program**

ABSTRACT BOOK

Abstracts reviewed & accepted by the USAV Scientific Program Committee for presentation at the canceled 2020 Annual Meeting in Washington, DC.

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ABSTRACT #1 – PODIUM

PALLIATIVE ROBOTIC CYSTECTOMY FOR ADVANCED PROSTATE CANCER

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Dallas, Texas

Presentation to be made by Roger K. Khouri Jr., MD

Introduction & Objectives: To evaluate surgical outcomes, palliative durability, and quality of life (QoL) after palliative robotic cystectomy (PRC) for symptomatic locally advanced prostate cancer (PC).

Methods: Retrospective review of all ten patients (median age, 70 years) who underwent PRC for advanced PC at our institution from 2013-2018.

Results: Preoperatively, bladder outlet obstruction (BOO), hematuria, and pelvic pain were seen in 80%, 60%, and 50% of patients, respectively. Rates of perioperative and delayed complications were 40% and 20%, respectively. At median follow up of 193 days, there were no cases of BOO, hematuria, pelvic pain, rectal injury, or death. Six patients completed the questionnaire (Functional Assessment of Cancer Therapy – Bladder Cystectomy). Individual sub-domain (physical, social, functional, emotional, bladder specific) and overall scores were similar to post-operative radical cystectomy populations in other studies. All six patients who completed the survey would undergo the procedure again.

Conclusion: PRC appears to be a safe and effective option for advanced PC. Larger studies with longer-term follow up are needed to establish the translatability and durability of our findings.

ABSTRACT #2 – PODIUM

ULTRASOUND ECHOGENICITY CHARACTERIZATION AT TIME OF MULTIPARAMETRIC-MAGNETIC RESONANCE IMAGING/ULTRASOUND FUSION GUIDED BIOPSY IMPROVES ACCURACY AND RISK STRATIFICATION

Alexa J Van Besien*, Adrianna J Lee*, Linhan Xu*, Michael J Naslund, Amelia Wnorowski*, Aidan J Kennedy*, Ian Qian*, Mohammad M. Siddiqui

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Presentation to be made by Ms. Alexa J Van Besien.

Introduction and Objective: Prostate cancer is the leading cancer diagnosis among US Veterans. Multiparametric magnetic resonance imaging (MP-MRI)/ultrasound (US) fusion guided prostate biopsy is increasingly being offered at VA hospitals. Fusion biopsy increases detection of clinically significant prostate cancer (csPCa) compared to the standard of care, yet the technique is potentially prone to missed diagnosis due to inaccurate targeting. In some cases, MRI target lesions demonstrate concomitant US lesions which can help real-time targeting. This study aimed to examine if the hypoechogenicity of MP-MRI prostate lesions identified by MRI/US fusion can influence the accuracy of fusion biopsy and its ability to detect csPCa.

Methods: Records from March 2017 to June 2019 of 120 men who underwent both standard and MP-MRI/US fusion guided biopsy by two University of Maryland urologists were reviewed. Prostate lesions were identified by MRI/US fusion and the transrectal US image at that MRI lesion location was characterized as either strongly, weakly, or no hypoechoic lesion. The performance of fusion versus standard biopsy in detection of csPCa (greater than Gleason 6) was examined. Accurate target biopsies were biopsies in which standard biopsy did not detect a csPCa detected by fusion biopsy.

Results: A total of 65 (46%) of the 120 patients were diagnosed with prostate cancer. Of those patients, 42 (65%) of patients had csPCa (Gleason ≥ 7). There was a mean of 1.9 lesions/patient. A per lesion analysis was performed on the 231 lesions sampled. Higher grade prostate tumors diagnosed by fusion biopsy were enriched for concordant hypoechoic lesions on US (**Figure 1**). The prevalence of strongly hypoechoic lesions on benign, Gleason 6, 7 and ≥ 8 biopsy sites was 13%, 19%, 29%, and 59% ($p < 0.0001$). Using the definition of accuracy and inaccuracy for fusion vs standard biopsy-based diagnosis of csPCa, “Strongly hypoechoic” biopsies were accurate 100% of the time, “Weakly hypoechoic” were accurate 97% of the time, and “Not hypoechoic” was accurate 83% of the time ($p < 0.04$).

Conclusion: Patients with hypoechoic lesions in the vicinity of MRI/US fusion-based targets had lower rate of missed csPCa diagnosis on fusion biopsy compared to standard template biopsy. Observation and targeting of hypoechoic lesions on US in the vicinity of MRI targets during MRI/US may decrease the rate of missed csPCa on MRI/US fusion biopsy.

This research was supported in part by the Program for Research Initiated by Students and Mentors at the University of Maryland School of Medicine Office of Student Research.

ABSTRACT #3 – PODIUM

EXPERIENCED BEDSIDE-ASSISTANTS IMPROVE OPERATIVE OUTCOMES FOR SURGEONS EARLY IN THEIR LEARNING CURVE FOR ROBOT ASSISTED RADICAL PROSTATECTOMY

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Dallas, TX, USA, Presentation to be made by Dr. Garbens

Grant support: none

Introduction and Objective: Robot assisted laparoscopic radical prostatectomy (RALRP) is a complex robotic procedure for both the surgeon and bedside assistant (BA). It has been previously documented that surgeon experience (i.e. surgical volume) is associated with improved outcomes in RALP. However, the use of an experienced BA has not yielded the same results. Furthermore, the use of an experienced BA early in the learning curve has not been explored.

We sought to determine if an experienced BA yields improved outcomes for surgeons early in their learning curve for RALRP

Methods: A retrospective cohort study of a single surgeon's first three years of practice at a single VA institution was performed. Patient demographic data (BMI, pre-operative PSA, TRUS biopsy grade group) and peri-operative data (margin status, length of stay (LOS), operative time and estimated blood loss (EBL)) was collected and analyzed. Experienced BAs were defined as any assistant who had undergone dedicated training as a BA either through the UTSW physician assistant residency or a comparable outside training program. Urology residents were not considered expert BAs. Univariate and multivariable analyses were performed to determine if expert BA was a predictor of post-operative outcomes.

