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**Urological Society for American Veterans
(USAV)
Annual Meeting**

SUNDAY, MAY 5, 2019

1:00 PM – 5:30 PM

**BALLROOM CDE
HYATT REGENCY
MCCORMICK PLACE
CHICAGO, IL**

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AGENDA (continued)

3:25 – 3:35 PM **2019 SGSU Kimbrough Meeting Highlights and Joint SGSU/USAV Issues.**

Military Medicine Under the Defense Health Agency, Changes Affecting the SGSU and USAV.

Hal Frazier, MD, SGSU Secretary

3:40 – 3:55 PM **Keynote Lecture**

Are the AUA Guidelines on Assessment for Microhematuria, Appropriate for the VA Population?

Mark Sawyer, MD, Chief of Urology, VA Eastern Colorado Health Care System and Assistant Professor, University of Colorado School of Medicine

4:00 – 5:20 PM **Podium Abstract Presentations (10)**

Moderators: Marc Rogers, MD (Charleston VA) and Florian Schroeck, MD (White River Junction VA)

1. Radium-223 Treatment Patterns in a Large Real World Population. Hanson Zhao, MD
2. Is Higher Follicle Stimulating Hormone (FSH) Associated with Long-Term Prostate Cancer Risk? Eric Webb, MD
3. Do Hispanic men have worse outcomes after radical prostatectomy? Results from SEARCH. Lourdes Guerrios-Rivera, MD
4. Short-Term Outcomes of Prostatic Urethral Lift After Implementation in a Veterans Affairs Hospital. Heather Huelster, MD
5. Urge Perception in Nocturia Patients with a Mental Health Diagnosis: Compulsion or Convenience? Thomas Monaghan, MD
6. Prevalence of the Nocturnal Polyuria Syndrome in the Veterans Affairs Outpatient Urology Setting. Curran Emeruwa, MD
7. Use of Indocyanine Green for Ureteral Identification during Non-Urologic Robotic Surgery. Pratik Kanabur, MD
8. Laser Speckle Contrast Imaging: A Novel Technique to Assess Pelvic Microvascular Perfusion (MVP) After Prolonged Vaginal Distension (VD) In A Rabbit Model. Daniel Han, MD
9. Knowledge of hematuria and willingness to participate in home screening in the general population: An online survey of over 1400 adults. Matthew Hudnall, MD

5:20 – 5:25 PM **Abstract Awards**

5:25 – 5:30 PM **Passing of the Gavel and Conclusion**



ABSTRACT #20 - POSTER

INTRAPERITONEAL METASTATIC RECURRENCE FOLLOWING ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY

Jessica E. Messier*, Rathika Ramkumar, Katy Trandem, Jennifer M. Taylor: Houston, TX

Presentation to be made by Dr. Jessica E Messier

Introduction and Objective: Minimally invasive surgery is commonly used to perform partial nephrectomy due to shorter surgery times, less intraoperative blood loss, less analgesia requirement, and shorter hospital stays compared to open surgery. However, minimally invasive surgery for urological malignancies is not without its own oncologic risks, including local or regional recurrence potentially related to tumor implantation and effect of the pneumoperitoneum used to insufflate the abdomen.

Methods: Robotic-assisted partial nephrectomies (RAPNx) have been performed at the Michael E. DeBakey Veterans Affairs Medical Center since April 2010. At our center, senior residents with direct faculty supervision performed many of the cases, using a dual console DaVinci Si platform. We reviewed our database of RAPNx cases from April 2010 to February 2015. We report here two events of local recurrence, which have now changed our surgical technique.

Results: 100 RAPNx surgeries were performed on 105 tumors. The median tumor size was 3.3 cm (IQR: 2.5-4.0). Histology was found to be malignant in 87% of cases. Positive parenchymal margins were reported in 6.7% of the tumors. Two patients experienced intraperitoneal recurrence. One patient developed a recurrence outside the pararenal fat at 36 months following surgery, which was resected, and a subsequent para-capsular recurrence was treated with percutaneous cryoablation; he is alive without evidence of disease now, 7 years post-initial surgery. The second individual enrolled in an adjuvant therapy clinical trial and later developed a recurrence along the intra-abdominal body wall adjacent to the spleen, for which he underwent complete resection. He was then found to have progression to regional lymph nodes and to lungs, with minimal response to systemic therapy, and died 3.5 years after the initial surgery.

Conclusions: Intraperitoneal recurrence, potentially related to tumor seeding on adjacent tissues, has not previously been reported for minimally invasive urologic surgeries. Theoretical causes include aerosolization of tumor cells from the pneumoperitoneum or direct tumor cell implantation. In both cases described here, the resected tumors were placed in the abdominal cavity, in direct contact with the peritoneum. We have since modified our surgical technique, to immediately place the tumor in an extraction bag, to reduce the likelihood of intraperitoneal recurrence.

ABSTRACT #1- PODIUM

RADIUM-223 TREATMENT PATTERNS IN A LARGE REAL WORLD POPULATION

Hanson Zhao* MD, Lauren Howard MB, Amanda De Hoedt MS, Martha Terris* MD, Christopher Amling* MD, Christopher Kane* MD, Matthew Cooperberg* MD MPH, William Aronson MD, Thomas Polascik* MD, Stephen Freedland MD

Introduction: For men with symptomatic metastatic castration resistant prostate cancer (mCRPC), radium-223 was shown to improve overall survival in the phase III, double blind ALSYMPCA trial. Despite the observed benefits, the application and practice patterns of Radium-223 outside of clinical trials are largely unknown. Here we aim to better characterize the use of radium-223 in a large and heterogeneous real-world population. We identify treatment patterns associated with radium-223 and link these patterns with time to skeletal related event (SRE) and mortality.

Methods: We reviewed charts of all men with diagnosed with mCRPC in the entire Veterans Affairs (VA) system alive as of January 1st, 2013 who received radium-223. We generated Kaplan Meier curves for survival and time to SRE based on treatment patterns. We examined the association between common treatment patterns and mortality and time to SRE with Cox models.

Results: We identified 318 men with bone mCRPC who received radium-223. Median age at radium start was 69 ys and median follow up was 25.3 months. Median survival was 11 months. 277 patients died during the study period (87%). 50% (158/318) completed ≥ 4 injections. There was a significant difference mortality among four consolidated treatment patterns ($p=0.005$) and but no difference SRE ($p=0.10$). On univariable and multivariable analysis, men who received AR target + docetaxel + radium-223 had increased mortality vs. men who received AR target + radium-223 ($p=0.010$ and 0.005 , respectively). Multivariable analysis showed that non-black race, bone pain, SRE prior to radium, and higher PSA were all linked with worse mortality.

