

Radical prostatectomy – A 12 year review at the San Fernando General Hospital

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*Division of Urology, Department of Clinical Surgical Services, University of the West Indies, St Augustine Campus, Trinidad and Tobago***Background:** Prostate cancer is the leading cause of cancer related deaths in men in Trinidad and Tobago.**Objective:** To report on the oncological outcome and complications following radical retropubic prostatectomy over a 12 year period at the San Fernando General Hospital.**Method:** The records of all patients who underwent radical retropubic prostatectomy at the San Fernando General Hospital from 2003 to 2014 were reviewed. All data regarding demographics, preoperative PSA, clinical stage, and Gleason score were recorded. Data were also collected for operative blood loss, biochemical progression and post-operative complications.**Results:** The records of 78 patients were reviewed. The average age was 67 ± 2.8 year, with a mean PSA of 10.4 ng/dL and average Gleason score was 7. The mean intra-operative blood loss was 2.6 L. Post-operatively 70% of patients had new onset erectile dysfunction and 12% had persistent incontinence. The 5 year biochemical recurrence-free survival was 70%, with mean time to biochemical failure of 41 months.**Conclusion:** The oncological outcome after radical retropubic prostatectomy at the San Fernando General Hospital seems to be comparable to regional and international standards.**Profile of prostate cancer at the Kingston Public Hospital – A review of TRUS biopsy data**M BROWN, C WALTER and M BROOKS
*Kingston Public Hospital, Jamaica, West Indies***Background:** Prostate Cancer is the most frequently diagnosed malignancy and the leading cause of cancer mortality in Jamaica. It constitutes a major part of the workload of the Urology department. The PSA era has seen a trend towards diagnosing earlier disease and decreasing prostate cancer mortality. Anecdotally, this international trend has not been seen locally. This study is aimed at documenting the profile of the disease in our local population.**Methods:** The log of all prostate biopsies conducted between January 1, 2013 and June 30, 2014 was retrieved. The files for the patients were reviewed and data such as pre-procedure PSA and clinical stage as well as the outcome of the biopsies were collected. Confirmed cancer cases were further scrutinized for stage, grade and risk category. The final treatment decision was also documented.**Results:** There was a high cancer detection rate of >40% with a large proportion of men having high-risk parameter. Very few men were deemed candidates for curative treatment.**Conclusion:** The data confirms that many of our patients are detected at a late stage and that locally the disease is characterized by higher-risk parameters than international norms. The application of more rigid screening protocols may address these concerns.**An epidemiological profile of prostate cancer in Guyana**C PRASHAD, M RAMBARAN and B ALLI
*Georgetown Public Hospital Corporation, Georgetown, Guyana, South America***Objective:** To identify the epidemiological profile of prostate cancer in Guyana.**Design and Methods:** Demographic and clinical data on prostate cancer, for the period January 2011 to December 2013 were collected from the records of the Histopathology Laboratory, Guyana Cancer Registry and the Urology Department at GPHC and reconciled to avoid duplication.**Results:** Over the study period 381 prostate specimens were analysed histologically with 80 (21%) positive for cancer averaging 20 cases per year. Of the 80 histologically diagnosed prostate cancers 35 were from needle core biopsy, 21 from TURP and 24 from undefined procedure(s). 44% of needle core biopsies and 26% of TURP specimens reported cancer. 52% had Gleason scores between 8 and 10. Another 74 patients were diagnosed clinically (hard nodular prostate, metastasis, PSA >100 ng/dL). Combining the histologically diagnosed with those clinically diagnosed leads to an incidence of 39 cases of prostate cancer per year. 60% of all cases were from Region#4 and over 70 years old. There was a preponderance of people of African descent. 39% had metastatic disease.**Conclusion:** On average 39 persons are being diagnosed with prostate cancer each year in Guyana. The majority of these patients are Afro-Guyanese and 70 years or older. A large number of patients present with advanced prostate cancer and a PSA >100 ng/dL and with Gleason Scores above 8 suggesting a poor prognosis. At GPHC 48% of prostate cancer cases are being diagnosed clinically.