Results: In total, 170 cases were performed, of which 111 (65%) were performed without an expert BA and 59 (35%) were performed with an expert BA. Expert BA use was significantly higher in 2015 than novice BA use ($p=0.007$), otherwise groups were not significantly different with regards patient demographics ($p>0.05$ for all). On univariate analysis, having an expert BA was associated with a significantly lower LOS (31hr \pm 21 vs. 42hr \pm 26, $p=0.004$), EBL (296ml \pm 180 vs. 441ml \pm 305, $p<0.0001$) and positive margin rate (20% vs. 37%, $p=0.03$). Other surgical outcomes were comparable between groups. On multivariable analysis, expert BA remained a predictor of decreased LOS (B stat= -8.4 , 95% CI $-16.0, -1.2$, $p=0.02$), EBL (B stat = -138 , 95% CI $-225, -51$, $p=0.002$) and positive margin rate (OR -2.8 , 95% CI $-6.6, -1.2$, $p=0.02$).

Conclusions: Our results demonstrate that the use of an expert BA may result in improved patient outcomes early in the learning curve of RALP, namely, positive margin rates, estimated blood loss and hospital length of stay. Further studies are needed to confirm these results.

ABSTRACT #4 – PODIUM

CHANGE IN PATIENT REPORTED OUTCOME MEASURES FOLLOWING HYPERBARIC OXYGEN THERAPY FOR RADIATION CYSTITIS: A PILOT STUDY

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Presentation to be made by Dr. Eileen R. Brandes, MD

INTRODUCTION AND OBJECTIVE: Prior studies evaluating hyperbaric oxygen therapy (HBOT) have demonstrated reduced bladder bleeding interventions, however, few U. S. studies have evaluated HBOT's association with patient reported outcome measures (PROMs). The purpose of this study was to evaluate the feasibility of collecting PROMs at the time of HBOT and any associated changes in patient reported hematuria events and urinary function following HBOT.

METHODS: Prospectively collected data from the Dartmouth Hitchcock Medical Center Hyperbaric Registry were used. Patients were included with complete pre and post HBOT hematuria scores and/or Urinary Distress Inventory (UDI) PROMs. Patient reported hematuria was characterized by frequency and nature of bleeding. Survey and hematuria scores were obtained on the first day and last day of HBOT and compared pre and post-test using the Wilcoxon rank sum test.

RESULTS: 18 and 11 patients had complete hematuria and UDI data. Patients were an average of 69.6 ± 12.5 yrs, 4/18 diabetic, 9/18 former smokers, and 15/18 underwent prostate cancer related radiation treatment. Referral for HBOT occurred approximately 8 ± 4.4 yrs following radiation with all patients undergoing >30 treatments. Hematuria scores were significantly improved post HBOT (2.4 pre vs. 1.0 post, $p=0.01$) (Figure 1A). Despite a trend towards improvement, pre and post UDI scores were not significantly different (54.8 ± 31.8 vs. 47.0 ± 31.1 , $p=0.79$) (Figure 1B).

CONCLUSIONS: In a novel, prospective data set, we demonstrated the feasibility of collecting PROMs in patients undergoing HBOT. HBOT reduced patient reported hematuria events, however, did not significantly reduce UDI scores. This may be a result of limited sample size, timing of PROM collection, and lack of an existing radiation cystitis specific PROM. Expansion of the registry to a larger cohort could provide more generalizable results.

SOURCE OF FUNDING: None

ABSTRACT #5 – PODIUM

BOTULINUM TOXIN ATTENUATES URETERAL PGE SYNTHASE

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Lebanon, NH: Presentation to be made by Dr. Krughoff

Introduction and Objective: Clostridium botulinum toxin type A (BoNT-A) has been found to inhibit the release of several neurotransmitters and inflammatory modulators. The impact of intraureteral BoNT-A on the chemosensory functions of the ureter is unknown. Our goal was to determine the effect of BoNT-A instillation on the expression of prostaglandin E (PGE) synthase in an inflammatory state using a novel animal model.

Methods: Cystotomy and unilateral ureteral BoNT-A instillation with ipsilateral distal ureteral ligation was performed on 3 New Zealand white rabbits (2.4-2.8kg). A fourth rabbit underwent 4cc saline instillation to serve as a negative control. A fifth rabbit underwent direct periureteral BoNT-A injection in addition to ureteral instillation to serve as a positive control. Rabbits were survived for 7 days. Ureteral tissue was fixed in formalin and paraffin embedded. Ureteral sections underwent antigen retrieval (BOND epitope retrieval solution) followed by incubation with PGE synthase antibody (*Santa Cruz Biotechnology*) and DAB HRP secondary (Vector ImmPRESS-VR Kit).

Results: All rabbits survived 7 days with one exception which was euthanized on post-operative day five following wound complications. PGE synthase was detected in ureteral tissue of all specimens. BoNT-A exposure was associated with a decrease in PGE synthase signal in a dose-dependent fashion, with direct injection showing the greatest decrease in signal.

Conclusions: The feasibility of an in-vivo study of ureteral BoNT-A instillation is demonstrated herein, with preliminary results suggesting attenuation of ureteral PGE synthase expression following BoNT-A exposure. The ability of BoNT-A to exert chemosensory and/or inflammatory modulating effects without direct injection is possible under conditions of inflammation.

Source of Funding: Hitchcock Foundation, Max Willschire Fund

ABSTRACT #6 – PODIUM

OUTCOMES OF PROSTATIC URETHRAL LIFT IN A MEDICALLY COMPLEX US MILITARY VETERAN POPULATION

AUTHORS: Shreeya Popat, MD*, Katherine Utech, BS*, Jennifer M. Taylor, MD, Jeffrey A. Jones, MD

Houston, TX. Presentation to be made by Dr. Shreeya Popat.