Conclusions: We described the largest known cohort of men in the real world who received radium-223. We identified common treatment patterns with differing risk for overall mortality. Further prospective studies are needed to better understand whether differences in survival are attributed to worsening disease status requiring more aggressive therapy, lead-time bias, or true differences in treatment efficacy.

ABSTRACT #2 - PODIUM

IS HIGHER FOLLICLE STIMULATING HORMONE (FSH) ASSOCIATED WITH LONG-TERM PROSTATE CANCER RISK?

Authors: Eric D. Webb M.D*, Zachary Klaassen M.D*, Lauren E. Howard M.S, Amanda De Hoedt B.A, Stephen J. Freedland M.D
(Presentation to be made by Dr. Eric D. Webb, M.D)

Source of Funding: Ferring Pharmaceuticals
City/State of Origin: Augusta, Georgia

Introduction and Objective: FSH is a pituitary hormone that helps regulate testosterone homeostasis. Although it is generally accepted that FSH levels increase with Leutinizing Hormone Releasing Hormone agonist (LHRH-agonist) therapy for prostate cancer (PC), the specific impact of FSH levels on risk of PC diagnosis is largely unknown. The objective of this study was to perform a retrospective population-level analysis to assess the effect of FSH levels on risk of PC diagnosis.

Methods: All men (n=386,018) who had an FSH level and complete data were identified within the Veterans Affairs (VA) Health System between 1999 and 2018. FSH was also modeled as a continuous (per 10 IU/mL) variable. The association between FSH level and time from FSH test to PC diagnosis was tested using stratified Cox proportional hazards models. Multivariable models were adjusted for age and BMI and stratified by year, race, and Charlson comorbidity index. Due to non-proportional hazards over time, time to PC was modeled separately within the first 4 years after PC diagnosis and after 4 years.

Results: Median age at first FSH level was 64 years (IQR 54-72) and median year of FSH was 2010 (IQR: 2005-2014). By race, 70% of men were white, 18% were black, and 12% were unknown/other race. Median follow-up was 76 months (IQR 38-126) during which 17,519 men were diagnosed with PC. On multivariable analysis, in the first 4 years after FSH test, there was no association between FSH and time to PC diagnosis. Starting from 4 years after FSH test, on multivariable analysis, a higher FSH level was associated with lower risk of PC (HR 0.96, 95% CI 0.93-0.98, p=0.001).

Conclusions: In this large population-level study of men receiving an FSH test, high FSH levels were associated with a lower long-term risk of PC diagnosis. Whether findings are driven by FSH itself, a complex interplay between FSH and other hormones including testosterone, or are merely associations with no causality, requires further study.

ABSTRACT #19 - POSTER

MULTIDISCIPLINARY APPROACH TO SEVERE GENITOURINARY TRAUMA AFTER BOAT PROPELLER INJURY

Caitlin Shepherd, M.D*, Yu Zheng, M.D*, Lance Tavana, M.D*, Lindsey Cox, M.D*: Charleston, South Carolina
Presentation to be made by Dr. Zheng

Introduction: A 40 year old male with severe propeller injuries to the groin, perineum, bilateral medial thighs was transferred to the trauma center after resuscitation and suprapubic tube (SPT) placement. He was taken to the OR with the trauma, orthopedic, and urology team and found to have a complete membranous urethral transection 2 cm distal to the external sphincter, complete bilateral corpus cavernosum rupture just proximal to glans penis, degloving injury to the penis and > 80% scrotal skin loss, necrosis of medial thigh muscles. He underwent primary end-to-end membranous urethroplasty, primary repair of bilateral corpus cavernosum rupture and thigh debridement and washout. He required an extended ICU stay and multiple washouts with skin grafting of medial thighs and perineum. For eight months after his initial injury, he was followed clinically. He was found to have partial tumescence of his penile stump. The patient identified a primary goal of having a functioning phallus for intercourse and removal of his SPT. On exam under anesthesia and cystoscopy was found to have a narrow dense stricture at the level of the distal bulbar urethra, obliterated urethra near the glans, and a 4-5 cm phallus stump that was adherent to the thigh. He was referred to plastic surgery for evaluation for a joint case for penile and scrotal reconstruction with skin grafts. He had a pre-op MRI pelvis that showed that scarring had created a buried penis, and tissue loss was primarily ventrally, with narrowing of the membranous urethra with dilation of the urethra proximally.

Methods: This is a case report for a unique traumatic genital and perineal injury involving a multidisciplinary approach to achieve patient's functional goals.

Results: He underwent successful perineal urethrostomy, penile and scrotal scar release (buried penis repair), split thickness skin graft from left anterior thigh to the penis and Z-plasty of the scrotum with Urology and Plastic surgery.

Conclusion: Traumatic perineal and genitalia injuries are devastating especially for young patients, but a multidisciplinary approach to care can help patients achieve their functional goals. A frank discussion is needed to establish realistic expectations with regard to outcomes, complications, and goals.

Source of Funding: None

ABSTRACT #18 - POSTER

STRIKING DIFFERENCES IN THE EFFECTS OF B3-ADRENOCEPTOR AGONISTS AND ANTIMUSCARINICS ON BLADDER FILLING/VOIDING FUNCTION IN CHRONIC SPINAL CORD INJURED RATS

Bradley A. Potts*, M.D.; Matthew O. Fraser*, Ph.D.: Durham, NC
Presentation to be made by Dr. Potts

Introduction and Objective: β 3-adrenoceptor agonists (BARA) and antimuscarinics are mainstays in the treatment of overactive bladder. We previously demonstrated significant bladder modulatory effects with rat-specific BARA, CL-316,243 (CL), in chronic suprasacral spinal cord transected (SCI) rats. We present the results of a post-hoc analysis of a study designed to assess myogenic vs neurogenic contributions to bladder activity in SCI rats.

Methods: Female Sprague-Dawley rats (4 weeks post-SCI at T9-10, n=14) were anesthetized (isoflurane); external urethral sphincter (EUS) EMG electrodes and catheters (ureteral diversion and transvesical) were placed. While mounted in a Ballman restraint cage, continuous cystometry was performed for ≥ 60 min. The infusion was stopped, bladder emptied, and normal saline (drug vehicle) was injected via femoral catheter prior to resuming bladder infusion. Following 30min, the infusion was again stopped, the bladder emptied, and IV medications were delivered prior to subsequent 30min infusion cycles. One set of animals received 0.4mg/kg atropine and the other received 10mg/kg verapamil (VP); following the same methods, the VP group then received 100 ug/kg CL prior to the next fill cycle. Total bladder capacity (TBC), filling compliance (C), non-voiding contraction (NVC) number, voiding efficiency (VE), voiding duration (VD), and EUS phasic firing frequency (PFF) were determined. Data were analyzed using non-parametric repeated measures 2-Way ANOVA or linear regression. $P < 0.05$ was considered significant.

