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MP-05.01

Bladder Cancer (BCa) Control Outcomes Have Not Improved within the Last Thirty Years: A Trend Analysis in the United States

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Introduction: BCa is the second most common genitourinary malignancy after prostate cancer. We set to examine the overall and stage-specific ageadjusted incidence, five-year survival and mortality rates of BCa in the United States, between 1973 and 2006.

Methods: We identified 136339 patients that were diagnosed with histologically confirmed BCa between 1973 and 2006, within the Surveillance, Epidemiology and End Results database. Age-adjusted incidence, mortality, and five-year cancer-specific survival rates were calculated. Temporal trends of age-adjusted incidence and mortality rates were quantified using the estimated annual percentage change (EAPC). All analyses were stratified according to disease stage.

Results: Age-adjusted incidence rate of BCa increased from 21.0 to 25.8 per 100 000 person-years between 1973 and 2006. For the same time period, stage-specific analyses revealed an increase for localized stage BCa: 15.4 to 20.4 (EAPC: +0.7%, $p<0.001$) and distant stage BCa: 0.5 to 0.7 (EAPC: +0.7%, $p=0.003$). No significant changes were observed for regional stage. Stage-specific five-year survival rates increased for all stages, except for distant disease. No significant changes in mortality were recorded among localized (EAPC: -0.2%, $p=0.1$) and regional stage (EAPC: -0.1%, $p=0.2$). However, an increase in mortality rates was observed among distant stage (EAPC: +0.6%, $p=0.02$).

Conclusions: Virtually all changes in incidence, survival and mortality were minor, and hardly of any clinical importance. Consequently, it appears that for all BCa stages. no improvement in detection or management has been achieved during the last 30 years

MP-05.02

Does Patient Age Impact Survival after Radical Cystectomy?

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Introduction and Objectives: With increased longevity in the population, urologists treat and will treat more and more often senior patients with bladder cancer (BC). The aim of the current study was to analyze the impact of patient's age on survival after radical cystectomy (RC).

Methods: Two ethics approved RC databases including consecutive muscle invasive BC patients undergoing radical cystectomy at UHN, Toronto, Canada (1992-2008) and University of Turku, Turku, Finland (1986-2005) were included. Six hundred thirty five patients who underwent RC were analyzed. Patients were separated according to their age into four groups and compared for their characteristics, recurrence-free survival (RFS), disease-specific survival (DSS) and overall survival (OAS).

Results: Patients age and gender distribution is presented in Table 1. An ileal conduit was the preferred diversion type for all patients >80 years Although elderly patients had worse ASA scores ($p<0.0001$), most of the patients undergoing RC were in a good ASA group. No statistical difference between age groups was observed in terms of RFS and DSS ($p=0.59$ and 0.23) (Figure 1), although OAS was statistically different ($p<0.0001$).

Conclusions: Although RC is an operation with significant morbidity, it is a viable treatment strategy for patients with a good health status irrespective of their age. Senior patients (>80 years) should not be denied RC if they are deemed fit solely based on age criteria.

Table 1. Patients' age and gender distribution. MP-05.02

	Age			
	<60	60-70	70-80	>80
Patient number	169	198	218	50
Gender (%)				
Female	37 (22)	42 (21)	44 (20)	15(30)
Male	132 (78)	156 (79)	174 (80)	35 (70)

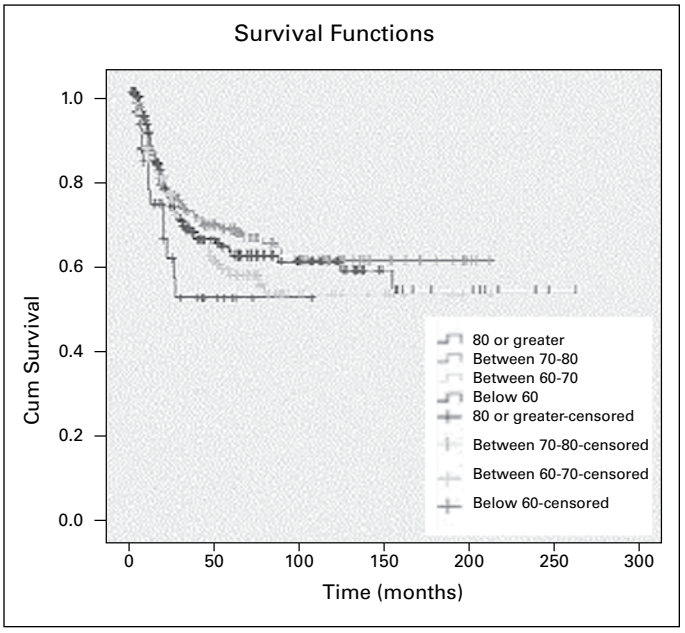

Fig. 1. Kaplan Meier survival plots of different age groups for disease specific survival (DSS) ($p=0.23$). MP-05.02

MP-05.03

Advanced Age is an Independent Predictor of Cancer-Specific Mortality after Radical Cystectomy for Urothelial Carcinoma of the Urinary Bladder: A Competing-Risks Regression Analysis

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Introduction and Objectives: The prognostic significance of advanced age on cancer-specific mortality (CSM) following radical cystectomy (RC) remains controversial. A tertiary care center reported on comparable cancer control outcomes between the elderly relative to younger patients using competing-risks analyses. To validate these findings, we attempted to assess the effect of advanced age on CSM after RC within a large population-based cohort.