INTRODUCTION AND OBJECTIVE: Prostatic urethral lift (PUL) is a minimally-invasive intervention for symptomatic benign prostatic hyperplasia (BPH). PUL is recommended for bilobar prostatic hyperplasia, 30-80cc in size, in patients who are not catheter dependent. Here, we report outcomes utilizing PUL within a US military veteran population employing a wider range of procedural indications.

METHODS: Charts of patients who underwent PUL at our institution from 2013 to present were reviewed, noting baseline patient characteristics and operative details. Pre- and post-operative International Prostate Symptom Score (IPSS), uroflowmetry, and post-void residual (PVR) were recorded. Statistical comparisons were performed using simple t-tests.

RESULTS: From 2013 to 2019, 91 patients underwent PUL at our institution. Mean age was 70 (range 55-92) years. The vast majority of our patients classify as American Society of Anesthesiologists (ASA) class 3 versus the general population at ASA class 2. Mean prostate size, as measured on transrectal ultrasound, was 40 (range 14-115) cc. Three patients had prostates larger than 80cc. Three patient had bladder stones, necessitating concomitant cystolitholapaxy. Fifty-three procedures were performed under general anesthesia, 35 with intravenous sedation and intravesical/urethral lidocaine, and 3 under spinal anesthesia. Average number of implants was 5 (range 2-13). Post-operatively, IPSS decreased by an average of 43% (23 to 13, $p < 0.001$). Of note, IPSS worsened over the course of follow-up, though not to a statistically significant degree ($p=0.08$). There was a mean 41% decrease in PVR (179 to 101 cc, $p=0.009$), which was durable for a follow-up of up to 54 months. Maximum urinary flow rate improved by an average of 32% (9.3 to 12.3 cc/s, $p=0.003$), which was also durable throughout followup. Forty-four patients required catheterization pre-operatively: 26 used clean intermittent catheterization (CIC), and 18 had indwelling catheters. Of these patients, 16 (38.6%) required catheterization post-operatively: 13 (29.5%) performing CIC and 4 (9%) requiring indwelling catheters. Therefore, 27 patients (61.4%) were rendered catheter-free by PUL. Thirty-nine patients were taking antiplatelet medications peri-operatively, and 13 took anticoagulants. Only one patient (on warfarin) experienced hematuria requiring re-admission with catheter placement.

CONCLUSIONS: PUL produced effective and generally durable results in our veteran population, including in patients requiring catheterization, those with bladder stones, and those on antiplatelets/anticoagulants.

SOURCE OF FUNDING: None

ABSTRACT #7– PODIUM

NOCTURNAL-ONLY VOIDING DIARIES IN THE EVALUATION AND MANAGEMENT OF NOCTURIA

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Presentation to be made by Mr. Thomas F. Monaghan

Introduction and Objective: The major etiologies underlying nocturia can be broadly divided into excess urine production (i.e., nocturnal [NP] or global polyuria [GP]) or small bladder capacity (SBC). A 24-h voiding diary is the gold standard for differentiating between these mechanisms. In of itself, overnight data from a 24-h voiding diary provides valuable insight regarding nocturnal urine production, and can thus support a diagnosis of NP. Accordingly, nocturnal-only diaries may provide a less cumbersome alternative to 24-h voiding diaries, but their diagnostic utility is less clear with respect to GP or SBC. This study aims to establish the sensitivity and specificity of nocturnal urinary parameters in diagnosing nocturia owing to GP and SBC.

Methods: Analysis of a voiding diary database from men with lower urinary tract symptoms (LUTS) treated at a Veterans Affairs Urology Clinic from 2008-2018. Complete diaries from men aged ≥ 18 years showing ≥ 1 nocturnal void(s) were included. GP was defined as a 24-h urine volume >3000 mL. SBC was defined as a 24-h Maximum Voided Volume (MVV) <200 mL. Nocturnal urine production rate >125 mL/h (3000mL/24-h) and Nocturnal Maximum Voided Volume (NMVV) <200 were employed as nocturnal proxies for GP and SBC, respectively, as both variables are readily attainable from a nocturnal-only voiding diary.

Results: A total of 483 entries from 288 patients were included for analysis. Fifty-eight entries demonstrated a 24-h urine volume >3000 mL, while 110 diaries reported a nocturnal urine production rate >125 mL/h, such that nocturnal urine production >125 mL/h was 71% sensitive and 84% specific for GP. A total of 89 entries reported a 24-h MVV <200 mL, while 139 entries demonstrated a NMVV <200 mL, corresponding to a 100% sensitivity and 87% specificity for SBC.

Conclusions: Beyond their intrinsic utility in diagnosing NP, nocturnal-only voiding diaries can predict diagnoses of GP and 24-h SBC with a fair degree of sensitivity and specificity. Accordingly, nocturnal-only voiding diaries may be an appropriate screening tool in the initial evaluation of nocturia—particularly in the setting of patient nonadherence or when 24-h diaries are otherwise impractical.

ABSTRACT #8 – PODIUM

SCREENING FOR PRIMARY HYPERPARATHYROIDISM AMONG VETERANS WITH URINARY STONE DISEASE

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Palo Alto, CA. Presentation to be made by Dr. Ganesan
Source of Funding: None

Introduction and Objective: The American Association of Endocrine Surgeons recommends parathyroidectomy in stone formers with primary hyperparathyroidism to prevent osteopenia, osteoporosis, and recurrent urinary stones. However, the rate of primary hyperparathyroidism screening among stone formers remains unknown. To address this knowledge gap, we determined the rate of parathyroid hormone (PTH) testing in a national cohort of stone formers with hypercalcemia in the Veterans Health Administration (VHA).

Methods: We identified stone formers as those with one or more inpatient encounters for urinary stone disease, two or more outpatient encounters for urinary stone disease, or one or more stone procedures between 2008 and 2013 using the national VHA database. We excluded patients who were previously screened for hyperparathyroidism. Next we identified Veterans with serum calcium measurements above the 95th percentile (>10.5 mg/dL) within a 6 month period before and after initial stone diagnosis. We then identified associated serum PTH values within 9 months of initial stone diagnosis.