Results: VP had no effect on voiding parameters and due to its 2min half-life, we compared the effects of atropine to those of CL. Both atropine and CL significantly increased TBC (47 and 61%, $P = 0.0016$ and 0.0018 , respectively), but atropine increased (165%, $P = 0.0002$) and CL decreased (-57%, $P = 0.0034$) NVC counts. CL had no effect on VE, but atropine significantly decreased VE (-68%, $P = 0.0060$) and VD (-42%, $P = 0.0167$); in these rats, VD and VE were positively associated ($P = 0.0007$, $R^2 = 0.70$). None of the drugs affected C or PFF.

Conclusions: While TBC was increased by CL and atropine, only CL preserved VE. Conventional wisdom suggests that the decreased VE associated with atropine is from impaired contractility, but the strong relationship found between VD and VE suggests that VD may be another important factor. These data support the continued study of BARA for neurogenic bladder in the SCI population.

Source of Funding: DoD SCIRP IIR-SC110031

ABSTRACT #3 - PODIUM

DO HISPANIC MEN HAVE WORSE OUTCOMES AFTER RADICAL PROSTATECTOMY? RESULTS FROM SEARCH

Lourdes Guerrios-Rivera MD, MSc¹, Lauren Howard^{*2} MS, Martha Terris MD³, Matthew Cooperberg MD^{*4}, Christopher Amling MD^{*5}, Christopher Kane MD⁶, William Aronson MD^{*7}, Stephen Freedland MD⁸
¹ San Juan, PR, ² Durham, NC, ³ Augusta, GA, ⁴ San Francisco, CA ⁵, Portland, OR, ⁶ San Diego, CA, ⁷ Los Angeles, CA, ⁸ Los Angeles, CA
Presentation to be made by Dr. Lourdes Guerrios-Rivera.

Introduction and Objectives: Hispanics are the fastest growing ethnic group in the United States. While it is clear that non-Hispanic Black men have worse prostate cancer (PC) outcomes vs. non-Hispanic White men, there are limited data on outcomes of Hispanic men. We examined the associations between ethnicity and outcomes after RP and tested whether PC adverse features, metastasis and biochemical recurrence (BCR) varied by ethnicity.

Methods: We identified 3,789 White men who underwent RP between 1988 and 2017 in the SEARCH database who had complete data (we excluded Black men as we have previously analyzed these men in great detail). Men were categorized as Hispanic or non-Hispanic. Logistic regression was used to test the association between ethnicity and extracapsular extension (EC), seminal vesicle invasion (SVI), positive margins, positive lymph nodes, and high-grade disease (grade group 4-5 vs. 1-3). Cox models were used to test the association between ethnicity and BCR, metastases, and castrate resistant PC (CRPC).

Results: Of 3,789 White men, 236 (6%) were Hispanic. Hispanic men had higher PSA at surgery (median 6.7 vs. 6.3, $p = 0.026$), but all other characteristics were similar between ethnicities. Median (IQR) follow-up was 91 months (52-144). On multivariable analysis, there was no difference between ethnicities in odds of EC, SVI, positive margins, positive lymph nodes, or high-grade disease (OR 0.62-0.89, $p > 0.07$). 1,168 men had BCR, 182 developed metastasis, and 132 developed CRPC. There was no significant association between Hispanic ethnicity and risk of BCR, metastases, or CRPC (HR 0.39-0.85, $p > 0.06$).

Conclusions: Within our data from multiple equal access centers, we found no evidence that Hispanic White men undergoing RP had worse outcomes than Non-Hispanic White men. In fact, all HRs were less than one with some approaching statistical significance suggesting better outcomes. Larger studies are needed to confirm these findings and test whether White Hispanic men have better outcomes as potentially suggested by our findings.

Source of Funding: NIH RO1CA231219 and K24 CA160653

ABSTRACT #4 - PODIUM

SHORT-TERM OUTCOMES OF PROSTATIC URETHRAL LIFT AFTER IMPLEMENTATION IN A VETERANS AFFAIRS HOSPITAL

Heather L. Huelster, MD, Jacob T. Ark, MD*, Kirk A. Keegan, MD, Melissa R. Kaufman, MD, Kristen R. Scarpato, MD*: Nashville, TN
Presentation to be made by Dr. Heather L. Huelster

Introduction and Objective: To evaluate the clinical impact of implementation of prostatic urethral lift (PUL) in men with bothersome lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH) within a Veterans Affairs (VA) hospital system focusing on patient selection, operative times, complications, and short term outcomes.

Methods: Using an IRB-approved, prospectively managed database, a retrospective chart review of 55 men who underwent PUL for management of BPH with LUTS at a single VA hospital since February 2018 was performed. Patient characteristics, operative times, and postoperative complications were described. Short-term outcomes, including pre- and post-operative International Prostate Symptom Scores (IPSS), quality of life (QOL) scores, and rate of discontinuation of alpha-blockers and 5-alpha-reductase inhibitors (5-ARIs) at 2 weeks, 4 weeks, and 3 months following PUL were assessed.

Results: Fifty-five men aged 45-81 years (mean 66.7 years) with an average baseline IPSS of 20.54 and QOL score of 4.35, confirmed lateral lobe prostatic hyperplasia on cystoscopy, and estimated prostate size <80cc underwent PUL. An average of 4.7 implants (range 2-7) were placed with a mean operative time of 16.4 minutes (range 8-28 minutes). Significant improvement in both IPSS and QOL scores were observed at 2 weeks, 4 weeks, and 3 months following PUL (Table 1). 37 of 55 men (69.8%) had discontinued both alpha blockers and 5-ARIs at the longest point of follow-up with an additional 4 of 55 (7.6%) men who had discontinued one of the two BPH medications. Five procedures (9.1%) were complicated by urinary retention requiring catheterization, two (3.6%) by transient dysuria prompting additional clinical evaluation, one (1.8%) by hematuria, and one (1.8%) by new onset urge incontinence. There were no reports of de novo erectile or ejaculatory dysfunction.

Conclusions: Prostatic urethral lift is a minimally invasive surgical technique that can be successfully implemented into the VA system to achieve rapid improvement in LUTS, improve quality of life, and decrease medication utilization in appropriately selected men with BPH and bothersome LUTS.