Methods: Using the Surveillance, Epidemiology, and End Results (SEER) database, we identified 11854 patients treated with RC for UCUB. Age was stratified into four groups: ≤59 years old, 60-69 years old, 70-79 years old, and ≥80 years old. Logistic regression analyses were performed to examine the effect of disease stage at presentation and age. Cumulative incidence plots explored the impact of age on CSM rates, after accounting for other-cause mortality (OCM). Finally, competing-risks regression models for prediction of CSM were fitted.

Results: In multivariable logistic regression models, increasing age achieved independent predictor status for more advanced stage at RC (p<0.001). After controlling for OCM, the five-year CSM rates for patients aged ≤59, 60-69, 70-79 and ≥80 years were respectively 31.6% vs 35.1% vs 35.6% vs 43.6% (p<0.001). In multivariable competing-risks regression analyses, septua- and octogenarians were 20 and 62% more likely to succumb to CSM after RC, respectively (both p<0.001).

Conclusions: Advanced age at RC for urothelial carcinoma of the urinary bladder is independently associated with worse survival than their younger counterparts, even after adjusting for the possibly confounding effect of OCM.

MP-05.04

The Role of Lymph Node Dissection during Nephroureterectomy in the Management of Upper Urinary Tract Urothelial Carcinoma: The Canadian Experience

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Introduction and Objective: Nephroureterectomy, either open or laparoscopic, is the standard of carefor patients with upper urinary tract urothelial carcinoma (UC), but the role of lymph node dissection (LND) remains unclear. Here we evaluate the association between LND and survival among patients undergoing nephroureterectomy.

Methods: This multicentre study includes 1029 patients from 10 Canadian institutions who underwent nephroureterectomy, with or without LND, for upper urinary tract UC between 1990 and 2010. Disease specific survival (DSS), overall survival (OS), and recurrence free survival (RFS) were compared for patients who had a node negative LND, node positive LND, orno LND using Kaplan-Meyer analysis. The association between survival and number of positive nodes, number of nodes resected, and ratio of positive nodes to nodes dissected was investigated using logistic regression analysis.

Results: The median follow-up for the entire cohort was 19.8 months (IQR = 7.2 - 53.8). The mean patient age at time of surgery was 68.6 (SD = 10.7), and 375 (36.5%) were female. 276 (26.8%) patients underwent LND (110 laparoscopic) with a mean of 4.3 (SD = 4.4) nodes dissected, and 77 (27.9%) of these patients had node positive disease. Overall, 101 (36.5%) patients who underwent LND died over the course of follow-up, including 78 (28.2%) who died of UC. Disease recurrence was noted in 168 patients (60.9%) who underwent LND. Patients with a node positive LND had a significantly shorter of OS, DSS, and RFS compared with patients who had a node negative LND or no LND (p<0.0001). As a continuous variable, an increase in the ratio of positive nodes to nodes dissected was associated with a decreased OS, DSS, and RFS (p=0.0021, 0.0001, and 0.0054, respectively). A ratio of positive nodes to nodes dissected ≥20% had a per annum hazard ratio of 2.3 (95% CI 1.2 – 4.4) for OS, 2.6 (95% CI = 1.3 – 4.9) for DSS, and 1.8 (95% CI = 1.1 – 3.1) for RFS compared with a ratio <20%. The number of positive nodes and the number of nodes resected were not associated with survival in all survival categories (p>0.05).

Conclusions: In patients undergoing nephroureterectomy with LND for UC, the ratio of UC positive nodes to nodes dissected is a predictor of OS, DSS, and RFS. Patients who undergo LND and have node positive disease have a shorter OS, DSS, and RFS than patients with node negative disease and patients not undergoing LND.

MP-05.05

Renal Function Following Laparoscopic Radical vs Partial Nephrectomy: A Single Institution Experience

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Introduction and Objective: Nephron-sparing surgery (NSS) for renal cell carcinoma reduces the risk of chronic renal failure and has become the standard of care for small renal masses. There is data that suggests small renal masses are being treated too often with radical nephrectomy. Our objective was to determine the rates of laparoscopic radical nephrectomy (LRN) and laparoscopic partial nephrectomy (LPN) at our institution over time, and to compare renal function in these patients, with the theory that NSS would be better for renal outcomes.

Methods: Data, including renal function and perioperative complications were collected. Serum creatinine was repeated at 3 to 6 months following surgery. Statistics were carried out using paired t-tests with a Bonferroni correction with significance set at p<0.05. Complications, changes in hemoglobin and tumor characteristics were recorded. We also evaluated the number of LRNs versus LPNs performed each year. Complications were recorded according to the Clavien Classification.

