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POD-03.01

Stage-Based Approach to Surveillance Following Radical Cystectomy in Bladder Cancer Patients

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Introduction and Objective: Bladder cancer often recurs after surgical intervention and there is debate with regards to the optimal follow-up strategies. We sought to review our data on the recurrence patterns following radical cystectomy with the aim to establish appropriate surveillance protocols for patients with localized and locally advanced bladder cancer.

Methods: We collected and pooled a database of 2,287 patients who have undergone radical cystectomy for carcinoma of the bladder between 1993 and 2008 in 8 different academic centres across Canada. Of these, 1,890 patients had complete recurrence information and form the basis on this report.

Results: Total of 825 patients (43.6%) developed recurrence. According to location, 218 were distant (48.6%) with the remaining divided into: 113 pelvic (25.2%), 65 retroperitoneal (14.5%) and 53 to multiple sites (11.8%) such as pelvic and retroperitoneal or pelvic and distant. Most common distant sites were lungs (42%), bone (35.5%) and liver (27%). Median time to recurrence for entire population was 10.1 months (range 0 to 192.4) with 90% and 97% of all recurrences happening by 2 and 5 years post-cystectomy, respectively. When stratified according to stage, tumours with positive nodes (pTxN+) were more likely to recur than extravesical node-negative tumours (\geq pT3N0) and organ-confined node-negative tumours (\leq pT2N0) (57% vs. 40.1% vs. 21.5% respectively, $p < 0.0001$). Similarly, pTxN+ tumours had a shorter median time to recurrence (9.1 months, range 0 to 71.6 months) compared to \geq pT3N0 tumours (9.5 months, range 0 to 69.5 months) and \leq pT2N0 tumours (13.7 months, range 0 to 192.4 months, $p < 0.0001$).

Conclusions: Differences in recurrence patterns between the different subgroups after radical cystectomy suggest the need for varying follow-up protocols for patients in each. Chest radiographies are recommended once yearly for \leq pT2N0 tumours; every 6 months for the first 2 years then annually thereafter for \geq pT3N0 tumours; and every 3 months for the first year, then every 6 months thereafter for pTxN+ tumours. Triphasic CT scans of abdomen and pelvis are recommended on a yearly basis for \leq pT2N0 tumours; every 6 months for the first 2 years then annually thereafter for \geq pT3N0 tumours; and at 3 and 6 months postoperatively then every 6 months thereafter for 2 years then annually for pTxN+ tumours.

POD-03.02

Radical Cystectomy for Clinically Muscle Invasive Bladder Cancer: Does Prior Superficial Disease Affect Clinical Outcomes?

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Introduction and Objective: The objective of this study was to compare clinical and pathologic outcomes of radical cystectomy for muscle-invasive bladder cancer in relation to prior history of superficial transitional cell carcinoma.

Materials and Methods: Retrospective data collected from 2287 patients managed by radical cystectomy for transitional cell carcinoma of the bladder from the Canadian Bladder Cancer Network were analyzed. Patients with clinical stage T2 or more were included and divided into two groups: (1) patients with prior history of superficial transitional cell carcinoma of the bladder, and (2) patients with clinical muscle-invasive cancer de novo. Variables analyzed included patient age, gender, pathologic stage, adjuvant chemotherapy and survival.

Results: Both groups were nearly equal in the mean age and gender distribution, with mean age of 67.2 and 66.7 years, and 79.7% and 79.5% of patients being men in groups 1 and 2, respectively. The presence of preoperative hydronephrosis was 20.8% and 32.6% ($p = 0.0007$) for groups 1 and 2, respectively. The incidence of higher pathological stage (T3 or T4) was 36.3% and 58% ($p < 0.0001$), positive lymph nodes was 20.1% and 28.8% ($p = 0.002$) and lymphovascular invasion was 31.7% and 46.2% ($p = 0.0001$) for groups 1 and 2, respectively. The incidence of adjuvant chemotherapeutic treatment was 15.5% and 23.3% ($p = 0.002$) for groups 1 and 2, respectively. The overall survival (OS) and the disease specific survival (DSS) at 5 years was 62% and 70% for group 1 and 51% and 60% for group 2 respectively. At 10 years, 46% and 66% for group 1 and 35% and 49% for group 2, respectively (p [log-rank]= 0.0002 and 0.0001, respectively). In multivariate analysis, studying factors affecting OS, DSS and tumour recurrence, the presence of previous superficial bladder tumour was found to be associated with a significant reduced risk of mortality and tumour recurrence (Hazard ratio of 0.7 for all risks).