Source of Funding: None

Disclosures: None

ABSTRACT #17 - POSTER

DEFINING ADEQUATE LYMPH NODE YIELDS FOR POST CHEMOTHERAPY RPLND PATIENTS WITH NON-SEMINOMA TESTICULAR

Matthew T Smith, MD*, Nicholas Suss*, Dylan Wolff*, Maria Becerra, MD*, Dennis J Robins, MD*, Viktor X Flores, MD*, Jeffrey P Weiss, MD, Andrew G Winer, MD*: Brooklyn, NY
Presentation to be made by Dr. Matthew Smith

Introduction and Objective: Testicular cancer is the most prevalent cancer in males aged 15-44. Most are of germ cell tumors, which are divided into seminomatous and non-seminomatous germ cell tumors (NSGCT). Typically, NSGCT require chemotherapy and retroperitoneal lymph node dissection (RPLND) for treatment.

Studies have shown that lymph node yields (LNY) are regarded as surrogate marker for the quality of lymph node dissection and oncologic outcomes. The aim of this study is to evaluate the effect of lymph node yield (LNY) on overall survival and mean survival time to determine the minimum LNY necessary for adequate dissection

Methods: Using the National Cancer Database, 1,500 male patients with NSGCT who underwent PC-RPLND between 2004-2015 were identified. Multivariable binary logistic regression was utilized to identify independent predictors of extent of lymphadenectomy. 18 nodes was used as the cutoff point. Cox proportional hazards regression was used to assess risk adjusted survival trends.

Results: The median number of lymph nodes dissected was 18. High LNY were associated with a significant survival benefit when compared those who had a yield of 1-10 lymph nodes (HR 0.54 for 11-20, HR 0.45 for 21-30, HR 0.30 for >30). Of We repeated with the cohort with 11-20 lymph nodes as the reference, RPLNDs of 21-30 nodes (HR 0.83, p=0.58) and >30 nodes (HR 0.55, p=0.08) conferred no additional survival benefit.

Additionally, we found an increased risk of death in those >40 years old, those uninsured, and those insured through Medicaid. The only group who had a decreased risk of death was those in the \$48,000-\$62,999 income group (second most wealth). On Kaplan Meier Survival analysis, mean survivals were 132.1 months for the 1-10 lymph node yield cohort, 139.4 months for the 11-20 cohort, 141.5 months for the 21-30 cohort, and 140.2 months for the >30 cohort, respectively (Log Rank p<0.001) (Figure 1).

Conclusion: In our sample we found an increase in overall survival when patients had a surgical LNY of 11+, and demonstrated no continued improvement in overall survival with LNY of 20+. Lastly, we demonstrated clear discrepancies with LNY regarding age and socio-economic status. Prospective studies should be conducted to validate these findings and control for some of the limitations found inherent in this type of study.

Source of Funding: None

ABSTRACT #16 - POSTER

MICROWAVE ABLATION OF CT1A RENAL CELL CARCINOMA (RCC): SHORT TERM OUTCOMES

Kiersten Craig*, Samuel LaRussa, Douglas Scherr, Joseph Del Pizzo, Timothy McClure, New York, NY

Introduction and Objectives: The American Cancer Society estimates the incidence of renal tumors to increase by 2-3% yearly, with 63,340 new cases in 2018. The majority are T1a incidentalomas. The 2017 AUA guidelines on management of localized RCC conditionally recommend thermal ablation (radiofrequency ablation (RFA) or cryoablation) in tumors less than 3 cm. This is based on studies showing an increased likelihood of tumor persistence or local recurrence after primary thermal ablation. Although Microwave ablation (MWA) generates frictional heat 100 times faster than RFA, decreasing risks such as heat sink, studies demonstrating technical efficacy and outcomes in patients with cT1a small renal masses treated with MWA are limited. As such, no AUA guidelines exist for MWA in cT1a RCC. We describe our MWA experience to demonstrate its technical efficacy and clinical outcomes.

Methods: We performed an IRB approved single-center retrospective analysis of percutaneous MWA at our institution. From 10/16-10/18, 88 patients underwent ablation of 91 small renal masses. Patients with concurrent embolization, benign or unavailable pathology, were excluded from evaluation leaving 62 patients with 65 renal masses. Patient, tumor, ablation, admission, and follow-up characteristics were recorded, and technical success and efficacy was evaluated. Disease-free survival (DFS), metastasis-free survival (MFS), cancer-specific survival (CSS), and overall survival (OS) were calculated with the Kaplan Meier method.

Results: A single Clavien-Dindo grade I complication occurred (nausea with vomiting). Simultaneous renal biopsy and ablation was performed in 83.1% of cases and hydrodissection performed in 53.8% of cases. The biopsy was diagnostic in 98.5% of procedures. Technical success and technique efficacy was achieved in 66 (100%) and 65 (98.5%) of 66 ablated tumors respectively. Specifically, 1 of 66 ablated tumors showed residual unablated tumor on follow-up imaging. Secondary efficacy was achieved after retreatment. DFS was 98.5% with MFS, CSS, and OS of 100% with 5.5 months of follow up on average.

Conclusions: Microwave ablation has excellent immediate technical success and technique efficacy with low morbidity at a mean follow up of 5.5 (0.2-22.8) months.

Source of Funding: None

ABSTRACT #5- PODIUM

URGE PERCEPTION IN NOCTURIA PATIENTS WITH A MENTAL HEALTH DIAGNOSIS: COMPULSION OR CONVENIENCE?

Thomas F. Monaghan^{1*}, MS3, Matthew R. Epstein^{1*}, MS4, Kyle P. Michelson^{1*}, MS4, Christina W. Agudelo^{1*}, MS1, Zhan D. Wu^{1*}, MS4, Fred Gong^{1*}, MS1, Nicholas R. Suss^{1*}, MS3, Christopher D. George^{1*}, MS2, Jeffrey Arace^{1*}, MS3, Dennis J. Robins^{1*}, MD, Donald L. Bliwise^{2*}, PhD, Jerry G. Blaivas^{1,3*}, MD, Jeffrey P. Weiss^{1*}, MD.

1. Brooklyn, NY, USA
2. Atlanta, GA, USA
3. New York, NY, USA

Presentation to be made by Mr. Thomas F. Monaghan

Introduction and Objective: Individuals with mental illness and concomitant nocturnal voiding are subject to speculation that their urinary symptoms arise secondary to the insomnia that often accompanies poor mental health (MH). This study tests the hypothesis that patients seen at a urology clinic with a MH diagnosis are more likely to void out of convenience than from true urinary urgency during the period of intended sleep by examining voiding diary urge perception grades (UPGs), a peer-validated rating system for perception of desire to urinate from 0 (out of convenience) to 4 (desperate urge).