Results: From 2003 to 2010, the percentage of cases treated with LRN declined (86% to 52%), while the number of LPN increased (14% to 48%), of cases performed at our institution. We had follow-up data for 56 LPN and 61 LRN patients. The mean difference between serum creatinine after LPN was 6.54 umol/L (CI 95% 5.97-19.05, p>0.05, ns) and after LRN was 35.00 umol/L (CI 95% 23.01-46.99, p<0.001) (Table 1). Blood loss was significantly higher in the LPN group, however no patient in either group required blood transfusion. Other complication rates were similar between groups. There were no cancer recurrences.

Conclusion: LPN preserves renal function better than LRN with the same cancer control. LPN is associated with a slightly higher blood loss and longer OR time, but no transfusions were required. Our centre is now performing LPN more commonly rather than LRN, which is in keeping with the current standard of care. Longer follow-up is necessary to determine if these changes in serum creatinine will result in differences in renal failure and renal replacement therapy in the future.

Table 1. MP-05.05

Parameter	Partial Nx	Radical Nx	Difference (95% CI)	t test
Number of subjects	56 (37M, 19F)	61 (30M, 31F)	N/A	N/A
Age μ (SD) (years)	57.54* (10.71)	61.73 (10.13)	4.19 (0.2123 to 8.178)	p=0.0392
BMI μ (SD) (kg/m2)	27.60 (5.52)	29.73 (6.99)	2.13 (-0.2522 to 4.507)	p=0.0792
ASA μ (SD) (on scale: 1-4)	2.07 (0.58)	2.29 (0.69)	0.22 (-0.0390 to 0.4687)	p=0.0963
Tumor size μ (SD) (cm)	2.44* (1.15)	5.39 (2.49)	2.95 (2.211 to 3.687)	p < 0.0001
Difference in Creatinine (Cr) (umol/L)	6.54	35.00*	LPN: 5.97 to 19.05, p>0.05	p < 0.0001
Mean Cr pre OR versus Mean Cr post OR	90.98 - 97.52	90.36 - 125.36	LRN: 23.01 to 46.99, p<0.001	paired t test
Total OR time × ± SD (minutes)	199.57* ± 58.57	166.79 ± 54.93	32.78 (10.44 to 55.12)	p = 0.004
Estimated Blood Loss × ± SD (cc)	364.44* ± 578.66	105.60 ± 82.17	258.84 (94.623 to 423.07)	p = 0.002

MP-05.06

Examination of Kidney Cancer Patients' Attitudes and Beliefs on Tobacco Use

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Introduction and Objective: Malignant kidney tumours account for 2.6% of all newly diagnosed adult cancers, with majority being Renal Cell Carcinoma (RCC). Recent consensus data have demonstrated that smoking is an independent risk factor for the development of RCC. We set out to determine the prevalence of tobacco use among patients with RCC, as well as patients' knowledge of this association.

Methods: A cross-sectional survey was distributed to 138 patients who visited the Urology clinic at the Princess Margaret Hospital, Toronto, Ontario. Eligible patients included those who spoke English and were diagnosed with a small renal mass (SRM) or histologically proven RCC. Patients' cancer risk was assessed using a modified 2009 Centre for Disease Control Behavioural Risk Factor Surveillance System. Active smokers and ex-smokers were also asked about history of tobacco use, difficulties encountered during quitting and quitting methods used. Descriptive statistics, Chi-square and ANOVA were used where appropriate.

Results: The mean age of our patients was 63.4 years (26-91), with 57.2% being females. In this study, 54.3% are lifetime non-smokers, 37.7% are ex-smokers and 8.0% are active smokers. A small proportion of our patients (29.0%) believe that smoking is associated with the development of RCC. Gender, age, smoking history, ethnicity, education, income and cancer history are not predictive of awareness of this association. Active smokers have longer smoking history (p=0.03) and increased difficulty managing stress (p=0.04) compared to ex-smokers. Furthermore, a greater proportion of active smokers have tried nicotine replacement therapy (p=0.003) and prescription medications (p<0.001) to help them quit than ex-smokers.

Conclusion: Our study demonstrates that a significant proportion (45.7%) of kidney cancer patients have a smoking history, yet only 8.0% are active smokers. There is poor understanding of the association between smoking and RCC in the kidney cancer population. While active smokers are a minority group, an effort should be directed towards addressing smoking cessation strategies.

MP-05.07

The Impact of Different Techniques for Management of the Distal Ureter in Laparoscopic Nephroureterectomy (NU) on the Rate of Bladder Tumor Recurrence and Distant Metastasis

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Introduction and Objectives: The gold standard treatment for upper tract transitional carcinoma is radical NU, but management of the distal ureter is not standardized. We compared oncologic outcomes (mainly bladder tumor recurrence and distal metastasis) after endoscopic ureteral detachment – as the main technique used at our institution- and other techniques including extravesical and open intravesical versus extravesical approach only.

