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Erectile function recovery after robotic-assisted radical prostatectomy (RARP): Long-term exhaustive analysis across all preoperative potency categories

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Introduction et objectifs : To evaluate erectile function recovery following robotic-assisted radical prostatectomy according to preoperative SHIM score stratification.

Matériels et méthodes : We prospectively collected data on 250 consecutive patients who underwent RARP by a single fellowship-trained robotic urologist (AEH) between October 2006 and October 2012. 36 patients have been excluded because of lack of preoperative SHIM score. All patients had a minimum follow up of 2 years. Patients were divided into 4 groups according to their preoperative SHIM score: group 1 with normal potency (SHIM 22-25), group 2 with mild ED (SHIM 17-21), group 3 with mild-moderate ED (SHIM 12-16) and group 4 with moderate-severe ED (SHIM 1-11). Patients were followed at 3-, 6-, 9-, 12-, 18-, and 24-month-intervals and twice yearly thereafter. SHIM questionnaire and EHS score were collected at each visit. Potency was defined as successful penetration during intercourse with or without PDE5-I (EHS score 3-4).

Résultats : After exclusions, 214 patients were evaluated. The number of patients in Group 1, 2, 3 and 4 were 95, 59, 26 and 34, respectively. At 3, 6, 9, 12, 18, 24 months, SHIM scores and potency rates were statistically higher for those with better preoperative SHIM score.

Conclusions : For proper patient counseling and better prediction of erectile function recovery after RARP, it is important to stratify patients according to preoperative SHIM scores.

Late regional complications and hospitalizations in castration-resistant prostate cancer patients in Quebec: Analysis by initial primary treatment

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Introduction et objectifs : Late regional complications in prostate cancer can impact quality of life and require numerous medical interventions. The study objective was to evaluate regional complications and hospitalizations in the late phase of castration-resistant prostate cancer (CRPC) in men who had initial local primary treatment (external-beam radiotherapy [EBRT] or radical prostatectomy [RP]) to those who had none (androgen deprivation therapy [ADT] only).

Matériels et méthodes : The study cohort consists of patients who received medical or surgical castration treatment, became castration resistant and died from CRPC between January 2001 and July 2013 in Quebec. CRPC was defined as patients who had a diagnosis of prostate cancer, received chemotherapy, abiraterone, palliative radiotherapy, bone-targeted therapy or an anti-androgen. Patients initiating anti-androgen therapy within six months of medical or surgical castration were excluded from the cohort. Patients presenting evidence of metastases but without any of the CRPC treatment specified above were also included in the main analysis. A sensitivity analysis was performed excluding these patients. For each patient in the study cohort, medical procedures and hospitalizations due to complications of CRPC were identified from the RAMQ and Med-Echo databases in the 2-year period prior to death. Logistic regression was used to measure the association between initial primary treatment and risk of prostate cancer-related hospitalization, and linear regression was used to evaluate the impact of initial treatment on the length of prostate cancer-related hospitalization, while adjusted for several co-variables.

Résultats : The cohort consisted of 2,732 patients who likely died of prostate cancer in the study period. A number of 535 (19.6%) and 654 (23.9%) patients had received EBRT or RP as initial treatment, respectively. Overall 23.9% received chemotherapy, 2.0% received abiraterone without prior chemotherapy, 9.5% received palliative radiation alone and 43.2% received only anti-androgens. The median survival was 90 months in the EBRT group, 91 months in the RP group and 74 months in the ADT only group. Median age at the time of initial primary treatment was similar in the initial local primary treatment groups (EBRT: 71 and RP: 69), patients without previous local primary treatment initiated ADT at 75. Overall, 39.1% of patients experienced at least one late regional complication, with the ADT only group having the fewest at 33.4%, compared to the EBRT (47.3%) and RP (46%) groups. In the ADT alone group, 21.7% of patients received bone-targeted therapy; whereas in the EBRT group it was 19.8% and in the RP group it was 32.0% (p=0.0017). Nearly all patients had diagnosed metastases in all three groups. Age at initial treatment (OR=0.97, 95%CI: 0.96 to 0.98), use of bone-targeted therapy (OR=4.27, 95%CI: 3.16 to 5.76), and regional complications (OR=1.95, 95%CI: 1.60 to 2.38) were associated with risk of hospitalization, while initial local primary treatment was not. However, absence of initial local primary treatment increased hospitalization duration (3.12 days, 95%CI: 0.01 to 6.16), as did use of bone targeted therapy (6.17 days, 95%CI: 2.74 to 9.60), and regional complications (9.64, 95%CI: 6.72 to 12.56), while rural residency decreased hospitalization duration (4.52 days, 95%CI: 1.00 to 8.03).