The impact of gynaecological malignancy on nephrostomy tube placement at the Department of Urology of the San Fernando Teaching Hospital, Trinidad

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Objectives: The purpose of this study is to analyse the impact of gynaecological malignancy on the nephrostomy service at the San Fernando Teaching Hospital in Trinidad and Tobago.

Methodology: In this retrospective cross-sectional study, notes of patients from the Department of Urology, San Fernando Teaching Hospital, undergoing nephrostomy tube placement for 3 years, January 2012 to December 2014, were reviewed. Clinico-pathological and epidemiological data were analysed using statistical software (SPSS version 22).

Results: Over the 3 year period, 130 nephrostomy tubes were inserted – 67 male and 63 female. For female patients, cervical cancer was the major indication for nephrostomy tube placement (51.7%). Of these patients 93.6% presented for the first time to their gynaecologist with advanced cervical cancer. For male patients the major indication for nephrostomy tube placement was nephro-ureterolithiasis (47.6%). The most common malignancy for males requiring nephrostomy tube placement was prostate cancer (23.8%).

Conclusion: This paper highlights the fact that the majority of nephrostomy tube placements in females is for advanced cervical cancer whereas in males, the majority of nephrostomy tube placements is for benign stone disease. It is thus important that urologists are cognizant of this data, and implement appropriate screening and preventative measures for cervical cancer.

Prostate cancer screening in the Bahamas: A 10 years review, 2004–2013

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Introduction: Prostate cancer is the most common and leading cause of cancer specific deaths in Bahamian males;

advanced disease on initial presentation is the typical clinical profile. In 2001, the Cancer Society of the Bahamas advanced its community awareness prostate agenda to an annual initiative with both digital rectal prostate examinations and Prostate Specific Antigen (PSA) testing at no charge on an annual basis.

Objectives: This study sought to evaluate the factors related to attendance and the possible impact of this annual September campaign in the Bahamas for 10 years, 2004–2013.

Methods: A public media campaign is launched during the month of September inviting men to attend the prostate cancer clinics for a digital rectal examination by urologist and registrars and PSA blood test, free of charge. All attendees are registered for age, occupation, contact information, prior clinic visits and factors to attendance. Clinics are conducted after normal working hours government polyclinics. All men are informed of their results within 8 weeks and those with abnormal findings are offered a urology consult at no charge for further evaluation.

Results: During this period, there were 5,098 clinic visits and 4,956 PSA samples taken. The awareness campaign suggests that clinic access, availability, consistency and credible physician service providers, incentivize these attendance achievements; the media campaign and directives from spouses and friends provided additional influences.

In the review of the clinical profile by D'Amico classification, comparing initial clinical presentation of the disease in the Bahamas during this period, a trend to an earlier stage presentation did not occur.

Conclusion: The study suggests that Bahamian males will access health care services for early detection of prostate cancer if available; national prostate cancer survival outcomes however, have not been impacted.

The outcome of antenatal hydronephrosis in a single paediatric centre

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Objectives: Antenatal hydronephrosis (AN) is the most common urological problem found in antenatal screening. The aim of this study was to determine the

outcome of all patients with AN who were confirmed postnatally between 2007 and 2012.

Methodology: A retrospective study was done using the medical records of all patients referred to our centre with antenatally diagnosed hydronephrosis who were followed up postnatally.

Results: Postnatal ultrasound confirmed hydronephrosis in 55 out of 57 patients that were diagnosed with AN. Two patients were found to have multicystic dysplastic kidneys. Of these 55 patients, 34 (62%) had mild HN, 11 (20%) had moderate HN and 10 (12%) had severe HN. 35 patients (63.7%) were managed conservatively with routine ultrasound surveillance and 20 (36.3%) patients required surgical correction. Of these, 7 (12.7%) had pyeloplasty, two of which required percutaneous nephrostomy first, 9 (16.4%) required nephrectomy (three awaiting), one of which required percutaneous nephrostomy first, 1 (1.8%) who had bilateral hydronephrosis had right pyeloplasty and is awaiting left pyeloplasty, 1 (1.8%) had a ureteric reimplantation, 1 (1.8%) had a circumcision and 1 (1.8%) patient refused surgery.

Conclusion: Prenatal diagnosis of antenatal hydronephrosis is accurate in most patients and the degree of hydronephrosis in the majority of children is mild and can be managed with conservative treatment and close follow up. However, about a third of patients required surgical intervention and hence early detection and close follow up is important.