Methods: A total of 93 patients underwent NU for upper urinary tract transitional carcinoma from 2000 to 2009. Ninety patients had laparoscopic NU and only 3 patients underwent open NU. Of these patients 49 (52.6%) underwent endoscopic ureteral detachment and 22 underwent extravesical and open intravesical excision whereas 22 underwent extravesical excision only. Demographic, perioperative and oncological outcome data were collected in all cases. Statistical analysis were performed using the Student t test, chi-square and log rank tests.

Results: There were 29 (out of 49) bladder recurrences in the endoscopic detachment group, of which 5 were muscle invasive. There were 22 (out of 44) bladder recurrences in the open technique groups with only one muscle invasive. There was no significant difference between the 3 groups in term of bladder recurrence (p=0.427). Ten patients developed metastasis in the endoscopic detachment group, 7 and 2 in the extravesical and extravesical and open intravesical group respectively. Also there was no significant difference between the 3 groups in term of metastasis (p=0.6).

Conclusions: Endoscopic ureteral detachment is associated with equivalent oncological outcomes compared with open bladder cuff excision, with a trend towards higher recurrences in the endoscopic group.

MP-05.08

Incidence of Intraluminal Thrombus at Post-Chemotherapy Retroperitoneal Lymph Node Dissection

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Introduction and Objective: We determined the incidence of intraluminal thrombi involving major vasculature in patients with metastatic testis cancer at time of post-chemotherapy retroperitoneal lymph node dissection (PC RPLND).

Methods: The Indiana University testicular cancer database was queried from January 1990 to June 2010, identifying 1704 patients undergoing PC RPLND. Two-hundred and forty patients required some form of vascular resection or reconstruction. Of these, 89 patients had 98 intraluminal thrombi involving major vasculature.

Results: Location of the 98 thrombi included IVC in 72, Aorta in 1, Renal vein in 20. Management of the 72 caval thrombi included cavectomy in 36, partial cavectomy in 9 and thrombectomy in 27. Of the 20 renal vein thrombi, management included nephrectomy in 18 and thrombectomy in 2. The single aortic thrombus was managed with aortic resection and replacement. Pathology revealed bland thrombi in 31, necrosis in 23, teratoma in 28, active germ cell cancer in 12 and sarcoma in 4. Additional procedures at time of PC RPLND included nephrectomy in 32, bowel resection in 7, liver resection in 6, thoracotomy in 6, and vertebral resection in 3. 17 major complications occurred (Clavien Grade III or worse) including 2 deaths. Average EBL was 1165 mL (69 patients had EBL recorded), and average hospital stay was 9.3 days.

Conclusions: The incidence of intraluminal thrombi at PC RPLND is 5.8%, and significant pathology was observed in 61%. Surgeons undertaking PC RPLND should be well-versed in vascular techniques.

MP-05.09

Penile Carcinoma: Lessons Learned from Vulvar Carcinoma

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Introduction and Objectives: Penile carcinoma (PC) is rare in the developed world and treatment guidelines are often based on marginal clinical data. Prospective controlled studies are virtually absent and meta-analyses are rare. Vulvar carcinoma (VC), on the other hand, has many parallels to PC, and the level of evidence for diagnosis and treatment is more robust. The objective of this study was to assess the body of literature on VC to identify potential improvements in the care of patients with PC.

Methods: A literature review was performed on VC and direct comparisons were made to a similar review of the literature on PC.

Results: Several aspects of VC management are clearly established and deserve closer evaluation in PC. For example, human papillomavirus (HPV) is identified in a high percentage of patients with vulvar carcinoma but is understudied in penile carcinoma. This is of potential clinical value especially with the development of HPV vaccines for prevention. Clinical staging in VC is dependent on tumor size and the depth of invasion as measured in millimeter, as opposed to the invasion of underlying structures in PC. Management of the inguinal nodes is more refined for VC, where lymphatic mapping has been conducted and the sentinel node biopsy has proven to be highly effective in multicenter trials. The separation of superficial and deep inguinal nodes in PC is put into question by the 5% risk of finding positive deep inguinal lymph nodes when superficial lymph nodes are negative in VC. Finally, the efficacy of adjuvant radiation and chemotherapy has been tested in controlled trials or reported in meta-analyses for VC, which are both lacking for PC. Radiation after inguinal node dissection, for example, has been shown to enhance survival in patients with defined risk factors. Neoadjuvant chemoradiation is recommended before surgery in advanced VC.

Conclusions: Evidence derived from studies on VC can be extrapolated to PC to help guide clinical trials and future research directions in an effort to enhance the management of these patients.

MP-05.10

Influence of High Dose Low Molecular Weight Heparin (LMWH) on Blood Transfusion and Lymphocele Rate in Open Radical Prostatectomy

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Introduction and Objective: Perioperative bridging with high dosage of LMWH in open radical prostatectomy (ORP) is recommended in patients who require anticoagulant or antiplatelet therapy and predisposes to bleeding complications requiring blood transfusion (BT) and to pelvic lymphoceles (PL). Nothing is known about the impact of high-dose LMWH on BT and PL rates in ORP. We examined these rates in patients receiving high- dose LMWH for cardiovascular reasons using a propensity score matched analysis.