Conclusions : Hospitalization in the last 2 years of life due to prostate cancer varies depending on several parameters. Patients who underwent no initial local primary treatment for prostate cancer were likely to be hospitalized for a longer period of time.

Castration-resistant prostate cancer patients in Quebec: Medication use in the last year of life

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Introduction et objectifs : In the last decade, significant advances have been made in the field of prostate cancer, including many innovative drugs for advanced prostate cancer. The current management of metastatic castration-resistant prostate cancer (mCRPC) has become very complex. The study objective was to describe medication use in the last year of life of patients dying of prostate cancer in Quebec.

Matériels et méthodes : The study cohort consists of patients that received medical or surgical castration treatment, became castration resistant, and died between January 2001 and July 2013 in Quebec. CRPC was defined as patients who received chemotherapy, abiraterone, palliative radiotherapy, bone-targeted therapy or an anti-androgen. Patients initiating anti-androgen therapy within six months of medical or surgical castration were excluded from the cohort. For each patient in the study cohort, medication use (CRPC-related and overall) was identified from RAMQ pharmaceutical database by 12-, 6-, 3- and 1- month periods prior to death.

Résultats : The cohort consists of 1,692 patients who died of CRPC in the study period. A number of 767 (45.3%) and 169 (10.0%) patients had

received bone-targeted therapy and abiraterone, respectively. Nearly all patients had received anti-androgen therapy. Of the patients receiving bone-targeted therapy at any time, 54.4%, 73.7%, 80.8% and 89.8% received a prescription in the 1-, 3-, 6- and 12-month period before death. Among the patients receiving abiraterone at any time, the corresponding figures were: 49.1%, 65.7%, 79.9% and 96.5%, respectively. The percentage of patients receiving androgen deprivation therapy (ADT) in the 1-, 3-, 6- and 12-month period before death were: 10.7%, 59.6%, 74.8% and 83.6%, respectively. In addition, 87%, 93.9%, 96% and 98.3% of patients received at least one medication within the 1-, 3-, 6- and 12-month period before death. The median number of prescriptions per month was 7.1 (IQI: 4.6 to 10.1) in the last 12 months of life, 7.8 (IQI: 5.1 to 11.3) in the last 6 months, 8.7 (IQI: 5.1 to 12.8) in the last 3 months, and 1.7 (IQI: 0 to 5.7) in the last month of life, respectively.
Conclusions : In the CRPC group, a large proportion of patients maintained their medications in their last months of life. Persistent ADT, bone-targeted therapies, and abiraterone during the last few months of life are common, associated with significant costs yet debatable benefit.

Poor overall survival in octo- and nonagenarian patients treated with externa, beam radiotherapy for localized prostate cancer

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Introduction et objectifs : External beam radiotherapy (RT) represents a valid treatment modality for octo- and nonagenarian patients with localized prostate cancer (PCa) and a life expectancy that warrants definitive therapy. Four major guidelines recommend that candidates for attempted curative RT should have a long life expectancy. Others state that comorbidities should also be considered. In consequence we decided to study the 10-year rate of overall survival (OS) and cancer-specific mortality (CSM) in a contemporary octo- and nonagenarian population treated with RT alone or in combinations for localized PCa.
Matériels et méthodes : We evaluated 9,294 patients localized PCa treated with RT between 1991 and 2009 in Surveillance Epidemiology and End Results (SEER)-Medicare-linked database. We focused exclusively on patients treated with RT as first treatment alone (n=2946) or combined with androgen deprivation therapy (ADT) (n=3530) or brachytherapy (BT) (n=1363) or both (n=1455) within the first six months from diagnosis. The Kaplan-Meier method was used to estimate the 10-year OS, CSM- and OCM-free survival rates, and multivariable Cox regression analyses focused on the combined effect of age, Charlson Comorbidity Index (CCI) and treatment type after adjusting for additional confounding factors. All statistical analyses were performed using the RStudio statistical package (version 0.98.1091), with a two-sided significance level set at $p<0.05$.
Résultats : The 10-year OS and CSM in the overall population was 35 and 11%, respectively. In patients aged 80-84, the 10-year OS was 37.7 vs. 20.0% in older patients ($p<0.001$). Similarly, the 10-year OS was 39.8% in patients with CCI=0 vs. 33.8% in patients with CCI=1 vs. 26.9% in patients with CCI³2 (all $p<0.001$). The 10-year OS ranged from 32.8%, recorded in patients treated with RT alone, to 46.7%, recorded in patients treated with RT+BT. Advanced age at diagnosis and higher CCI score represented independent predictors of higher overall mortality (all $p<0.001$).
Conclusions : Two thirds of elderly patients treated with RT die at 10 years of follow-up. Conversely, only 11% of patients die of PCa. These observations may suggest the need for more stringent selection criteria for RT.