Case report – Spontaneous rupture of a hydronephrotic kidney in an infant

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Objectives: To review the rare case presentation of spontaneous rupture of a left hydronephrotic kidney in a child.

Abstract: Hydronephrosis is frequently detected antenatally via ultrasound and in many instances, is found to be secondary to pelvi-ureteric obstruction. A previously well, 6 week old male child presented to the emergency department with a 2 day history of abdominal distension and increased irritability, with no changes in urinary or bowel habits. There was no history of febrile symptoms or history of

trauma. Antenatal ultrasound showed no abnormalities. On inspection, the abdomen was noted to be grossly distended, and was non-tender on palpation; however organomegaly was difficult to assess secondary to the tense abdomen. Ultrasonography findings were a left upper quadrant multi-cystic mass not seen separately from left kidney, with minimal abdominal free fluid; the right kidney was normal. Contrast enhanced imaging was subsequently performed; a large perinephric collection and abdomino-pelvic free fluid was found. A diagnosis of spontaneous rupture of hydronephrotic left kidney was made and supportive management ensued. The perinephric collection resolved with conservative measures. Subsequent investigations confirmed left pelvi-ureteric obstruction with thirty percent function. As a result, a left pyeloplasty was performed.

Conclusion: Spontaneous rupture of a hydronephrotic kidney is a very uncommon presentation of ureteropelvic junction obstruction. We sought to highlight the management of this infrequent clinical condition.

Review of 10 years of urethroplasty at the San Fernando General Hospital

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Purpose: We report our experience and follow-up for patients who underwent urethroplasty for urethral stricture disease.

Materials and Methods: We reviewed the data from the operation logs at the San Fernando General Hospital between 2004 and 2014. All urethroplasty cases were identified and data coded retrospectively. Analysis was conducted via SPSS.

Results: A total of 23 cases were done for the period 2004–2014. The mean age was 54.43 years and mean stricture length 3.52 cm. The most common site was the bulbar urethra (34.8%) followed by the penile urethra (30.4%). Twenty patients (86.96%) had previous treatments with 60% being endoscopic and 52.2% having more than 2 prior treatments options (endoscopic or surgical). Quality of life improved in 82.6% of patients with a mean Qmax of 13.4 mL/s. Twelve patients suffered complications ranging from infec-

tion (21.7%), stricture recurrence (26.1%) and chordee (4.3%). There was no difference in stricture recurrence rates between technique used (excision and primary anastomosis, dorsal onlay, ventral onlay).

Conclusion: Urethroplasty is the gold standard in the management of urethral stricture disease. The success rate at our institution is 73.91% and longer follow up is required to determine the overall success rate.

Case report – Breast cancer with metastases to the bladder

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This is a case of a 33 year old female with a 3 year history of breast cancer and presenting with frank haematuria. CT-IVU showed an obstructed left kidney with a bladder tumour. TURBT was done which also relieved her obstruction. Histology surprisingly came back as secondary breast cancer confirmed on immunohistochemistry and genetic typing. Within 2 weeks of her TURBT she developed peri-orbital secondary deposits and died while receiving chemotherapy.

Case report – Assessment and management of chronic scrotal pain

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Introduction: Chronic scrotal pain is occasionally encountered in urological practice and its assessment and management can be frustrating to both the physician and patient alike. We would like to discuss such a case managed in our institution.

Case: We present a case of a 21y/o male who presented with a 9 month history of debilitating pain on the left testis for which no cause or relief was found despite several investigations and interventions. Pain was temporarily relieved after ipsilateral spermatic cord blocks on two separate occasions and the patient subsequently underwent microdissection (denervation) of the left spermatic cord which was successful in absolving his pain.

Discussion: The assessment of the patient with chronic scrotal pain includes a his-

tory, examination and an ultrasound scan. In 80% of patient no definitive cause is found. In these cases a spermatic cord block can be performed by injecting 0.25% bupivacaine into the spermatic cord on the affected side which (i) localizes the possible source of the pain to the testicle or cord structures and (ii) it is predictive of the success of denervation if the spermatic cord. Surgical denervation of the cord consist of dividing the structures of the cord except the vas, the arteries of the cord and some lymphatics. Morbidity of the procedure is low and satisfaction rates can be as high as 90%.