Results: We identified 157,539 stone formers who met criteria. Within this cohort, 88% (139,115 individuals) had a serum calcium level measured; of these, 5.7% (7,561 individuals) were found to have at least one serum calcium > 10.5 mg/dL. In patients with hypercalcemia, 25% (1,873 individuals) had a serum PTH measurement, and 38% of these individuals had an elevated serum PTH > 65 pg/mL that would qualify for primary hyperparathyroidism. Across 150 VHA facilities, the PTH testing rates ranged from 4 to 57%.

Conclusions: One in four patients with urinary stone disease and hypercalcemia are screened for pHPT in the VHA nationally, and there is large variation in the use of PTH screening across VHA facilities. Improving clinician awareness of screening indications may increase referrals for parathyroidectomy and reduce recurrent stone disease.

ABSTRACT #9 – PODIUM

IMPACT OF SARCOPENIA IN THE ERA OF NEOADJUVANT CHEMOTHERAPY FOR MUSCLE-INVASIVE BLADDER CANCER

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Presentation to be made by Dr. Goran Rac

Introduction and Objective: Sarcopenia is associated with an increased risk of adverse outcomes in various malignancies, and there is evidence linking chemotherapy toxicity to the presence of sarcopenia. However, the effect of chemotherapy on development or progression of sarcopenia is unclear. We aim to determine whether sarcopenia is affected by neoadjuvant chemotherapy (NAC) in an advanced bladder cancer population and determine if the presence of sarcopenia prior to NAC is predictive of response to therapy as seen in other malignancies.

Methods: A retrospective review of 254 patients who underwent radical cystectomy at our institution between 3/2005-12/2016 was performed. 73 patients underwent NAC, of which 34 had adequate imaging and follow-up for inclusion. Skeletal muscle index (SMI) was calculated using the cross-sectional area of skeletal muscle at L3 (cm²) on CT imaging and normalizing this to the patient's height (m²). Sarcopenia was defined using previously validated cutoffs of SMI < 55 cm²/m² for males and SMI < 39 cm²/m² for females. Response to NAC was defined as pathologic downstaging to final pathology of < pT2. Complications were assessed using the Clavien-Dindo classification system. Chi-squared tests were used to compare groups based on SMI, with p-value cutoff of < 0.05 to determine significance.

Results: Prior to NAC, 23.5% (8/34) patients were found to have sarcopenia. Overall, 79.4% (27/34) of patients experienced a decrease in SMI, with a mean SMI of 64.0 cm²/m² prior to NAC and 56.7 cm²/m² following NAC. This decrease was found to be statistically significant with a mean decrease in SMI of 8.9%. 44.1% (15/34) of patients that underwent NAC had new or worsened sarcopenia afterwards. There was no statistically significant difference in rates of downstaging, complications, recurrence or mortality for patients with sarcopenia prior to NAC compared to those that did not.

Conclusions: Patients who underwent NAC experienced a significant decrease in SMI; however, there was no association between sarcopenia prior to or following NAC and response to NAC. There was no difference in rates of complications, recurrence and mortality. While many patients experienced a decrease in SMI after NAC, including a progression to sarcopenia in almost half of them, this did not appear to significantly alter their clinical course.

ABSTRACT #10 – PODIUM

DEVELOPMENT OF A VETERAN-CENTERED BLADDER CANCER SURVIVORSHIP CARE PLAN

Authors: Alexandra B. Caloudas PhD,* Hoda J. Badr PhD,* Lindsey A. Martin PhD,* Heather H. Goltz PhD,* & Jennifer M. Taylor MD, MPH

Houston, Texas. Presentation to be made by: Dr. Alexandra Caloudas

Introduction and Objective: Bladder Cancer (BC) is the third most commonly diagnosed cancer in U.S. Veterans and comprised 6% of all new Veteran cancer cases in 2010. Veteran cancer survivors in the Veterans Health Affairs System (VHAS) tend to be older and have high comorbidity burden, relative to patients not in the VHAS. A Survivorship Care Plan (SCP) is a navigation tool intended to help a cancer patient transition to survivor and includes a comprehensive cancer care summary and a follow-up plan. Although evidence for their efficacy is mixed, SCPs may help patients with complex needs navigate survivorship. This project aimed to transform a generic SCP template (American Society of Clinical Oncology (ASCO) SCP) into an SCP that is patient-centered and veteran-centric.

Methods: We conducted individual qualitative interviews with 20 Veteran BC survivors about their experiences and unmet needs. Interviews were recorded, transcribed, and analyzed using rapid qualitative analysis. Identified themes were used to adapt ASCO SCP to fit veterans' reported needs and preferences. Focus groups were conducted (FG1 $n=5$; FG2 $n=7$) with veteran BC survivors to seek feedback on adapted SCP. SCP was adjusted after each FG to incorporate feedback.

Results: Interview participants expressed a wide range of needs for additional information and support, and 90% of interview participants reported experiencing side effects related to treatment, short-term and/or long-term. The most requested elements of an SCP included information on nutrition ($n = 8$), physical activity ($n = 6$), support groups ($n = 8$), managing side effects ($n = 6$), and surveillance ($n = 4$). SCP was adapted to incorporate this information following interviews and further amended after FGs to include: veteran specific risk factors for BC, a glossary of terms, and a bold statement of the importance of treatment adherence for BC.

Conclusions: Veteran survivors of BC have a diverse and unique set of needs that differ from those of the general population. Although several professional organizations including the National Academy of Medicine recommend their use, research demonstrating efficacy of SCPs for improving patient outcomes is mixed. In attempt to better meet veterans' needs, **we developed an SCP for Veteran BC Survivors that is rooted in veteran survivors' voices.** Future research should: 1) investigate the efficacy of using this SCP to improve veteran outcomes, and 2) study the needs, barriers, and benefits of implementing a broader Survivorship Program to bolster support for a population with complex and evolving needs.