Impact of pathology review on clinical management of patients with bladder cancer

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Introduction et objectifs : The clinical decision undertaken by urologists for patients with bladder cancer depends heavily on the pathological interpretation provided by the pathologist. We evaluate the role of a pathology review on management implications of patients with bladder cancer.
Matériels et méthodes : 98 pathology specimens from transurethral resections in patients with suspected bladder tumors obtained from outside hospitals were reviewed at our institution by a genitourinary pathologist. A urologist at our institution classified patients into risk groups according to the pathology reports obtained before and after review. A management course was proposed as well according to the main urological guidelines.
Résultats : The original pathology reports included 5 benign cases, 8 Ta, 27 T1, 56 T2 and 2 T4a tumors. On review, the interpathologist agreement by tumor stage was 100% and 98% for benign lesions and T2 tumors respectively, but only 62% for Ta and 63% for T1 tumors. Taking into account all of the pathology variables, including stage, grade, presence of concomitant CIS, LVI, and variant histology, a change in management was implicated in 36 patients (37%) after pathology review. Major management changes occurred in 23 out of 36 patients. Most of these major changes (14/23) involved patients originally staged as T1 (61%). Another observation is that 26% (6/23) of those changes were solely due to incomplete initial pathologic report in the form of missing LVI, concomitant CIS and variant histology and not due to interpathologist discrepancy in interpretation. Overall, the 23 significant management changes were as follows: 13 radical cystectomies were proposed and 2 were avoided secondary to a change in T category. Early cystectomy was proposed in 6 patients deemed at very high risk for progression because CIS, LVI, or variant histology was found in the review pathology. Two other patients had a different treatment plan due to change in histological diagnosis after review.
Conclusions : A complete initial pathological report provides a more accurate risk classification of the patient's disease status. Pathology review plays a primary role and impacts on the management of bladder cancer patients especially those with high-grade disease.

Healthcare services utilization during the last 6 months of life in a cohort of patients who underwent radical cystectomy for bladder cancer in Quebec

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Introduction et objectifs : The management of bladder cancer (BC) imposes a great economic challenge on the healthcare system, with the greatest share of this burden attributed to radical cystectomy (RC) and expenditures related to prolonged patient's follow up. Our aim was to assess the use of healthcare services and its related costs during the last 6 months of life in a cohort of patients who had RC across Quebec.
Matériels et méthodes : We conducted a retrospective study within a cohort of 2988 patients who had RC for BC in Quebec from 2000 to 2009. Data was obtained from the RAMQ (Quebec health insurance medical services database) and ISQ (Quebec vital status database). We included patients who deceased during the study period, and who survived at least 6 months after the first 90 days post-operative period. Medical services and procedure billing codes were used to retrieve the following services dispensed to patients: 1) Inpatient services (surgical and medical procedures, chemotherapy, radiotherapy, and palliative pain management); 2) Imaging services and 3) Outpatient services (medical consultations and visits). Average costs per patient and total costs were calculated in 2014 Canadian dollars.
Résultats : From the 1355 patients who died during the study period, we analysed data of 799 subjects who met inclusion criteria. Males comprised