Validation of the prostate cancer prevention trial2 risk calculator in a Trinidadian population: Preliminary results

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Objectives: To determine whether the Prostate Cancer Prevention Trial (PCPT) risk calculator can be applied to a Trinidadian population.

Method: A retrospective analysis was carried out on one hundred and twenty-five patients who underwent prostate biopsies due to increased PSA or abnormal DRE at the Urology Department, San Fernando General Hospital from January 2013 to July 2014. The risk of developing prostate cancer and high grade prostate cancer was calculated using the PCPT2 calculator. This was then compared to the histological result for each patient.

Results: Mean patient age was 68.8 years, with PSA values ranging from 0.9 to 600 ng/mL. 63% of men were of African descent, while 35.2% were of East Indian descent. Adenocarcinoma was histologically confirmed in 73.6% of patients. Of these, 44.5% were high grade tumors. The rate of prostate cancer increased with increasing PCPT2 risk. 100% of patients with PCPT2 risk >75% had histologically confirmed prostate cancer on biopsy. However, prostate cancer rates were more variable in patients with PCPT2 risk <75%.

Conclusion: Although this is an ongoing study, based on preliminary results, we are unable to validate the PCPT2 risk calculator for our population.

A realistic approach to optimizing male fertility preservation in Trinidad and Tobago

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Background: Male infertility is defined by abnormal semen parameters, but may be present even when a semen analysis is normal. Where there is no readily identifiable causal factor, it is defined as idiopathic male infertility. Idiopathic male infertility accounts for 60–75% of cases. Sperm cryopreservation is a method to preserve spermatozoa at subzero temperatures (–196 °C). The knowledge that sperm are successfully banked can have implications for individual pride, self-esteem, body image, life planning, managing relationships, as well as a coping mechanism for cancer.

Aim: To define the technologies which currently exist in Trinidad and Tobago to preserve male fertility; and to outline when sperm cryopreservation should be offered to patients.

Conclusions: In line with international guidelines, sperm freezing should be offered to all men undergoing chemotherapy, radiation or surgical interventions that may interfere with spermatogenesis and or cause ejaculatory disorders. Sperm-freezing done locally is safe and offers patients an ease of mind if going through procedures that may render them infertile.

A novel live cell microfluidic diagnostic using phenotypic biomarkers with objective algorithmic analysis for genitourinary cancer risk stratification

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Objectives: Over-diagnosis and overtreatment of indolent Gleason 6 prostate cancer

is an ongoing challenge and current clinical, molecular, and genomic markers have shortcomings in risk stratification. This analytical validation study evaluated a novel phenotypic biomarker (functional, molecular and biophysical) panel in live cell assays using a microfluidic device and machine vision algorithms to predict adverse pathology in genitourinary (GU) cancers.

Methods: Fresh genitourinary (GU) cancer tissue (prostate 120, kidney 15 and bladder 15) were grown ex vivo and a panel of phenotypic biomarkers measured using microfluidics, automated imaging and machine vision algorithms. Analysis yielded oncogenic and metastatic potential (OP and MP) scores that were highly correlated with adverse pathology in the surgical specimens.

Results: Phenotypic biomarkers clearly distinguish normal from cancer cells. Concordance analysis of adverse pathology with the objective OP and MP scores demonstrated statistical significance in distinguishing Gleason 6 from Gleason 7 prostate cancer with sensitivities and specificities >80%. Similar findings were seen with the kidney and bladder cancer samples.

Conclusion: Phenotypic biomarkers in live cultured GU cancer cells differentiate Gleason 6 and 7 prostate cancers and are highly correlated with adverse pathology in surgical specimens. This novel phenotypic biomarker platform holds promise as an aid in GU cancer risk stratification and treatment decision-making.

Does the type of conduit affect allograft survival?

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Objectives: To discuss the operative choices when doing a allograft renal transplant in a high pressure native lower urinary tract as well as a review of the literature. A case report of an eighteen year old male with previous posterior urethral valves who is scheduled to undergo a renal transplant. Having a high pressure system will contraindicate direct transplantation of the ureter into his bladder. While an ileal conduit is acceptable in most situations, does it confer an increased risk of infection?