Source of Funding: Michael E. DeBakey VAMC HSR&D FY19 Seed Award.

Conflict of Interest and Disclosure Statement: None.

Category List: Socioeconomic/Health Policy

Keywords: Bladder Cancer, Survivorship, Quality of Life

ABSTRACT #11 – POSTER

METABOLIC SYNDROME IS ASSOCIATED WITH AGGRESSIVE PROSTATE CANCER RISK REGARDLESS OF RACE

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Presentation to be made by: Lourdes Guerrios M.D. M. Sc.

Introduction and Objective: A meta-analysis showed that Metabolic Syndrome (MS) is associated with increased incidence of prostate cancer (PC) and particularly high-grade PC. Whether this link is true across different races is unknown. We tested the link between MS and PC risk in a multiethnic cohort of men undergoing prostate biopsy. We hypothesized MS would be linked with aggressive PC, regardless of race.

Methods: Among men undergoing prostate biopsy at the Durham VA between 2007-2018, we abstracted history of or treatment for hypertension ($\geq 130/85$ mmHg), dyslipidemia (HDL < 40 mg/dL), hypertriglyceridemia (≥ 150 mg/dL) and diabetes/impaired fasting glucose (fasting glucose ≥ 100 mg/dL) in the year prior to biopsy using labs, meds, or diagnoses in the chart. Obesity was defined as waist circumference (measured at biopsy) ≥ 40 inches. Biopsy grade group was categorized as low (1) or high-grade (2-5). We tested the link between MS (3-5 MS components) vs. no MS (0-2 components) and demographic and clinical variables by chi-squared and rank sum, and with PC risk using logistic regression. Multinomial logistic regression was used to examine MS and risk of high-grade vs. no PC and low-grade vs. no PC. Results were adjusted for age, year, race, PSA, DRE, and prostate volume. The interaction between race and MS was tested to see if results varied by race.

Results: Of 1,139 men (58% black), 572 (50%) had MS. Men with MS were older, more likely to be non-black, and had larger prostates (all $p \leq 0.004$). Men with MS were less likely to have low-grade (21% vs. 29%) but more likely to have high-grade PC (32% vs. 27%) ($p=0.006$). On multivariable analysis, MS was associated with increased high-grade PC (OR 1.76, 95% CI 1.25-2.49, $p=0.001$), but not overall PC (OR 1.20, 95% CI 0.92, 1.59, $p=0.18$) or low-grade (OR 0.91, 95% CI 0.66-1.25, $p=0.57$). Results were similar in black and non-black men (all race p -interactions > 0.4)

Conclusions: Regardless of race, after adjustment for confounders, MS was associated with aggressive PC, but not overall PC risk. If confirmed in other studies, our data suggest MS reduction in both black and non-black men may be a potential target to lower aggressive PC risk.

Conflict of Interest and Disclosure statement: All authors disclose no conflicts of interest.

Source of funding: "The project described was supported by Grant Number K24 CA 160653 from NCI. Leading Emerging and Diverse Scientists to Success (LEADS) Support; National Institute of General Medical Sciences, R25GM116740. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health."

ABSTRACT #12 – POSTER

FACTORS ASSOCIATED WITH UPGRADING ON RE-BIOPSY IN ACTIVE SURVEILLANCE IN A REGIONAL MULTI-INSTITUTIONAL COHORT: DATA FROM PURC

Ruchika Talwar, Sameer Mittal*, Leilei Xia*, Claudette Fonshell*, John Danella*, Thomas Lanchoney*, Jay Raman*, Jeffrey Tomaszewski*, Edouard Trabulsi*, Marc Smaildone*, Robert Uzzo*, Alan Wein*, Daniel J. Lee*, Thomas J. Guzzo*

Philadelphia, PA; Presentation to be made by Ruchika Talwar, MD

Introduction: Active surveillance (AS) is increasingly utilized for management of prostate cancer (PCa) across all demographics. However, candidate selection criteria vary greatly based on provider and institution. The ideal AS candidate is one with low risk PCa that is likely to remain indolent and stable, but risk factors for grade progression are still poorly understood. We aimed to study factors associated with upgrading on re-biopsy in patients enrolled in AS.

Methods: Within PURC, a prospective quality improvement collaborative of diverse academic and community urology practices in Pennsylvania & New Jersey, we identified all men enrolled in AS from 2015-2018 after first biopsy. We analyzed differences in pathologic grading between the first and second biopsy and factors associated with upgrading at the second biopsy. Subsequently, we ran a sub analysis on patients with only 1 positive core on initial biopsy.

Results: We identified 477 patients enrolled in AS for PCa who underwent 2 biopsies from 2015-2018. 346 (72.5%) patients who underwent a re-biopsy had a second positive biopsy. Higher PSA, Gleason score, number of positive cores, and family history were associated with a positive second biopsy ($p < 0.05$). When analyzing pathology results of the positive second biopsy, 243 (70%) patients had a concordant or lower grade, and 103 (29.8%) patients were upgraded. Higher Gleason score, International Society of Urological Pathology (ISUP) Grade Group, number of positive cores, and positive family history were associated with upgrading ($p < 0.05$). On multivariable regression analysis, none of these factors were predictive of upgrading. 113 patients had only 1 positive core on initial biopsy. These were sub classified into 2 groups, those who had $< 50\%$ or $> 50\%$ tissue involved. No differences were noted in rates of positive second biopsy or upgrading between these groups (97% vs 92%, $p = 0.18$).

Conclusion: Of 346 patients with a second positive biopsy, 29.8% were upgraded at their confirmatory biopsy. Higher Gleason score, International Society of Urological Pathology (ISUP) Grade Group, number of positive cores, and positive family history were all significantly associated with upgrading. Percent of core involved in those with a single positive core did not influence of likelihood of upgrading. These associations may be taken into consideration upon shared-decision making for PCa treatment.