Material and Methods: Between 2005 and 2008, 112 ORP patients receiving high-dose LMWH (80 mg Enoxaparin/day) were matched with 336 ORP patients receiving prophylactic LMWH (40mg Enoxaparin/day). All ORPs were performed by two high-volume surgeons. The 30 day BT and PL rates were retrospectively assessed. Univariable and multivariable logistic regression analyses focused on prediction of BT and PL. Tested predictors comprised of LMWH dosage, age, body mass index, lymph node dissection (LND) status, prostate specific antigen (PSA), and pathological stage.

Results: Mean estimated blood loss was 632 and 664 mL in patients receiving high-dose and prophylactic LMWH, respectively (p=0.6). The transfusion rates in patients receiving high-dose LMWH vs those receiving regular dosage were 13.4 vs 6.3%, respectively (p=0.02). The rates of PL in patients receiving high-dose LWMH vs those receiving regular dosage were 5.4 and 8.6%, respectively (p=0.3). In patients undergoing LND vs those LND was omitted, PL occurred in 13.0 and 1.5%, respectively (p<0.001). After adjusting for all covariates, patients receiving high-dose LMWH were 2.3-fold more likely to be transfused than patients with regular LMWH regimen (p=0.02). In multivariable analysis for prediction of PL, only LND achieved independent predictor status (odds ratio [OR]: 8.1, p=0.001). High-dose LMWH and all other covariates were unrelated to PL formation.

Conclusions: Patients with perioperative need for high-dose LMWH in ORP are more likely to receive a blood transfusion, whereas PL formation seems to be unaffected. This finding has important implications for informed consent.

MP-05.11

Open Radical Prostatectomy Performed by Low Volume Surgeons Predisposes to Higher Rates of Venous Thrombosis and Pulmonary Embolism

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Introduction: Venous thrombosis (VT) and pulmonary embolism (PE) represent a highly unfavourable outcome after open radical prostatectomy (ORP) and may lead to higher mortality. The latest and most contemporary report (n=4592) estimated the rate of VT and PE at 1.4 and 0.9% respectively. We examined the most contemporary VT and PE rates and temporal trends in a large population-based cohort.

Material and Methods: Between 1999 and 2008, 34653 ORPs were performed in the state of Florida. Rates and trends of VT and PE were assessed. Univariable and multivariable logistic regression analyses focused on prediction of VT and PE. Predictors included age, race, surgical volume tertiles (SV), and baseline Charlson Comorbidity Index (CCI).

Results: The overall VT and PE rate was 0.2% respectively. The rate of VT and PE remained stable over the study period (0.3-0.2%, p=0.3 and 0.1-0.1%, p=0.5). VT was indirectly related to SV: VT rate was 0.3% at ORP performed within the low SV tertile vs 0.1% in respectively the intermediate and high SV tertile (p<0.001). In 21.3% of patients suffering from

VT also a PE occurred (p<0.001). PE was significantly higher in patients operated within the low and intermediate SV tertile vs those operated in the high SV tertile (0.2 vs 0.2 vs 0.1%, p=0.02). Mortality rate was 0.07% in patients not suffering from PE and 11.3% in patients with PE (p<0.001). After adjusting for all covariates, patients operated by low SV surgeons were at 3.7 higher risk of DT than patients operated by high SV surgeons (p=0.001). In multivariable analysis for prediction of PE, patients operated within the low SV tertile were 2.6-fold more likely to suffer from PE vs those operated in the intermediate and high SV tertile (p=0.02). Surprisingly, age and CCI failed to reach statistical significance in univariable and multivariable analyses for both end points.
Conclusions: VT and PE represent an important detrimental outcome after ORP. PE increases the risk of mortality substantially. Patients operated by low SV surgeons are at higher risk of VT and PE than these of high SV surgeons. These data have important practice implications.

MP-05.12
Assessing Morbidity and Readmission Following Radical Prostatectomy: A Tertiary, Non-Teaching Urology Center's Experience