Results: The armamentarium available by which to allow for drainage is wide. The decision as to whether to give him a conduit or an orthotopic bladder will impact

the rest of his life. Also his risk of infection while on immunomodulation needs to be considered.

Conclusion: The choice of procedure will affect the quality of life of this young man who is a capable athlete and would prefer to not have a stoma if possible.

Knowledge, attitudes and practices towards saw palmetto and other herbal products among men with prostate disease in a urology centre in Trinidad and Tobago

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Objective: To investigate the knowledge, attitudes and practices towards saw palmetto and other herbal products among men attending the urology outpatient clinic at San Fernando General Hospital.

Methodology: This was a prospective, cross-sectional study carried out between February and May 2015. A structured, interviewer administered questionnaire was used to collect data from men identified as having either benign prostatic hyperplasia (BPH) or prostate cancer and who were randomly selected from the Urology Department's general, uro-oncology and BPH clinics. This questionnaire consisted of sections on sociodemographic details as well as knowledge and attitudes towards herbal products, and in particular saw palmetto. Data were compiled in Microsoft Excel and analysed using SPSS version 20.

Results: Two hundred (200) men were interviewed. The mean age of the population was 69 years (Std Dev. 8.06) and most were from the south (56.5%) or central (19%) regions of Trinidad. Fifty-two percent (52%) had BPH and 34.5% had prostate cancer. Overall, 85 men (42.5%) indicated use of herbal products of whom 53 (62.3%) used saw palmetto either alone or in combination with other products. The most common reason given for using herbal products was maintaining prostate health (40%). Among men who had heard of saw palmetto or used it, 25% believed it may be used to reduce the risk of prostate cancer and 25% believed that it may be used to treat prostate cancer. Thirty-six percent (36%) were of the opinion that saw palmetto is effective in treating the symptoms of an enlarged prostate.

Conclusion: This study demonstrates that the use of herbal products is common among men with prostate disease in Trinidad and Tobago and that saw palmetto is the most common product used. It also highlights the prevalence of misconceptions about the efficacy of saw palmetto.

Creation of a prospective electronic database in your department

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Objectives: To demonstrate the creation of a clinical data collection system using readily available computer programs (Microsoft Office), to demonstrate the feasibility of clinic databases and to demonstrate the use of filters in data collection for research purposes.

Methodology: There is a rising need for clinicians to prospectively collect and store data in a format that is easy to retrieve and analyze. Limitations to clinicians utilizing current technology include a lack of knowledge, stigma that data can be lost or stolen, and familiarity with working with paper based records. Having an electronic database increases efficiency, decreases physical space required and facilitates analysis with simple search functions. Records can be imported to already known statistical analysis software for research purposes. Using Microsoft Access, databases were designed to input pertinent information for chosen urological conditions. Forms were constructed to input information which would then be automatically stored in tables. Separate databases were constructed for Flexible Cystoscopy, URS and Laser, BPH Clinic, Active Surveillance, Prostate Cancer Clinic and Urology Outpatient Clinic. Information stored included patient demographics and any relevant details to the respective condition or procedure.

Results: Early compliance was a challenge but within a short space of time data entry became second nature for members of the team. Pertinent clinical information was retrieved in an efficient manner without having to review patient files. Already we are able to generate hypotheses based on current information available in our databases.

Conclusion: Creation of an electronic database can be challenging in a busy ser-

vice but the rewards it provides can be experienced early on, and may yet bear fruit in the future. We will encourage that this be done not only in our department but in others as well, as a tool to improve patient care and facilitate research.

Evaluation of renal biopsies using the real time ultrasound guided percutaneous technique

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Objectives: To determine the success rates of retrieving sufficient renal tissue for characterizing kidney disease, which plays a pertinent role in treatment and prognosis of renal disease.

Methodology: A retrospective analysis of 26 percutaneous renal biopsies from January 2014 to August 2015 was performed. Patients' pathology reports, medical records and complications were reviewed.