77.3% of the cohort and 52% of patients were between 60-75 years of age. In their last 6 months of life 17.2% of patients had surgery for major urinary tract complications while 8.4% of patients had surgery for gastrointestinal tract complications, 25% had chemotherapy and 27.6% had radiotherapy. Also, 3.5% of patients had hemodialysis and 4% of patients had palliative procedures for pain management. Imaging procedures were performed in 94.6% of patients with 73.1% of patients having abdominopelvic CT scan done. Among our cohort, urologist outpatient visits were the most frequent (72.3%) followed by internal medicine physician visits (41.3%), medical oncologist visits (37.2%) and radiologist visits (34.8%).
Conclusions : Our study results suggest that during the last 6-months of life of BC patients having undergone radical cystectomy, their healthcare services utilization varies significantly. Understanding the causes behind such variation could be useful in improving the management of these patients as well as the costs associated with death from bladder cancer.

An exceptional learning experience: A week in Burkina Faso treating vesico vaginal fistulas with "Meres du monde en Sante" team

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Introduction et objectifs : International surgical missions offer a unique learning opportunity for Canadian residents and the entire surgical team. It opens the eyes on another surgical world, consisting of frail and malnourished patients, decrepit medical facilities and a lack of basic medical supplies, exhausting weather conditions and extremely challenging cases. Being part of a well-prepared and experienced surgical team offers a great human and surgical experience.
Matériels et méthodes : McGill University and the Urology program approved the one-week mission which took place in February 2015 in Boromo, Burkina Faso. Our experience was acquired on three levels: 1) Surgical: The mission focused only on obstetrical fistulas. All cases operated by our team were complex and often recurrent. Residents were involved in preparing for the mission, and also actively participated in all surgeries. 2) Interaction with local teams: Multiple discussions took place with collaborating local health-care personnel implicated in the recruitment of the women from their respective communities, and also in their peri-operative and postoperative care. 3) Anthropological research: Long-term evaluation of results is assured through an anthropologic research program that visits the patients in their own villages a year after surgery.
Résultats : Thirty women were clinically evaluated for obstetrical fistulae throughout the week, and we operated on thirteen. All cases were vesico-vaginal fistulae. Eleven patients were operated using only a vaginal approach, and two patients also required abdominal approach. Fistulae varied in size, location and complexity. Repair techniques varied also, including neo-urethra creation and various usages of flaps. We performed one concomitant ureteral reimplantation, and dealt with two cases of complete idiopathic bladder neck obstructions, which were incised, one by open approach, the other one trans-vaginally. There were no immediate post-operative complications. Local healthcare teams were educated and involved in various aspects of peri-operative patient care.
Conclusions : International surgical mission trips in impoverished areas offer a unique enriching learning opportunity to Canadian residents travelling with a highly specialized medical team. Organization and discipline, cross-cultural human experiences, and advanced surgical techniques, all within grueling working conditions are some of the lessons learned on these missions. Although challenging in various ways, this unique experience should be highly recommended for any urology resident.

Photovaporisation sélective de la prostate par laser Greenlight XPS 180W; Évaluation de la courbe d'apprentissage

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Introduction et objectifs : La chirurgie d'ablation de la prostate par laser Greenlight pour le traitement de l'hypertrophie bénigne de la prostate (HBP) est une technique de plus en plus répandue. Notre but était d'étudier les paramètres intra-opératoires permettant d'établir la courbe d'apprentissage de cette technique.
Matériels et méthodes : Une étude rétrospective a été effectuée sur 150 patients opérés successivement par un seul chirurgien avec le laser Greenlight XPS 180W. Les caractéristiques préopératoires ont été enregistrées prospectivement pour chaque patient ainsi que les paramètres opératoires associés. Notre population a été divisée en trois groupes consécutifs de 50 patients. Les paramètres opératoires utilisés pour établir la courbe d'apprentissage incluent l'énergie livrée par volume prostatique (kj/cc), la réduction de l'APS à 6 mois (%), le ratio temps de laser sur temps total de l'opération et en dernier lieu l'énergie livrée par volume prostatique par minute de temps opératoire (kj/cc/min).
Résultats : Le volume prostatique médian était au-dessus de 60 cc pour chaque groupe. L'énergie livrée par volume prostatique ainsi que le pourcentage de réduction de l'APS à 6 mois ont augmentés de façon significative avec le temps ($p<0.001$). Il n'y a pas eu de changement significatif dans le ratio temps de laser sur temps total de l'opération lors de cette étude. Lors de l'évaluation de l'énergie livrée par volume prostatique par minute de temps opératoire, une augmentation statistiquement significative a été observée avec le temps ($p=0.027$).
Conclusions : Les paramètres opératoires tels que l'énergie livrée par volume prostatique ainsi que le pourcentage de réduction de l'APS à 6 mois peuvent être utiles pour évaluer le progrès durant l'apprentissage de la technique de photovaporisation sélective par laser.