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Objective: Insight into morbidity following radical prostatectomy may lend to improved future patient care. The objective of the current study was to determine the morbidity following radical prostatectomy in a tertiary, non-teaching urological center.
Methods: Patients who underwent a radical prostatectomy (RP) in 2008 were retrospectively evaluated in this study. Post-operative morbidity for the entire cohort was assessed using the Modified Clavien Scale (MCS). Those patients readmitted to hospital or who visited an urban or rural emergency department (ED) within 90 days of surgery were further evaluated to determine reason for readmission.
Results: At our centre, 321 patients underwent RP in 2008 by 11 surgeons. 274 cases (85.4%) were done with an open technique, and 47 cases (14.6%) by laparoscopic technique. Seventy-seven patients overall (24.0%) visited an ED within 90 days, and 14 of these were readmitted to hospital, with an additional patient readmitted directly (total 15 readmissions, 4.7% overall). No patients died within the 90 day postoperative period. Results are detailed in Table 1. Of the 92 ED visits by 77 unique patients, 30 (32.6%) were considered true surgical complications, 33 (35.9%) were surgical concerns not deemed complications, 34 (37.0%) were for routine postoperative care (eg. catheter or staple removal), and 15 (16.3%) were for unrelated medical concerns.
Conclusion: This study uniquely reflects practice in a tertiary non-teaching centre. A significant number of patients presented back to hospital within 90 days following radical prostatectomy. Most of these patients (80.8%) were managed entirely through an outpatient ED, and many of these visits were for routine postoperative care. This points to a need for enhanced postoperative support of patients to reduce costly and often unnecessary visits to acute care EDs.

MP-05.13
Robotic Assisted Radical Prostatectomy in a System of "Universal"Healthcare with Limited Access to High–Tech Resources

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Introduction and Objective: A primary goal of Radical Prostatectomy (RP) is to minimize the positive surgical margin (PSM) rate. Robotic Assisted Radical Prostatectomy (RALP) has the theoretical advantages of enhanced ability to identify surgical dissection planes to improved surgical outcome but is associated with a learning curve The objective is to review the PSM rate, and intra and post–operative complications (Clavien grading), correlating with possible risk factors in a low–density small RALP series by a high volume open RP surgeon working in the Canadian Healthcare System.
Methods: The data on the first 56 RALP cases from April 2004 to Dec. 2009 by one surgeon (JC), who contemporaneously performed 730 RP, were analysed. PSM was analyzed and correlated with clinical variables. Mann–Whitney U test was used (p<0.05). Univariable and multivariable analyses were performed.
Results: 3 cases were open converted (2 failure to progress, 1 hypercarbia). PSM was found in 19 (34%). At univariable analysis, no association was observed between PSM and age, BMI, PSA, number positive cores, % positive cores, Gleason Biopsy and clinical stage. Pathological Gleason (p=0.012), pathological stage (p= 0.003) and percentage tumor in surgical specimen (p≤0.001) were associated with increased risk of PSM but not prostate weight, operation time and blood loss. At multivariable analysis, the percentage of tumor in the surgical specimen (p<0.001) was the only independent predictive factor for PSM.The location of PSM was Apical 9 (48%), PLR 4 (21%), PLL 4 (21%) and bladder neck 1(5%). Mean follow–up was 23 months. In PSM, 12 (63%) showed an undetectable PSA (≤0.01 ng/mL) at 3 months after RALP. Using Clavien grading, 9 surgical complications were seen in 9 (16%) patients: 6 (Grade 1–2) and 3 (Grade 3–4). 4 patients with PSM had complications, 2 (Grade1–2) and 2 (Grade 3–4). At multivariable analyses, BMI (p=0.008) was the only predictive factor for occurrence of complications.
Conclusion: The pathological stage and tumor (%) in the surgical specimen were independent predictive factor for PMS. Applying the Clavien grading, most of the complications were minor. The Canadian Universal Healthcare system with limited access to high–tech resources may not be ideal for introducing an expensive new surgical technique, especially for an ubiquitous procedure such as RP. However, results of our low density series or sporadic cases were not inferior to reported initial experience series of RALP in the literature.

Table 1. All patients receiving RP in 2008 stratified by MCS classification. MP-05.12

Patient Group	n	Modified Clavien Scale (MCS) 0	1	2	3	4	5
No readmission or ED visit	243 (75.7%)	132	91	17	2	1	0
ED visit only	63 (19.6%)	5	49	4	4	1	0
Inpatient readmission +/- ED visit	15 (4.7%)	0	3	2	8	2	0
TOTAL	321	137 (42.7%)	143 (44.5%)	23 (7.2%)	14 (4.4%)	4 (1.2%)	0