Conclusion: Our retrospective study suggests that patients with superficial transitional cell carcinoma of the bladder that progress to muscle-invasion and require radical cystectomy appear to have better pathologic and clinical outcome than patients presenting with clinical muscle-invasive disease de novo.

POD-03.03

Is Post Chemotherapy Retroperitoneal Lymphadenectomy Necessary after Complete Response

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Introduction and Objectives: Post chemotherapy retroperitoneal lymph node dissection (pcRPLND) for residual retroperitoneal disease is the standard of care for non-seminomatous germ cell tumours. The management of men whose retroperitoneal disease completely responds to chemotherapy is more controversial and some centres recommend RPLND to remove microscopic disease that may progress to late relapse. We have retrospectively evaluated our experience with the management of patients who presented with retroperitoneal (RP) metastases and who underwent initial

chemotherapy to determine if pcRPLND was indicated in those who achieved a complete response (CR) in the RP.

Methods: The charts of the 305 consecutive patients from the Princess Margaret Hospital Testis Tumor Clinic who presented to the clinic with RP adenopathy and who received initial chemotherapy were reviewed.

Results: Of these 305 men, 131 (42.9%) achieved a CR in the RP as assessed by imaging (defined as residual adenopathy <1 cm in maximal axial dimension) and were observed. Nine (9 or 6.8%) later relapsed and all were salvaged (6 RPLND only, 2 salvage chemotherapy+RPLND, 1 RPLND+chemotherapy). Full bilateral pcRPLND with postganglionic sympathetic nerve preservation where possible was done in 144 men with residual RP disease. Thirty did not achieve an initial response of whom 50% died of disease.

Conclusions: Our experience is unique in that we report the outcomes of all men who present with RP adenopathy managed by initial chemotherapy and not just those who either undergo RPLND or are managed expectantly. In our total experience, 42.9% achieved a CR in the RP. Without further therapy (pcRPLND), only 6.8% of these patients relapsed and all were salvaged. Our experience strongly supports continuing surveillance as opposed to surgery in this population.

POD-03.04

Princess Margaret Hospital Experience with Preoperative Sorafenib and Cytoreductive Nephrectomy in Metastatic Renal Cell Carcinoma

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Introduction and Objective: The role of cytoreductive nephrectomy (CN) for metastatic renal cell carcinoma (mRCC) in the targeted therapy era is unknown and is being addressed in randomized trials. Experience with preoperative treatment is increasing and the indication and timing of CN is not clear. We report our preliminary experience with sorafenib before CN.

Methods: Patients (pts) with mRCC and who were deemed suitable for CN at diagnosis were eligible. Patients had a renal biopsy prior to treatment. Oral sorafenib (400 mg PO BID), with dose reduction as needed, was administered for 12 wks preoperatively and restarted post-CN until disease progression, or stopped at investigator discretion. The primary aim was to determine the relationship between pathological response data and time to progression. Feasibility, tolerability and response to preoperative sorafenib are presented.

Results: Thirteen men with biopsy-proven clear cell RCC (mean age 55yr, range 40-70) have been enrolled to date. Mean age was 55 years (range 40-70). No unusual toxicities were observed on sorafenib. Pre-op radiological response data were available for 12/13 patients. Ten patients (77%) had stable disease by RECIST after preoperative sorafenib, 6 of whom had a decrease in disease burden (mean decrease 14%, range 5-25%). One patient had partial response (PR) and 1 had progressive disease. The mean response in primary tumour was an 11.6% decrease (range +36% to -54%). Of the 10 patients who underwent CN, there was one postoperative death, unrelated to treatment protocol. Increased perinephric fibrosis has been observed at surgery, but no other notable findings or postoperative complications were seen. Three patients did not have surgery: 1 due to marked early progression, 1 because of possible drug-related cardiotoxicity which led to surgical delay, and 1 is awaiting surgery. On pathology review, no morphologic differences were noted in viable tumour before and after sorafenib; 1 patient with clinical PR had near complete pathological response. Five patients continued sorafenib postoperatively due to ongoing benefit.

Conclusion: Preoperative sorafenib in mRCC was well-tolerated, resulted in over 50% of patients having tumour size reductions in both primary and metastatic sites and did not appear to impact feasibility or tolerability to subsequent CN. Complete pathological and biomarker data are awaited.