Evaluation of preoperative functional autonomy factors for the prediction of complications post-radical cystectomy

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Introduction et objectifs : Radical cystectomy (RC) is known to carry a high risk of complications. Little data exists pertaining to modifiable preoperative risk factors influencing the 90-day complication rate after RC. The Functional Autonomy Measurement System (FAMS) was developed for the measurement of the needs of the elderly and the handicapped according to the WHO classification of disabilities. It has been studied and utilized in multiple fields including the evaluation and follow-up of patients undergoing surgery, rehabilitation, cognitive decline, etc. The objective of this pilot study was to examine the relationship between FAMS preoperative risk factors and complications after RC.
Matériels et méthodes : In consecutive patient undergoing RC at our institution from January 2011-April 2014, prospective multidisciplinary pre-op evaluations were conducted. 145 patients were evaluated in ergotherapy using the FAMS. Postoperative complications were classified (Clavien-Dindo and MSKCC systems). Logistic regressions were conducted for risk estimation of complications at 7, 30 and 90 days after RC, according to the pre-op FAMS evaluation.
Résultats : Mean hospitalization time was 17.9 days and 116 patients (80%) developed ≥1 complications (90-day post-op, 471 complications). A weak score on both (continuous variables) the Mental (scored 0-15) and Instrumental Activities of Daily Living (IADL, scored 0-24) FAMS portions were associated with a high-risk of neurological complications at 7 (OR 2.141; 95%CI 1.365–3.358, p=0.0009 and 1.162; 1.026–1.315, p=0.0179), 30 and 90 days (equivalent:2.122;1.375–3.279, p=0.0007 and 1.139;1.013–1.281, p=0.03).
Conclusions : Weak performance on the Mental and IADL portions of the FAMS pre-operative evaluation may predict an increased likelihood of

neurological complications within 90 days post-RC. If validated, the FAMS could help identify patients at high risk of neurological complications to eventually develop targeted risk-reduction interventions.

Mid-urethral slings for female urinary stress incontinence: 5-year follow-up of TVT, TVT-O and Composix™ based sling

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Introduction et objectifs : It is estimated that up to 50% of women will be affected by urinary incontinence in their lifetime. Currently mid-urethral slings are the most practiced stress urinary incontinence (SUI) surgery in North America. Multiple brands and techniques are available to the practicing urologist at various costs. We report and compared the efficacy of three slings in the long-term treatment of SUI: tension-free vaginal tape (TVT), tension-free vaginal tape-obturator (TVT-O) and an in-house cut ventral hernia repair sheet (Composix™) sling.

Matériels et méthodes : This prospective non-randomized single surgeon study included 128 patients with confirmed SUI operated between April 2002 and May 2010. Sling choice was discussed and agreed upon with the patient. Pre-operative evaluation included pertinent medical history, focused physical exam, IQOL and FPSUND and satisfaction questionnaires. Urodynamics were performed for uncertain diagnoses. 24-hour pre-operative pad test were completed in 104/128 patients. The in-house Composix™ sling, a monofilament polypropylene mesh, was cut under sterile conditions and re-sterilized prior to implantation. Patients were seen at cystoscopy at 1 month post-op followed by office visits bi-annually for 2 years and yearly for a total of 5 years. Follow-up visits included a focused questionnaire, physical exam, satisfaction questionnaire, pad-test, IQOL and FPSUND questionnaires.