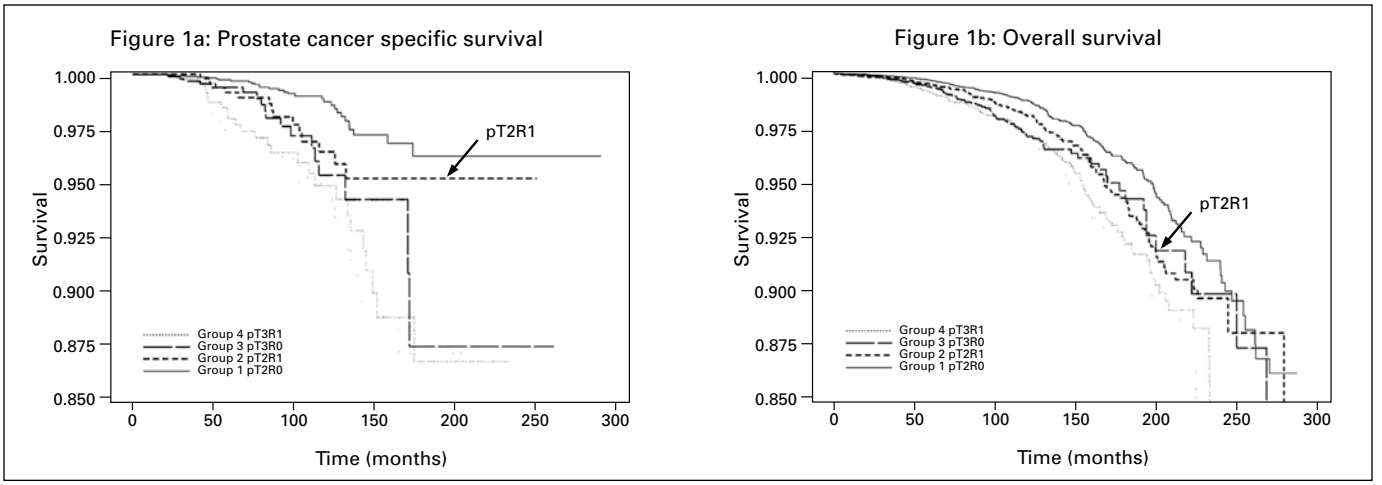

Fig. 1. MP-05.14

MP-05.14

Cancer Specific and Overall Survival Following Capsular Incision into Tumor During Radical Prostatectomy

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Introduction and Objective: Capsular incision (CapI) into tumor during radical prostatectomy (RP) has been shown to have an adverse impact on biochemical recurrence with outcomes similar to a pT3a tumor with positive surgical margins (PSM). No published studies have reported the cancer specific survival (CSS) and overall survival (OS) of these patients.

Methods: From 1985 - 2010, 9739 patients with prostate cancer were treated with radical prostatectomy at the Memorial Sloan-Kettering Cancer Center (New York, NY) and the Ottawa Hospital (Ottawa, ON, Canada). 8860 cases with complete data were analyzed.

Four groups were generated based on margin status and pathologic stage. Group 1 (CapI group): PSM and no extraprostatic extension (EPE); group 2: negative surgical margins (NSM) no EPE; group 3: NSM with EPE; group 4: PSM with EPE. Estimates of CSS and OS were generated with the Kaplan-Meier method. Cox proportional hazards regression was used to estimate the hazard ratio (HR) for death from prostate cancer and death from any cause while controlling for preoperative PSA, date of surgery, pathologic GS, seminal vesical invasion (SVI), and lymph node involvement (LVI).

Results: Median follow-up was 45.6 mo (IQR 17.1, 93.1). For patients with CapI, the 10- and 15-yr CSS was 96.4% (CI 93.6, 98.0) and 95.2% (CI 91.7, 97.3), respectively; the 10- and 15-yr OS was 87.4% (CI 83.6, 90.4) and 62.1% (CI 54.1, 69.0), respectively. Patients with CapI (group 1) had significantly inferior CSS and OS compared to patients in group 2 and 4 ($p \leq 0.05$) but not compared to group 3 ($p \leq$NS). On multivariable analysis, CSS was independently associated with date of surgery, SVI, LNI, and GS $^{3}8$ ($p \leq 0.05$). OS was independently associated with ECE, PSM, age, SVI, LNI, and GS $^{3}8$ ($p \leq 0.05$) (Figure 1).

Conclusions: Patients with capsular incision have slightly inferior prostate cancer specific and overall survival compared to patients with fully resected, organ-confined disease. Despite the excellent long-term cancer control seen in these patients, this study highlights that capsular incision into otherwise organ confined tumor is associated with prostate cancer death and overall death and emphasizes the importance of meticulous surgical technique.

MP-05.15

Androgen Deprivation Therapy and Cardiovascular Risk

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Androgen deprivation therapy (ADT) is commonly used for prostate cancer as primary, neoadjuvant/adjuvant or salvage therapy. The association between ADT use and cardiovascular mortality remains controversial. The study objective was to assess outcomes in a large national registry to elucidate the impact of treatment selection on mortality.

7, 254 men in the CaPSURE registry diagnosed between 1998 and 2005 were analyzed. Treatment was categorized as local alone, primary ADT, local treatment with ADT (neoadjuvant/adjuvant or salvage) and watchful waiting/ active surveillance (WW/AS). A competing hazards survival analysis was performed for prostate cancer-specific mortality (CSM), cardiovascular mortality (CVM) and all cause mortality. The model was adjusted for age, cardiovascular disease, other comorbidities, prostate cancer risk and duration of ADT. A propensity score adjusted and matched analysis, matched on likelihood to receive ADT, was undertaken to adjust further for imbalances in covariates among men receiving various treatments.