Methods: We analyzed a database of 24-hour frequency-volume charts (FVCs) with UPGs accompanying each voided volume from 429 men treated for lower urinary tract symptoms (LUTS) at a Veterans Affairs (VA) urology clinic. FVCs completed by men ≥ 18 years having ≥ 2 nocturnal voids were included. Only the first FVC was used for patients with multiple diaries. Patients were divided into two cohorts: those with and without a MH diagnosis (depression, PTSD, and anxiety) as documented in VA medical records. For each patient, the average UPG score of all nocturnal voiding episodes was calculated to obtain a mean nocturnal UPG. Statistical significance was determined using a Chi-square test.

Results: Patients with a MH diagnosis (n=62) were more likely to report convenience voiding (one or more nocturnal voids with an UPG of 0) compared to those without a MH diagnosis (n=116) (16.1% vs. 2.6%, $p < 0.01$). A mean nocturnal UPG < 1 was also more frequent in patients with a MH diagnosis than those without (14.5% vs. 0.8%, $p < 0.01$) (Table 1). No significant differences were found in the frequency distribution of mean nocturnal UPGs by MH status for $[1 \leq \text{UPG} < 2]$, $[2 \leq \text{UPG} < 3]$, and $[3 \leq \text{UPG} \leq 4]$.

Conclusions: Most patients in the MH cohort (83.9%) experienced urge-driven nocturnal voiding (true nocturia), and only a mean UPG < 1 was significantly different between groups. Although convenience voiding as reported in FVCs may be valuable in identifying underlying sleep disorders, patients with a MH diagnosis complaining of nocturia without convenience voiding should be managed for nocturia of organic/urological origin. A MH diagnosis should not challenge the severity or validity of a patient's nocturnal voiding symptoms, nor should it negate possible pharmacologic, behavioral or surgical approaches to nocturia.

Source of Funding: None

ABSTRACT #6 - PODIUM

PREVALENCE OF THE NOCTURNAL POLYURIA SYNDROME IN THE VETERANS AFFAIRS OUTPATIENT UROLOGY SETTING

Authors: Curran J. Emeruwa*, MD, Matthew R. Epstein*, MD Candidate, Kyle P. Michelson*, MD Candidate, Thomas F. Monaghan*, MD Candidate, Jeffrey P. Weiss*, MD
Brooklyn, New York, USA
Presentation to be made by Dr. Curran J. Emeruwa

Introduction and Objective: Nocturia, defined as the symptom of waking during the period of intended sleep in order to void, is among the most common and bothersome lower urinary tract symptoms (LUTS) in the general population. The etiology of nocturia can be divided into four distinct categories: (1) 24-hour global polyuria; (2) reduced bladder capacity (functional or extrinsic); (3) primary/secondary sleep disorders; and (4) nocturnal polyuria (NP). NP may be attributable to a broad range of urologic and systemic comorbidities, medication use, and modifiable behavioral factors. In the absence of identifiable contributory comorbidities, patients with NP are said to have nocturnal polyuria syndrome (NPS), which is thought to be due to a blunting of the normal circadian rhythm in arginine vasopressin. The purpose of this study was to determine the prevalence of NPS in the Veterans Affairs outpatient urology setting.

Methods: Retrospective database analysis of voiding diaries from male veterans who had established care for LUTS from 2007-2018. Patients were excluded if they reported fewer than 2 nocturnal voids on voiding diary analysis or had a comorbidity associated with NP, which included obstructive sleep apnea, congestive heart failure, chronic kidney disease, peripheral edema, diabetes insipidus, or diuretic use. As the present study design precluded identification of patients with NP owing to non-dipping nocturnal hypertension, patients with hypertension were initially included establishing a ceiling prevalence NPS, and then excluded to determine a floor value. The distinct cutoffs were separately employed to identify NP: Nocturnal Polyuria index (NPI; calculated as nocturnal urine volume divided by 24-h urine volume) >0.33; and nocturnal urine production (NUP) >90 mL/hr.

Results: A total of 283 completed voiding diaries and 202 patients had ≥ 2 nocturnal voids. After exclusions, at NPI >33, the floor and ceiling NPS prevalence were 21% - 41% respectively. At NUP >90 mL/h, the floor and ceiling NPS prevalence values were 17% and 32% respectively.

Conclusions: The prevalence of NPS in patients with nocturia in the present study lies between 17% - 41%. NPS constitutes a clinically relevant subgroup of nocturia among male patients in the Veterans Affairs outpatient urology setting.

Source of Funding: None

ABSTRACT #15 - POSTER

NOT SO SIMPLE: COMPARISON OF COMPLICATIONS AND OUTCOMES FOR SIMPLE AND RADICAL CYSTECTOMY

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Presentation to be made by Dr. Rac

Introduction and Objective: Cystectomy with urinary diversion is associated with significant morbidity and mortality. Little data exists for short- and long-term post-operative outcomes for simple cystectomy (SC) performed for nonmalignant diseases. Clinicians frequently extrapolate outcomes of patients undergoing radical cystectomy (RC) to counsel patients preoperatively. We hypothesized that differences in short and long term outcomes for SC versus RC would exist. Our study objective was to address the knowledge gap of the complication rates and outcomes of SC.

Methods: We performed a retrospective review of patients who underwent SC and RC at our institution between 7/2005-5/2017 and identified 227 patients (215 RC and 11 SC) with adequate follow-up data. The majority were RC patients, so these were matched 3:1 to SC patients for comparison based on demographics parameters. Chi-square and Fisher's Exact tests were utilized for analysis with a significance level $p > 0.05$ for each. Patient demographics, comorbidities, short-term (90 day) outcomes and long-term ureteroanastomotic strictures are reported.

Results: Baseline characteristics between SC and RC patients were similar except for BMI and age, with patients undergoing SC having a higher BMI ($p = 0.01$) and younger age ($p = 0.02$). No significant differences were noted in comorbid conditions including smoking status, diabetes or cardiovascular disease. Comparing short-term outcomes including reoperations, renal failure, transfusions, DVT/PE, infections, bowel obstructions or wound complications, there were no significant differences noted for patients undergoing RC versus SC. Most complications were classified Clavien-Dindo Grade 1 in each group. Comparing long-term ureteroanastomotic stricture formation revealed no significant differences between the groups. There was no significant difference in mortality 1 year after surgery, but patients that underwent RC had a statistically significant higher mortality rate at 5 years after surgery ($p = 0.043$). There was no significant difference in length of follow-up.

Conclusions: No significant difference in short- or long-term complications rates for SC vs RC with urinary diversion was found aside from an increased rate of mortality at 5 years after surgery. This data can be used to inform patients and clinicians considering cystectomy with diversion for benign disease.