Résultats : Composix™, TVT and TVT-O groups included 60, 34 and 34 patients respectively. Average age at surgery, number of gravida and previous hysterectomy were 58 years old, 2.7 and 57% for the entire cohort. No significant differences were found for patient baseline charactersitics between the surgical groups. Length of catheterization was the only immediate operative parameter with a significant difference (Composix™ 4.7d vs. TVT 1.07 vs. TVT-O 2.64, p=0.03). 70% and 25% percent of patients completed their 1 and 5 year follow-up. The entire cohort had significant improvements in their IQOL, FPSUND and Pad test results at 1 and 4 years follow-up (all p<0.01). The cohort wide pad-test average weight was 30.4g pre-operatively vs 5g at 12 months (p<0.00001). The pre-operative vs. 12 month pad test weight in the cohorts were Composix 61.1g to 8g, TVT 43.4g to 7.5g and TVT-O 53g to 9g (all p<0.0001, Wilcoxon test). All three measured outcomes in the three surgical groups were significant at 1 year follow-up (p<0.01).

Conclusions : This single surgeon cohort with 5 year follow-up demonstrated similar efficacy and patient satisfaction between the three cohorts. The Composix™ based sling provided comparable continence outcomes at a fraction of the cost of mid-urethral sling kits commercially available.

Durability of revision surgery for stenosis of catheterizable channels in adults

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Introduction et objectifs : The incidence of stenosis of continent catheterizable channels varies by channel type (e.g. Mitrofanoff vs. Monti vs. tapered ileal limb) and patient factors. Up to 55% of channels will require intervention for stenosis; intervention is usually a dilation but for recurrent stenosis revision surgery may be required. We sought to describe the strategies of surgical revision for catheterizable channel stenosis and their outcomes.

Matériels et méthodes : We retrospectively reviewed the charts of 74 adult patients who underwent catheterizable channel revision or replacement from 2000 to 2014 for stomal stenosis or difficult catheterization. The primary outcome was continued ability to catheterize the channel post-operatively without surgical dilation or revision. Secondary outcomes included channel continence and post-operative complications. Revisions were classified into the following strategies: revision above the rectus fascia, below the fascia, or channel replacement.

Résultats : Revision approaches included 42% above the fascia, 30% below the fascia, and 28% channel replacement. Patients with congenital etiology of neurogenic bladder were more likely than other patients to undergo more complicated revisions (p=0.012). Channel patency was achieved in 65% at a median 34 months post-revision procedure; there was no difference byrevision strategy (p=0.104). Severe stomal incontinence occurred in 3.2% after above the fascia repairs, 22.7% after below the fascia repairs and 14.3% after channel replacement (p=0.111). Surgical complications occurred in 28.4%; almost all were Clavien 1-2 and there was no difference by revision strategy (p=0.293).

Conclusions : Surgical revision for continent channel stenosis can be performed with good rates of durable patency. Patency rates are similar across surgical strategies of revision. Those with congenital neuropathic bladder require more complex revisions. Severe post-operative channel incontinence is not common. We present our management algorithm based on length of stenosis, the amount of redundant channel available for reconstruction, and the presence or lack of a continence mechanism prior to intervention.

Lumbar to sacral nerve rerouting to restore voiding function in a feline spinal cord injury model: results from a pilot study

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Introduction et objectifs : Complete spinal cord injuries (SCIs) can induce severe and chronic disabilities, including complex voiding dysfunction. Therapeutic options are limited in such cases. Lumbar to sacral rerouting surgery has the potential to allow voiding via a new skin-central nervous system-bladder reflex pathway. However, published studies have reported contradictory results due to heterogeneity of the populations investigated (complete and/or incomplete SCIs) or the use of non-pathophysiological models (i.e., spinal cord transection (SCT) after rerouting).

Matériels et méthodes : We assessed the potential of lumbar to sacral rerouting surgery to induce voiding after cutaneous stimulation in 8 spinalized cats. These animals underwent SCT at T9-T10. Unilateral L7-S1 ventral root anastomosis was performed 1 month later in 6 cats. The 2 others served as controls. Bilateral evaluation was conducted at 3, 5, 7 and 9 months by electrical and manual cutaneous stimulation and urodynamics coupled with electromyography.

Résultats : At 9 months, 33.3% (N=2) of rerouted cats presented a voiding stream triggered by ipsilateral cutaneous stimulation. 66.7% of the cats (N=4) also exhibited increased detrusor pressure evoked by stimulation. Neither voiding stream nor significant urodynamic responses were observed in the control group or in rerouted cats, after stimulation of the contralateral leg. All cats were alive at the end of follow-up. Our study demonstrates that L7 to S1 rerouting surgery below T10 SCT in an experimental feline model induces voiding in some cats and confirms that the majority of animals present increased detrusor pressure after ipsilateral dermatome stimulation.