Sources of Funding: Data provided with permission from the PURC, funded by participating urology practices and the Partnership for Patient Care, a quality improvement initiative supported by the Health Care Improvement Foundation, Independence Blue Cross, and southeastern PA hospitals/health systems.

Disclosures: None

ABSTRACT #13 – POSTER

PREDICTORS OF BIOCHEMICAL RECURRENCE FOLLOWING SALVAGE CRYOTHERAPY FOR RECURRENT PROSTATE CANCER: EXPERIENCE FROM TERTIARY REFERRAL CENTER

Caitlin Shepherd*, Goran Rac, Robert Grubb, Harry Clarke, Charleston, SC

INTRODUCTION AND OBJECTIVE: Options for salvage therapy following local failure of primary ablative therapies are limited. Salvage cryosurgery of the prostate (CSP) is a feasible option for selected patients. The objective of this study is to identify which pretreatment factors may be predictive of durable success following salvage CSP.

METHODS: We performed a retrospective review of patients who underwent salvage CSP at our institution between 2002-2017. All patients had biopsy-proven local recurrence after primary ablative therapy. Preoperative evaluation included PSA, prostate biopsy, CT scan, bone scan and Prostatecint or Axumin scan. We evaluated age, Gleason score at initial diagnosis, AUA risk strata at initial diagnosis, primary intervention, SV involvement, and initial success of primary intervention as possible predictive factors. Treatment failures were defined as: biochemical failure (rise in PSA of ≥ 2 ng/mL from the post-CSP nadir), development of metastatic disease or initiation of systemic therapy.

RESULTS: We identified 80 patients who underwent salvage CSP; there were 55 patients with complete data. In our cohort, the mean age was 68, the mean pretreatment PSA of 7.23; the majority of patients had grade group 1 and 2 disease with 81% of patients having had some form of radiation and 29% of our cohort having had previous cryotherapy. Twenty-four patients (43.6%) had durable responses to salvage CSP at time of last follow-up with a median duration of follow-up of 4.2 years. We found that initial Gleason grade group ($p=0.0042$), pretreatment PSA ($p=0.0044$), combination EBRT-brachytherapy ($p=0.020$) and AUA risk strata ($p=0.030$) at initial diagnosis were independently predictive of failure following salvage CSP.

CONCLUSIONS: Salvage CSP is an effective local salvage therapy with $>40\%$ progression free rate at a median follow-up of more than 4 years. Commonly available preoperative risk factors are highly predictive of durable response. The effect of undergoing SV biopsy and receipt of Prostatecint or Axumin scan in predicting success is less clear.

ABSTRACT #14 – POSTER

CONTINUATION VERSUS DISCONTINUATION OF ASPIRIN PRIOR TO TRANSRECTAL ULTRASOUND-GUIDED PROSTATE BIOPSY: COMPARISON OF THE INCIDENCE, DURATION, AND SEVERITY OF BLEEDING COMPLICATIONS

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Presentation to be made by Dr. Goran Rac

Introduction: Transrectal ultrasound guided (TRUS) prostate biopsy is associated with bleeding risk and patients are often asked to hold aspirin. An increasing number of patients benefit from aspirin therapy for their cardiovascular health. We conducted a randomized controlled trial comparing the incidence and severity of TRUS prostate biopsy associated bleeding between patients continuing or discontinuing aspirin therapy of 81 mg or 325 mg.

Methods: A total of 54 patients meeting inclusion criteria were enrolled in a randomized control trial and randomly assigned to undergo TRUS prostate biopsy while continuing their normal dose of 81 mg aspirin (n = 31), or 325 mg aspirin (n = 3), or discontinue their normal dose of aspirin (n = 20). The incidence and duration of gross hematuria, hematochezia, and hematospermia were assessed with a self-administered questionnaire at 2 weeks post-biopsy followed by a phone administered questionnaire at 4 weeks post-biopsy. Statistical analysis was performed using Student's T-test and Fisher's Exact Test where appropriate to assess for significant differences between the groups. A value of $p < 0.05$ was used to determine significance for each test.

Results: Data analysis was performed on 36 patients with adequate follow-up. The mean duration of gross hematuria, hematochezia, and hematospermia in patients continuing their normal aspirin regimen was 6.08, 1.64, and 5.32 days, respectively. The mean duration of bleeding when discontinuing aspirin therapy was 6.18, 2.63, and 4.27 days, respectively. There was no significant difference in incidence of gross hematuria ($p = 0.48$), hematochezia ($p = 0.14$), and hematospermia ($p = 0.36$) when comparing the continued aspirin group to the discontinued aspirin group. There was no significant difference in bleeding complications leading to hospitalization when comparing continued aspirin group to the discontinued aspirin group ($p = 1.0$).

Conclusions: Continuation of aspirin did not significantly increase the duration of bleeding in this study population. No significant difference in bleeding complications leading to hospitalization was observed in patients that continue their normal aspirin regimen compared to discontinuing aspirin. These results suggest that it may be safe for patients undergoing TRUS prostate biopsy to continue aspirin therapy peri-procedurally without increasing the risk of bleeding complication while maintaining desired cardiovascular protection.

Source of Funding: None

ABSTRACT #15 – POSTER

USE OF HIGH INTENSITY FOCUSED ULTRASONOGRAPHY FOR TREATMENT OF PROSTATE CANCER: A RETROSPECTIVE REVIEW

Ali S. Antar, MD*, Michael Pan, MD, Jeffrey A. Jones, MD, Houston, TX
Presentation to be made by Dr. Ali S. Antar

Sources of Funding: None

Introduction and Objective - High intensity focused ultrasonography (HIFU) has become an increasingly viable option for primary treatment of prostate cancer. Recent studies have shown good oncologic outcomes with lower complication rates compared to whole gland therapy. We aim to report on our outcomes and the safety profile from our unique experience.