Source of Funding: None

ABSTRACT #14 – POSTER

RACIAL DISPARITIES IN RADIUM-223 TREATMENT IN A LARGE REAL WORLD POPULATION

Hanson Zhao* MD, Lauren Howard MB, Amanda De Hoedt MS, Martha Terris* MD, Christopher Amling* MD, Christopher Kane* MD, Matthew Cooperberg* MD MPH, William Aronson MD, Thomas Polascik* MD, Stephen Freedland MD

Introduction: Black men with prostate cancer are more likely to have unfavorable tumor characteristics and are at greater risk of prostate cancer mortality. Radium-223 is a FDA approved treatment for metastatic castration-resistant prostate cancer (mCRPC) that showed a survival benefit in the ALSYMPCA trial, where 94% of the participants were Caucasian. We aim to examine treatment patterns and outcomes of radium-223 in a large, heterogeneous population in the real world.

Methods: We reviewed charts of all men with diagnosed with mCRPC in the entire Veterans Affairs (VA) system alive as of January 1st, 2013 who received radium-223. We compared common treatment patterns and characteristics between black and nonblack men. We analyzed predictors of time from radium-223 start to overall survival and time to skeletal related event (SRE) with Cox models.

Results: 318 patients with bone mCRPC who received radium-223 were identified. 27% (87/318) were black. Black men were younger (67 vs 70 years, $p=0.001$) and had higher PSA and alkaline phosphatase (ALP) levels at radium start ($p=0.014$ and 0.017 , respectively). There were no significant differences in biopsy Gleason, number of bone metastasis, primary localized treatment (yes/no), PSA doubling time, bone pain, or number of radium injections. Black men had lower mortality risk (HR 0.75; 95% CI 0.57 to 0.98; $P=0.038$) on multivariable analysis. Comparison of common treatment patterns between black and nonblack men revealed that black men were more likely to receive other therapies prior to radium, including chemotherapy.

Conclusions: Using a large, heterogeneous, real world cohort, we describe differences in treatment patterns and outcomes with radium-223 between black and nonblack men with mCRPC. While black men had a lower risk of mortality in this cohort, they had higher PSA and ALP levels when receiving radium-223. They were also more likely to receive other therapies prior to radium-223, indicating a possible delay in radium use in black men.

ABSTRACT #7 - PODIUM

USE OF INDOCYANINE GREEN FOR URETERAL IDENTIFICATION DURING NON-UROLOGIC ROBOTIC SURGERY

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Houston TX
Presentation by: Pratik Kanabur, MD

Introduction & Objectives: Ureteral injury during non-urologic surgery can occur in up to 10% of cases. Surgeons often rely on the placement of temporary or lighted stents, or post operative cystoscopy, for identification of the ureter and verification of no injury. However, iatrogenic ureteral injury can occur during stent placement itself. Moreover, in the robotic setting, the surgeon must rely on visual cues in the absence of tactile feedback. Indocyanine green (ICG) is a fluorochrome, which was developed to be injected intravascularly to visualize vascular and lymphatic channels. It can also be injected into the ureter and visualized in the peritoneal cavity under near infrared fluorescence. We present our initial experience with intraureteral ICG during robotic colorectal surgery.

Methods: Patients who would potentially benefit from adjunctive ureteral identification during robotic colorectal surgery were identified. To introduce the ICG, we perform rigid cystoscopy (22 Fr) and a 5 Fr open-ended ureteral catheter is inserted up to 20 cm. 5 mL of 2.5 mg/mL ICG is gently injected in a pulsatile fashion as the ureteral catheter is withdrawn to the ureteral orifice. This is performed on one or both sides as needed. Intraureteral ICG is then detected using near-infrared laser fluorescence technology (Firefly®).

Results: Intraureteral ICG enhanced ureteral identification was performed in 6 ureters of 3 veteran patients undergoing robotic colorectal surgery between January 2018 and January 2019 at the VA Medical Center in Houston, Texas. In 2 of the cases no stents were left in place and in one case, stents were left bilaterally. ICG was instilled without complication and remained visible for the entirety of the operation. No intraoperative ureteral injuries occurred. On followup, there were no reported sequelae.

Conclusion: Intraureteral ICG effectively augments ureteral identification during robotic surgery. Using a technique similar to retrograde pyelogram, ICG can be easily and successfully instilled, allowing for rapid and accurate identification of the ureter throughout a robotic surgery. The technology is readily available to any site with current robotic capability and no additional equipment investment is needed.

Funding Sources: None

ABSTRACT #8 - PODIUM

LASER SPECKLE CONTRAST IMAGING: A NOVEL TECHNIQUE TO ASSESS PELVIC MICROVASCULAR PERFUSION (MVP) AFTER PROLONGED VAGINAL DISTENSION (VD) IN A RABBIT MODEL

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San Diego, CA, USA.
Presentation to be made by Dr. Daniel Han

Introduction and Objective: Prolonged vaginal delivery can result in direct trauma to the external urethral sphincter (EUS) muscle and global injury to the pelvic floor muscles, including neurovascular injury to the urethral sphincter complex. Previous reports also suggest that such injury related ischemic damage to the sphincter muscle results in sphincter dysfunction. The goals of our study were to evaluate: (i) impact of prolonged vaginal distension on pelvic muscle microvascular function using novel laser speckle contrast imaging technique; and (ii) to specifically examine if transpelvic magnetic stimulation (TPMS) would attenuate such microvascular injury.

Methods: Twelve-month-old female rabbits (n=4) were anesthetized and subjected to prolonged vaginal distension for 15 min using a 20F Foley catheter (Fig A) with simultaneous monitoring of pelvic hemodynamics, specifically microvascular perfusion (MVP) using laser speckle contrast imaging (LSCI; PeriCam System; Fig B). After VD, the rabbits were subjected to rTPMS using a magnetic stimulator (Magventure) with a B65 paddle by placing perineal region at the center of the coil (Fig B). A low amplitude (5%) rTPMS session (10 min/10 Hz) was performed and MVP was recorded at baseline, during VD, and rTPMS.

Results: LSCI quantifies MVP in arbitrary perfusion units (AU) and displays a real-time perfusion image (Fig B-bottom). VD produced 25-30% decrease in MVP (Fig C) which was attenuated by rTPMS resulting in an increase from 80 AU to 290 AU (Fig D).

Conclusions: Pelvic compression that mimics obstetric trauma is associated with concomitant ischemia of the pelvic and EUS muscle. TPMS improves pelvic MVP which will be beneficial to reverse VD related hypoxia to accelerate healing process.