POD-03.05

Laparoscopic Partial Nephrectomy Versus Renal Cryoablation: A Multicentre Comparison of Intermediate Oncologic Outcomes

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Introduction and Objective: Partial nephrectomy is the gold standard for management of most small renal masses. Cryoablation is a viable alternative with a favourable morbidity profile and good efficacy. We compared intermediate oncologic and functional outcomes following laparoscopic partial nephrectomy (LPN) and renal cryoablation (RC) from a multicentre experience.

Methods: We present a multicentre retrospective review of LPN and RC experience between 09/1998 and 10/2009. LPN was performed via a transperitoneal approach, while RC was performed via percutaneous or transperitoneal laparoscopic approach. Persistent mass enhancement or interval tumour growth was considered a treatment failure following RC. Residual enhancing tumour was evidence of treatment failure following LPN.

Results: Data on 376 (234 LPN, 142 RC) patients were included for study. No significant differences with respect to gender, ethnicity and BMI were noted. Mean follow-up was significantly longer in RC than LPN (36 vs. 20 months, $p < 0.001$). Mean age was 56.2 (LPN) and 66.8 (RC) years ($p < 0.001$); 18% LPN and 28% RC had diabetes mellitus ($p = 0.03$). Mean tumour size was 2.5 (LPN) and 2.5 (RC) cm ($p = 0.34$). Preoperatively, 16.4% LPN and 38% RC had eGFR <60 mL/min/1.73 m² ($p < 0.001$). On univariate analysis, development of de novo eGFR <60 mL/min/1.73 m² occurred in 9.7% LPN and 15.6% RC patients ($p = 0.125$). Tumour persistence/recurrence was noted in 1.7% LPN and 7.8% RC ($p = 0.042$). Disease-free survival (DFS) was 98.6% in LPN and 92.9% in RC ($p = 0.007$). On univariate analysis, DFS was associated with younger age ($p = 0.015$), non-African American race ($p = 0.04$) and LPN ($p = 0.007$). Overall survival was 99% and 97% in LPN and RC cohorts ($p = 0.71$), respectively.

Conclusions: In this multicentre study of LPN and RC with intermediate follow-up, RC had higher primary treatment failure rates than LPN. DFS was significantly higher with LPN. RC did not provide superior renal preservation when compared to LPN. While further follow-up is needed, caution should be exercised in offering cryoablation as a primary treatment modality to younger, healthy patients.

POD-03.06

Is Tumour Location Prognostic in Patients with Upper Tract Urothelial Carcinoma? An International Collaborative Experience

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Introduction and Objective: There remains disagreement as to whether the location of upper urinary tract cancer affects prognosis. We examined the significance of ureteral and renal pelvic upper tract urothelial carcinoma (UC) in a large multi-institutional study.

Methods: We collected and pooled a database of 700 patients with upper tract UC who underwent radical nephroureterectomy. Univariate and multivariate models examined the effect of tumour location on recurrence-

free (RFS) and cancer-specific survival (CSS) rates. Collected variables included age, gender, race, presence of lymphovascular invasion, concomitant carcinoma in situ, pathological stage/nodal status, lymph node dissection and type of surgery (open vs. laparoscopic).

Results: The median follow-up for patients alive was 42 months (IQR: 20-76). With regards to location, 34% of tumours were ureteral, 59% pelvic and 7% were multifocal. Tumour location was significantly associated with lymphovascular invasion ($p = 0.035$), pathological stage ($p = 0.014$), race ($p < 0.001$) and type of surgery ($p = 0.038$). It was, however, not associated with age ($p = 0.206$), gender ($p = 0.858$), grade ($p = 0.511$), lymph node dissection ($p = 0.259$), number of nodes resected

($p = 0.084$), nodal status ($p = 0.422$), concomitant CIS ($p = 0.296$), or follow-up duration ($p = 0.508$). On multivariate analyses adjusting for age, gender, race, surgical type, stage, grade, nodal status, lymphovascular invasion and concomitant CIS, ureteral tumour location when associated with multifocal disease remained an independent predictor of both RFS ($p = 0.004$) and CSS (HR $p = 0.035$).

Conclusions: Contrary to recent data, our results show that ureteral tumour location in association with multifocal disease is an independent prognostic factor for both RFS and CSS.