Methods - We performed a retrospective review of 27 patients who were treated with focal HIFU at the Houston VA between June 2017 and September 2019. Primary outcomes were stable PSA nadir at follow-up. Secondary outcomes were changes in Sexual Health Inventory for Men (SHIM) scores, American Urologic Association Symptom Scores (AUASS), and rates of de novo urethral/voiding complications. Follow-up questionnaires were completed either at postoperative appointments or over the telephone.

Results - Of the 27 patients in the study, 22 were treated in a primary setting and 5 were treated in a salvage setting. 5 patients were lost to followup. The remaining patients were followed between 3 and 30 months, for an average of 10.5 months. Of the 22 patients with followup PSA's, 15 (68%) were able to achieve a stable PSA nadir at their most recent followup. Of the 7 without stable PSA nadir, 4 have demonstrated recurrence, and only 1 has so far required salvage prostatectomy, after which he has achieved an undetectable PSA. The other 3 are undergoing continued surveillance with MRI. Of the 22 patients with followup, a total 5 (22%) reported a worse AUASS. A total of 4 (18%) reported a worse SHIM score. Only 1 patient of the 22 patients with followup was found to have a urethral stricture, which has been treated with cystoscopy and urethral dilation.

Conclusions – With good outcomes and low complication rates, HIFU is an attractive and viable option for primary treatment of prostate cancer and is of particular use in patients who cannot tolerate surgery or who have failed radiation. This is particularly salient in a VA setting with a high proportion of patients with baseline lower urinary tract symptoms, erectile dysfunction, HIFU offers a treatment option with acceptable rates of preservation of those domains of function. In a patient population with a high rate of medical comorbidities that may preclude surgical management, HIFU should remain on the practitioner's radar as an option for management.

ABSTRACT #16 – POSTER

KNOWLEDGE AND UPTAKE OF PROSTATE CANCER GENETIC TESTING AMONG UROLOGISTS

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Introduction and Objective: Germline testing is recommended for all men with metastatic prostate cancer, and for some patients with localized prostate cancer with Ashkenazi Jewish ancestry or who meet specific histologic or family history criteria (e.g., breast, ovarian, pancreatic or prostate cancer). However the extent of genetic risk assessment and germline test uptake in current urologic practice is currently unknown.

Methods: Following IRB approval, we conducted an online survey of U.S. urologists to examine knowledge of guidelines on prostate cancer genetics, as well as current practice patterns for family history collection and genetic testing. The survey was distributed via email from American Urological Association sections and social media. A total of 93 urologists responded from diverse practice settings across the U.S., and results were evaluated using descriptive statistics.

Results: Overall, 10% of urologist respondents perform germline testing in their practice, 47% refer to a genetic counselor, and 11% do both. Conversely, 33% do not perform testing or refer to a genetic counselor. Most respondents ask patients about family history of prostate cancer, but 28% do not ask about cancer history in female relatives. Virtually none of the respondents had any formal education in genetics, and one-third do not feel confident with their genetic knowledge. Respondents expressed interest in additional resources such as family history collection tool for patients, education updates, and a smartphone app to refer patients for genetic evaluation.

Conclusions: This survey suggests significant gaps in education and practice for genetic risk assessment among urologists. Large scale evaluation and interventions are warranted to support urologists in genetic evaluation for prostate cancer.

Source of Funding: Prostate Cancer Foundation

ABSTRACT #17 – POSTER

DETERMINANTS OF MAXIMUM VOIDED VOLUME AMONG COMMUNITY-DWELLING OLDER MEN WITH NOCTURIA

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Brooklyn, New York

Presentation to be made by Mr. Christopher D. George

Introduction and Objective: Maximum voided volume (MVV, formerly known as functional bladder capacity) is an important determinant of daytime and nighttime lower urinary tract symptoms (LUTS) in both men and women. Previous studies have focused on the association between MVV and LUTS, but MVV has not been interpreted in the context of height and weight. Accordingly, we sought to determine the potential relationship between MVV, height, and weight.

Methods: *Post hoc* analysis of voiding diary data obtained from the Krimpen study, a large community-based study of Dutch men aged 50-78 years, was conducted. A total of 1,688 men were included at baseline. MVV, defined as the single largest voided volume recorded on the 24-h voiding diary, was compared to BMI (kg/m²), height (m), and weight (kg) through simple and multiple linear regression analyses. Adjustments were made for International Prostate Symptom Score (IPSS) and age.

Results: Simple linear regression analyses revealed a significant positive correlation between MVV and both height ($B = 305.65$, $p < 0.001$) and weight ($B = 1.33$, $p = 0.001$). Smaller MVV was strongly correlated with higher age ($B = -2.66$, $p < 0.001$) and self-reported LUTS as determined by the IPSS ($B = -5.18$, $p < 0.001$). MVV had no association with BMI ($B = 1.31$, $p = 0.348$). After adjustment, multiple linear regression analysis demonstrated that height was a stronger physiologic predictor of MVV ($B = 232.87$, $p = 0.002$) compared to weight ($B = 0.50$, $p = 0.253$).

Conclusions: In this study, MVV was independently correlated with height but not weight, nor BMI. Height should be considered in the interpretation of MVV values to further individualize the evaluation and management of both daytime and nighttime LUTS. It is postulated that height is a fixed anatomic characteristic likely related to internal organ size while weight fluctuates with variation in diet and caloric expenditure.

ABSTRACT #18 – POSTER

TECHNICAL INTRAOPERATIVE MANEUVER FOR MANAGEMENT OF CHALLENGING LEFT-SIDED INTERIOR VENA CAVA THROMBUS IN RENAL CELL CARCINOMA

Jenna Winebaum, MD; Caitlin Shepherd, MD; Thomas Keane, MD; Robert Grubb, MD.

Introduction: Excising left sided inferior vena cava (IVC) thrombus in patients with renal cell carcinoma (RCC) can be challenging given its longer length, additional branches and anatomical location under the mesentery especially when dealing with bulky tumor thrombus, aberrant anatomy or compromised intraoperative hemostasis. Here, we discuss a technique we have used to safely resect difficult neoplastic thrombi.