5175 (71.3%) men received local treatment alone, 485 (6.7%) men received local treatment plus ADT, 1088 (15%) men received primary ADT and 506 (7.0%) men received watchful WW/AS. Patients treated with ADT and patients treated with WW/AS had higher CSM compared to those treated with local therapy alone (ADT only: HR 6.32 95%CI 3.2-12.4; local +ADT: HR 6.45 95%CI 3.4-12.3; WW/AS: HR 5.27 95%CI 2.15-12.8). Patients treated with primary ADT had an almost 2 fold greater risk of CVM (HR 1.86 95%CI 1.23-2.8) compared to those treated with local therapy alone, however, patients treated with WW/AS had a greater than two fold risk of CVM (HR 2.3 95%CI 1.43-3.68). A propensity-matching algorithm in a subset of 1391 patients was unable to find a difference in CSM or CVM between those who did and did not receive ADT.

Although men receiving ADT had higher CVM then those who underwent local treatment, so did men who underwent WW/AS. This suggests potential unmeasured variables that affect treatment selection might be confounding the relationship between ADT use and cardiovascular risk.

MP-05.16

Sustained Aerobic Exercise Alone Does Not Counteract the Tumor-Promoting Effects of a Westernized Diet on Prostate Cancer Progression *in vivo*

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Introduction: The influence of lifestyle behaviors on prostate cancer (PCa) is well established. Our lab has previously reported that diets high in both fat and carbohydrates – the "Westernized" diet – promote PCa tumor growth *in vivo*. Numerous studies have also found an inverse relationship between exercise and PCa progression. However, the exact relationships between diet, exercise and PCa, as well as their underlying mechanisms, are unclear. Herein we aim to investigate the effect of sustained aerobic exercise on PCa tumor growth in animals fed a "Westernized" diet or a normal diet.

Methods: Athymic nude mice (n=46) were inoculated subcutaneously with LNCaP cells. Mice were fed *ad libitum* with either a high-fat/high-carbohydrate diet (HFHC) or a standard normal diet (Normal), and randomized into exercising (Ex) and non-exercising groups (No-Ex). Exercise was undertaken 3 days per week (3 x 15 mins; 2-min breaks between cycles; 2.0-7.0 m/min) for 8 weeks, using a forced exercise wheel. Body weights, tumor volumes, and food consumption were recorded tri-weekly. Comparisons between groups over time were performed using RANOVA Type 3 Tests of Fixed Effects.

Results: There were no significant differences in body weight between the groups over time. The HFHC-Ex group (n=10) had the highest rate of tumor growth compared to all other groups ($p \leq 0.0007$). No significant differences were observed between the rate of tumor growth of the HFHC-No Ex group (n=11) and the Normal-No Ex group (n=12) or between the Normal-No Ex group and the Normal-Ex group (n=10). However, the rate of tumor growth of the Normal-Ex group was reduced compared to the HFHC-No Ex group ($p \leq 0.0008$). Food consumption analysis revealed significant differences ($p \leq 0.012$) in energy consumption (kcal) between each of the groups over time. Mice in HFHC-Ex group consumed the most energy compared to all other groups followed by HFHC-No Ex>Normal-Ex>Normal-No Ex groups.

Conclusions: The results indicate that exercise stimulated an increase in food consumption. In mice fed a tumor-promoting "Westernized diet," this enhanced the rate of tumor growth. However, in mice placed on a normal diet, this increase in energy consumption did not correspond with increased tumor growth over time, emphasizing the importance of both exercise and healthy diet in the progression of PCa. Further studies to examine the relationship between diet and exercise with respect to PCa progression are currently underway.

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MP-05.17

Oral Contraceptive Use is Associated with Prostate Cancer: An Ecologic Study

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Introduction: Recently there have been several studies suggesting that estrogen exposure may increase the risk of prostate cancer (PCa). In this report we examine associations between PCa incidence and mortality and population-based use of oral contraceptives (OC's). We hypothesized that OC`s by-products may cause an environmental contamination leading to an increased low level estrogen exposure and therefore higher PCa incidence and mortality.

Methods: the hypothesis was studied in an ecologic study. We used data from the "international agency for research on cancer" (IACR) to retrieve age-standardized rates of prostate cancer in 2007 and the "United Nations 2007 use of contraceptive report" to retrieve data on contraceptive use. We subsequently used a Pearson correlation to associate the percentage of women using OC`s, intrauterine devices, condoms or vaginal barriers to the age standardized prostate cancer incidence and mortality. We performed these analyses by individual nation and by continent worldwide.

Results: OC`s use was significantly associated with prostate cancer incidence and mortality in the individual nation world wide ($r=0.63$ and $r=0.51$, respectively $p<0.05$ for all). PCa incidence was also associated with OC`s use in Europe ($r=0.545$ $p<0.05$) and by continent ($r= 0.522$ $p<0.05$). All other forms of contraceptives (i.e. intra-uterine devices, condoms or vaginal barriers) were not correlated with prostate cancer incidence or mortality.

Conclusion: In this hypothesis generating ecologic study we have demonstrated a significant association between OC`s and PCa. We hypothesize that oral contraceptive effect may be mediated through environmental estrogen levels; this novel concept is worth further investigation.