Source of Funding: UC San Diego Academic Senate

ABSTRACT #13 - POSTER

IS SLEEP QUALITY RELATED TO PROSTATE CANCER DIAGNOSIS? RESULTS FROM THE REDUCE TRIAL

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Presentation to be made by Ms. Emily K. Wiggins

Introduction: Prior studies showed disrupted sleep is linked with increased risk of certain cancers, but there is little data in prostate cancer (PC). We tested the link between sleep quality and PC diagnosis overall and by tumor grade in REDUCE, a randomized trial of dutasteride for PC prevention. We hypothesized that worse sleep quality would be associated with increased risk of high-grade PC diagnosis.

Methods: REDUCE required baseline PSA between 2.5-10 ng/ml and a recent negative prostate biopsy. At baseline, 5,614 men completed a validated 6-item questionnaire to assess sleep quality. A scaled average of the responses (0 - 100 scale) was used to calculate a composite sleep score. We calculated an overall sleep score by combining data from all 6 questions. We also generated sleep scores based on each of the 6 questions separately. Higher scores indicated worse sleep. Logistic regression was used to test the link between baseline scores (modelled per 10-unit increase) and PC diagnosis at the study-mandated biopsy 2 years after randomization. Similarly, multinomial logistic regression was used to test the link between scores and low and high grade PC versus no cancer. Models were adjusted for age, region, race, digital rectal examination, body mass index, IPSS, diabetes status, coronary artery disease, prostate volume, PSA, PC family history, and trial arm.

Results: Median sleep score was 16.7 (IQR 6.6-26.7). On multivariable analysis, sleep score was unrelated to overall PC diagnosis (OR 0.99, 95% CI 0.94-1.05, p=0.703) or PC aggressiveness (p>0.267). However, trouble falling asleep (OR 1.08, 95% CI 1.02-1.13, p=0.004) and trouble falling back asleep (OR 1.06, 95% CI 1.01-1.12, p=0.025) were positively associated with high-grade PC diagnosis at 2-year biopsy. Conversely, trouble staying awake during the day was inversely associated with overall PC diagnosis (OR 0.95; 95% CI 0.92-0.99, p=0.018), and suggestively inversely associated with low-grade PC (OR 0.95; 95% CI 0.89-1.01, p=0.063) but not associated with high-grade PC (p=0.114).

Conclusions: Overall sleep score was not associated with overall PC diagnosis or with PC aggressiveness. In individual questions, trouble staying awake was weakly linked with lower PC risk, though this was driven by a link with low-grade PC. The clinical relevance of this is unknown. Interestingly, questions related to insomnia were linked selectively with high-grade PC. Whether this reflects type I error, dysfunctional or inadequate sleep, or is related to other causes of insomnia (anxiety/stress/etc.) requires further study.

Source of Funding: GlaxoSmithKline, Inc.

ABSTRACT #12 - POSTER

NEGATIVE PSA VELOCITY AS A PREDICTOR OF NEGATIVE BIOPSY IN PATIENTS WITH ELEVATED PSA

Jeffrey Arace*, Viktor Flores*, William Sterling*, Dennis Robbins*, Nicholas Suss*, Miriam Andrusier*, Nicholas Karanikolas, Andrew Winer, Jeffrey Weiss: Brooklyn NY

Presentation to be made by Mr. Jeffrey Arace

Introduction and Objectives: PSA as a screening tool for prostate cancer remains controversial, and the interpretation of a declining though elevated PSA (>4.0ng/ml) is often unclear. We examined the value of negative PSA velocity (PSAV) and finasteride-induced PSA decline in predicting negative biopsy result.

Methods: A retrospective review was conducted using data from an Institutional Review Board-approved database. Demographics, prostate specific antigen (PSA), PSA velocity (PSAV) and pathologic data were collected on men who underwent transrectal ultrasound (TRUS)-guided prostate biopsies between 1990 and 2018. PSAV was calculated using linear regression, and the criterion for inclusion was men with at least 2 PSA measurements recorded prior to the PSA that lead to biopsy. Negative PSAV was defined as PSAV <0 (a declining PSA, even if >4.0ng/ml); positive PSAV was ≥ 0 (stable or increasing PSA). Prostate volume, race and finasteride use were also considered. Multiple logistic regression was used to assess prediction of negative biopsy result.

Results: 341 men were found to have negative PSAV at time of biopsy, and 1379 were found to have positive PSAV. Negative PSAV was a significant predictor of negative biopsy result in men with PSA>4.0ng/ml (OR 2.039, 95CI 1.463-2.841, $p < 0.0001$), but finasteride use does not increase likelihood of negative biopsy result (OR 1.131, 95CI 0.753-1.698, $p = 0.553$). When PSA<4.0ng/ml, finasteride use (OR 2.471, 95 CI 1.240-4.924, $p = 0.010$) predicted negative result, though negative PSAV was no longer predictive (OR 1.157, 95 CI 0.684-1.959, $p = 0.587$). TRUS volume>50ml predicts negative biopsy result in men with PSA>4.0ng/ml (OR 3.394, 95CI 2.698-4.269, $p < 0.0001$) and in men with PSA<4.0ng/ml (OR 1.727, 95CI 1.026-2.907, $p = 0.040$).

Conclusions: Negative PSAV and elevated TRUS volume can predict negative biopsy result in men with PSA>4.0ng/ml, and elevated TRUS volume is also a useful predictor when PSA<4.0ng/ml. Finasteride use is predictive of negative biopsy result when PSA<4.0ng/ml, but not when PSA>4.0ng/ml. These findings suggest useful criteria by which to avoid unnecessary prostate biopsy (particularly in patients with concurrent BPH) but underline the complexity of interpreting changes in PSA.

ABSTRACT #9 - PODIUM

KNOWLEDGE OF HEMATURIA AND WILLINGNESS TO PARTICIPATE IN HOME SCREENING IN THE GENERAL POPULATION: AN ONLINE SURVEY OF OVER 1400 ADULTS

Matthew T. Hudnall, MD, Kyle P. Tsai, BA, Adam B. Weiner, MD; Mary-Kate Keeter, MS; Joshua J. Meeks, MD, PhD

Introduction and Objective: Screening for hematuria in a high-risk population may lead to earlier diagnosis of urologic cancers, but is not routinely performed. An online survey of adults in the United States was conducted to assess willingness to undergo home urine dipstick screening for hematuria and determine the impact of an educational pamphlet on knowledge of hematuria and willingness to screen at home.

Methods: A two-part online survey was administered to collect demographics and assess knowledge of hematuria and willingness to participate in home screening. On a 5-point Likert scale, 4 or 5 was considered "willing." After the pre-test survey, participants viewed an educational pamphlet on hematuria published by the Urology Care Foundation and completed an identical post-test survey. The primary outcome was pre-test willingness to screen for hematuria at home. Multivariable logistic regression was used to evaluate associations between participant characteristics and willingness to screen. Secondary outcomes were changes in willingness and knowledge of hematuria after pamphlet exposure. ResearchMatch.org was used to distribute the survey to adult volunteers from 9/25/18 to 10/15/18.