Methods: Two left sided nephrectomies with IVC thrombectomies were performed as part of a multidisciplinary surgical team at our institution where stapling across the renal vein with known tumor thrombus was done. This procedure was done due to aberrant anatomy with associated thrombus in one patient and hemodynamic instability in another. The renal vein was stapled as close to IVC as possible which was followed by excision of renal vein stump and caveotomy to remove remaining thrombus.

Patients: The first patient underwent a cytoreductive nephrectomy for metastatic type 2 papillary RCC with known bifurcated renal vein and level II tumor thrombus. The second patient had a renal mass with level II tumor thrombus however due to his undiagnosed cirrhosis his surgical blood loss was significantly greater than expected prior to approach to the thrombectomy portion of the procedure. Stapling across the left renal vein allowed expedited and safe removal of both the mass and the thrombus without need for caval reconstruction or extensive repair in both patients. Both patients are 6 months out from their initial resection without evidence of intravascular recurrence or lung metastasis.

Conclusion: Although against current oncologic dogma, this technique allows successful removal of IVC thrombus in patients who may have otherwise been considered inoperable.

ABSTRACT #19 – POSTER

USING QUALITY IMPROVEMENT TO DESIGN A BLADDER CANCER SURVIVORSHIP PROGRAM

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Presentation to be made by Dr. Ali S. Antar

Sources of Funding: None

Introduction and Objective: Survivorship care is an element of the Cancer Program at our VAMC. The American College of Surgeons' Commission on Cancer accredits the majority of VA Cancer Programs, and new 2020 Survivorship standards emphasize management of complications, rehabilitation, ongoing screening, and providing other resources and support, with significant latitude to customize a program specific to each site. We designed a quality improvement project with LEAN methodology to integrate these services in the Urology clinic. As a key initial step, we sought to characterize our current volume and patterns of care of veterans with cancer.

Methods: We analyzed encounters with cancer patients and survivors during a week of operation and observed the workflow of clinic encounters from patient arrival to check-out. Patient data was tabulated for all patients, and for those with cancer, we included demographics and details of the visits. The intervals of specific patient contact and waiting times, and the flow of the patient encounters, were observed. With guidance from a VA LEAN project manager, process mapping of the model program was done, with analysis by fishbone diagram of potential barriers.

Results: In 1 week, 33% of all patients presented with a history of or active GU malignancy. Of those, the majority had prostate cancer (60%), followed by bladder cancer (BC) (25%), and kidney cancer (11%). Within BC, those with non-muscle invasive BC (NMIBC) undergoing surveillance and BCG treatment constituted a considerable volume of nursing visits and follow up in cystoscopy or resident clinics. Given the burden of needs among NMIBC patients as well as the predictable clinic time, this patient group was identified as an ideal population for a pilot program. The surveillance cystoscopy and BCG encounters were targeted for direct observation. The workflow for each patient was charted, and the combined waiting time between check in and procedure was averaged to be about 27 minutes. A fishbone diagram was also drafted and solutions for each element were identified during meetings with the survivorship program working group.

Conclusions: Using a targeted demographic analysis, clinic workflow observations, and QI tools, opportunities for patient engagement were identified when a survivorship plan could be implemented, with a visit with our coordinator or a self-paced activity, such as a survey instrument or education intervention. A pilot program for NMIBC cancer survivors will be tested and then expanded to include eventually all cancer types, to meet the accreditation standard and improve the overall quality of care for our veterans with cancer.

ABSTRACT #20 – POSTER

PARASTOMAL HERNIA DEVELOPMENT AFTER CYSTECTOMY AND ILEAL CONDUIT FOR BLADDER CANCER: RESULTS FROM THE DARTMOUTH ILEAL CONDUIT ENHANCEMENT (DICE) PROJECT

Authors: Michael E. Rezaee, MD, MPH, Jenaya L. Goldwag, MD*, Briana Goddard, BA*, William Bihrlle, III, MD*, Alexei Viazmenski, MD*, Matthew Z. Wilson, MD, MSc*, John D. Seigne, MBBCh* - Lebanon, New Hampshire; Presentation to be made by Michael E. Rezaee, MD, MPH

Introduction & Objective: The burden of parastomal hernias to patients, surgeons, and the healthcare system is immense. Significant opportunity exists to reduce patient morbidity, mortality and healthcare costs if parastomal hernias can be better understood and prevented. The purpose of this study was to describe the natural history of parastomal hernias and identify risk factors for hernia development in patients who undergo cystectomy with ileal conduit urinary diversion.

Methods: A retrospective cohort study was performed of bladder cancer patients who underwent cystectomy with ileal conduit urinary diversion between January 1st 2009 and July 31st 2018 at Dartmouth-Hitchcock Medical Center. The primary outcome of interest was the presence of a parastomal hernia as evident on post-operative cross-sectional imaging obtained for disease surveillance.

Results: A total of 107 patients were included with a mean age of 70.9 years and 29.9% being female. Parastomal hernias were identified in 68.2% of bladder cancer patients who underwent cystectomy with ileal conduit urinary diversion. 40% of patients with a parastomal hernia reported symptoms related to their hernia, while 12.5% underwent operative repair. After multivariate adjustment, patients with a post-op BMI > 30 kg/m² (Odds Ratio [OR]: 21.8, 95% CI: 1.6-305.2) or stage III or IV bladder cancer (OR: 18, 95% CI: 2.1-157.5), had significantly greater odds of parastomal hernia development. Fifty percent of parastomal hernias were identified 1.3 years from surgery, while 75% were identified by two years after cystectomy.

Conclusions: Parastomal hernias developed in over two-thirds of bladder cancer patients and occurred rapidly following cystectomy and ileal conduit urinary diversion. Greater post-operative BMI and bladder cancer stage were identified as significant risk factors for parastomal hernia development. Significant opportunity exists to reduce morbidity associated with parastomal hernias in this population.

Source of Funding: None

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