Results: The study population consisted of patients suffering from chronic kidney disease ranging from the ages of 15 to 68 years with approximately equal numbers of males and females. Nine of the twenty-six biopsy reports were still being processed at the time this study. There was 82% success rate at acquiring samples that provided sufficient information to assist the clinician in determining the aetiology and proper management of the patients. The remaining biopsies consisted of either skeletal muscle or the sample was insufficient for pathological examination.

Conclusion: Renal biopsy is a relatively safe and minor procedure which plays a key role in the diagnosis, prognosis and management of patients with chronic kidney disease. No major complications were noted in this study group, the most frequent complaint was macroscopic haematuria which resolved spontaneously and occurred in 29% of patients. The processing of renal biopsies are complex and require a fully equipped anatomical pathology laboratory, involving the use of immunohistochemistry and electron microscopy to maximize the diagnostic yield of the sample. Based on the simplicity and multiplicity of information that can be obtained from a renal biopsy, recommendations can be made to extend the indications for renal biopsies beyond the evaluation of chronic kidney disease.

A 5 year review of testicular torsion at San Fernando General Hospital

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Purpose: Testicular torsion (TT) is a true surgical emergency. Its neglect or delay in treatment can result in orchietomy and psychological assault. We determined whether a presentation time, climatic conditions, blood parameters and colour doppler ultrasound (CDU) findings may affect outcomes at San Fernando General Hospital.

Materials and Methods: We retrospectively analysed the medical records of patients who underwent surgical exploration between August 2010 and August 2015. Inclusion criteria included any patient who had testicular torsion. Patients who had epididymo-orchitis or elective repair were excluded from the analysis.

Results: In total, 38 patients were surgically explored for TT. TT was seen more commonly in patients 25 years or less (81.6%) with 61.3% experiencing right sided pain. Symptom durations was greater in the orchietomy group with a mean difference of 71 h ($p < 0.01$). Time to presentation >24 h was associated with a significant increase in orchietomy ($p < 0.01$). There was no association between time from emergency department to operating room. The salvage rate was 50%. There was an increase in orchietomy in the dry season versus the wet season ($p < 0.01$). There was significance correlation between CDU findings and surgical outcome ($p < 0.01$). Although blood parameters were elevated, there was no statistical difference in surgical outcome. **Conclusion:** Of significance, orchietomy rates were found to be significantly associated with time to presentation >24 h, climatic dry season (January to June), colour doppler ultrasound findings.

4Kscore is highly correlated with grade and stage of prostate cancer in radical prostatectomy specimens

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Introduction: A recent US prospective validation study confirmed the 4Kscore

accurately predicts aggressive prostate cancer on prostate biopsy. The radical prostatectomy (RP) cohort from this study was utilized to investigate the association between 4Kscore and pathologic grade and stage at RP.

Methods: Prospective enrollment of 1,312 men referred for prostate biopsy for clinical suspicion of prostate cancer occurred at 26 sites throughout the United States from October 2013 to April 2014. Men with positive biopsies who elected R were studied. The 4Kscore algorithm incorporates a panel of 4 Kallikreins (total PSA, free PSA, intact PSA and human kallikrein-2) in addition to age, digital rectal

examination, and prior biopsy status. The concordance between the 4Kscore prior to biopsy and grade of prostate cancer at RP was assessed. 4Kscore test results were compared for those with and without non organ-confined tumors at surgery using the Wilcoxon rank-sum.

Results: Among the 1,312 enrolled men, 144 found to have prostate cancer on biopsy underwent RP. There was a significant association between the 4Kscore and grade at surgery with higher scores relating to worse grade. For men with Gleason 6, 7, and 8 or higher cancers in the surgical specimen the median (IQR) 4Kscore was 7% (4, 12), 25% (12, 38), and 47%

(24, 66) ($p < 0.0001$). The median 4Kscore among men with non organ-confined cancer was significantly higher than men with cancers confined to the prostate ([36% (IQR 19, 58)] vs [19% (IQR 9, 35)], $p = 0.002$).

Conclusions: In a subset of men undergoing RP, the 4Kscore significantly correlated with pathologic Gleason grade and extracapsular extension in the RP surgical specimens. Higher scores were linked to higher grade and more aggressive histology. The 4K test can benefit treatment decision making in men with prostate cancer contemplating active surveillance versus immediate definitive treatment.