Results: Of 1862 people who agreed to participate, 1442 completed the survey (77%). The majority were male (54%) and White (87%). The median age was 48 and 12.6% of participants were Veterans. Knowledge of hematuria definition, causes, and risk factors increased significantly after pamphlet exposure. Pre-test willingness to home screen was 90% and did not change after pamphlet exposure ($p = 0.145$) (Figure 1). Older participants had an increased willingness to screen (per 10-year increase: OR 1.47 [1.28-1.68] $p < 0.001$). Participants who had not previously heard of hematuria from a health care provider were less willing to screen (OR 0.50 [0.27-0.94], $p = 0.033$). Risk factors for bladder cancer (i.e. smoking and occupational exposures) did not impact willingness. Limitations of the study include inherent bias of survey participants.

Conclusions: Willingness to perform home screening for hematuria is high in a general adult population. Knowledge of hematuria improved significantly after exposure to an educational pamphlet, which may be a useful tool to promote hematuria screening in a high-risk population.

ABSTRACT #10 - POSTER

PROSTATE WEIGHT AND RISK OF PROSTATE CANCER PROGRESSION AFTER RADICAL PROSTATECTOMY: A SEARCH DATABASE STUDY

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Presentation to be made by Mr. Taofik Oyekunle

Introduction and Objectives: We previously reported that large prostates at radical prostatectomy (RP) were linked with lower risk of high grade disease, positive margins, extracapsular extension and biochemical recurrence (BCR). In this larger study we build on our earlier findings to examine the relation between prostate weight and long-term outcomes in men who underwent RP.

Methods: We analyzed data from 7,809 men who underwent RP between 1988 and 2017 in the SEARCH database. After excluding men who had had transurethral resections of the prostate (n=162), those with incomplete data and extreme prostate weights (n=1,497), 6,150 men were included. Hazard ratios (HR) and 95% confidence intervals (CI) were determined for prostate weight and the outcomes of BCR, prostate cancer (PC) specific mortality (PCSM), castration resistant PC (CRPC) and metastasis, using Cox regression. Models were adjusted for age, race, center, PSA, year of surgery, pathologic grade group, surgical margins, extraprostatic extension, seminal vesicle invasion and lymph node involvement. We also analyzed the data stratified by surgical margin status.

Results: Median values for age, pre-RP PSA and prostate weight were 64 yrs, 6.5 ng/mL, and 42.0 g, respectively. During median follow-up of 7.8 yrs, 2166 (34%) had a BCR, 199 (3%) developed CRPC, 295 (5%) developed metastases, and 154 (2%) died from PC. In multivariable analyses, larger prostates were associated with lower risk of BCR (HR=0.68, CI: 0.59-0.79, p<0.001). HRs were null for PCSM, CRPC and metastasis (all p>0.16). In surgical margin stratum-specific analyses, larger prostates remained associated with lower BCR risk regardless of margin status (HR 0.64-0.73, p<0.002). In men with positive margins, larger prostates were associated with increased risk for PCSM (HR=2.05, CI: 1.00-4.20, p=0.049), CRPC (HR=2.02, CI: 1.09-3.77, p=0.03), and metastasis (HR=1.63, CI 0.97-2.73, p=0.065). In men with negative margins, prostate weight was unrelated to any long-term outcomes (HR 0.64-0.79, all p>0.4).

Conclusions: In a large multicenter dataset, larger prostate weight was associated with reduced BCR risk. However, larger prostate weight was associated with increased risk of poor long-term outcomes, but only among men with positive margins. The exact explanation for our findings is unclear. If validated in future studies, prostate weight should be included in risk models to predict long-term PC progression and further study is needed to understand the potential biological link between prostate weight and PC aggressiveness.

Source of Funding: NIH RO1CA231219 and K24 Ca160653

ABSTRACT #11 - POSTER

FAMILY HISTORY OF PROSTATE CANCER IS ASSOCIATED WITH INCREASED TUMOR AGGRESSIVENESS IN BLACK BUT NOT NON-BLACK MEN

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Presentation to be made by Ms. Kimberly Jenkins

Introduction and Objective: Family history (FH) of prostate cancer (PC) is a well-recognized PC risk factor, but black men have been underrepresented in prior studies. We used data from a biopsy cohort to determine the association between FH of PC and PC diagnosis, overall and by tumor aggressiveness, in black and non-black men. Given higher rates of PC incidence and mortality in black men, we hypothesized that a FH of PC would be more strongly associated with aggressive PC in black men.

Methods: We prospectively enrolled men undergoing prostate biopsy at the Durham NC VA from Jan 2007-Oct 2018. FH of PC (yes, no, unknown) was collected on questionnaires. FH degree was categorized as 1st (father, son, brother) or 2nd degree only [(great) grandfather, (great) uncle, 1st cousin, nephew, half brother]. Logistic regression was used to test the association between FH and PC diagnosis overall and by tumor aggressiveness [high (Gleason 7-10) or low grade (Gleason 2-6) vs. no cancer], overall and stratified by race. Models were adjusted for age and year at consent, race, PSA, DRE, prostate volume and previous (negative) biopsy.

Results: Of 1,225 men, 323 had a FH of PC, 627 did not and 275 did not know. 652 men were diagnosed with PC at biopsy, 184 with high-grade PC. On multivariable analysis, FH was unrelated to overall or low-grade PC diagnosis, overall or stratified by race (all p≥0.325). However, FH was associated with increased odds of high-grade PC in black (OR 1.85, p=0.041), but not non-black men (p=0.455). In black men, we found similar associations with high-grade PC for both 1st and 2nd degree FH (OR 1.85; p=0.065 and OR 1.92; p=0.196, respectively), though not statistically significant. In non-black men, relative to those with no FH, 1st degree FH was associated with borderline increased odds of overall PC (OR 1.68; p=0.054), with similar associations for low- and high-grade PC. In contrast, 2nd degree FH was inversely associated with overall (OR 0.29; p=0.023) and low-grade PC (OR 0.29; p=0.04), and suggestively inversely associated with high-grade PC (OR 0.24; p=0.129).

Conclusions: Positive FH of PC was associated with increased tumor aggressiveness at biopsy in black men, but not non-black men. These findings did not vary by FH degree in black men. Non-black men with 1st degree FH were suggestively more likely to be diagnosed with PC, while those with only 2nd degree FH were significantly less likely to be diagnosed with PC than those with no FH. Further research is required to tease apart the contribution of genetics from increased PC awareness potentially influencing screening and biopsy rates in men with FH.

Source of Funding: None