Conclusions : Lumbar to sacral surgery below the SCT level is possible and can lead to voiding after cutaneous stimulation. These encouraging results justify a larger investigation with more animals, a control group with rhizotomy and longer follow-up (2 years). Only similar or better results, in a larger animal cohort, will support progression to a clinical study.

HMGB1 enhances radioresistance through activation of MAPKs pathways and evading cell cycle arrest in bladder cancer

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Introduction et objectifs : In muscle invasive bladder cancer, radiation therapy when combined with radio-sensitizing chemotherapy could be an attractive treatment as it offers bladder preservation allowing for normal urinary and sexual function. However, it is reserved for highly selected patients due to significant toxicity and lack of local control. High mobility group box 1 (HMGB1) is wildly expressed protein that plays a pivotal role in cellular response to stress. We have previously reported that interrogating HMGB1 levels sensitizes bladder cancer to gemcitabine and radiation *in vitro* and *in vivo*. Here we sought to investigate mechanisms of radiation resistance associated with HMGB1 expression.

Matériels et méthodes : The expression of HMGB1 among different bladder cancer cell lines was analyzed by mRNA and Protein quantification. Knock down of HMGB1 was done using lentiviral shRNA system. Cell survival pathways were assessed by western blot analysis post gemcitabine treatment (50nMol*6hours) and radiation (5 Grays). Cell cycle analysis was performed using flow cytometry. Cells with scramble and HMGB1 knockdown were exposed to either gemcitabine, radiation or combined treatment. Cells were fixed, stained and analyzed 24 hours post treatment.

Résultats : Our preliminary results from Western blot analysis showed that HMGB1 promote cell survival through the activation of MEK1/2 and subsequent phosphorylation of mitogen activated protein kinase (ERK1/2). Moreover, Cell cycle analysis revealed that upon HMGB1 knockdown, cell cycle arrest was induced at S phase post gemcitabine treatment and at G2 phase post radiation and combination therapy.

Conclusions : Our data suggest that HMGB1 plays an important role in regulating cell survival and cell cycle post chemo-radiation, which can attribute to the enhanced sensitivity observed upon HMGB1 knockdown in our previous results. We are currently investigating the association of HMGB1 with proteins involved at G2/M checkpoint and clarify the role of HMGB1 in senescence and apoptosis.

Does asymptomatic bacteriuria increases the risk of urosepsis or modifies intra-detrusor botulinum toxin A (BoNTA) efficacy?

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Introduction et objectifs : Intra detrusor BoNTA injection is an acceptable 2nd line treatment for neurogenic & non-neurogenic overactive bladder. The present recommendation suggest, for safety reasons, to postpone the procedure in case of urinary tract infection (UTI). These recommendations are based on the Infectious Disease Society of America guidelines before urological intervention referring to any "traumatic genitourinary procedures associated with mucosal bleeding." The lack of hard evidence regarding efficacy & safety of BoNTA injections in patients with asymptomatic bacteriuria questions the pertinence of this recommendation. Our study was intended to address this evidence gap.

Matériels et méthodes : Medical records of patients having received BoNTA between 2009 & 2013 was reviewed. Only patients with urodynamic study before & 3 month after their first BoNTA, and a urine culture (UC) taken at the time of injection were included in the efficacy analysis. Only patients with completed phone questionnaire 2 weeks after injection & UC at the time of injection were included in the safety analysis. Patients with frank pyuria or symptomatic UTI were not injected. Asymptomatic patients with positive dipstick were injected and then treated with empirical oral antibiotics until formal UC results were obtained. Efficacy was assessed by the change (%) in maximal cystometric capacity (MCC) after & before BoNTA. Safety was assessed by the presence of symptomatic UTI, hematuria or the need for hospitalization in the month following the injection.

Résultats : Safety cohort consisted of 458 injections (171 OAB, 287 NDO). Symptomatic UTI's were statistically significant related to the presence of positive UC (UC+), both in uni and multi-variant analysis ($p \leq 0.001$). Odds ratio for (UC+) was 15.9. No case of severe complication was observed in patients with (UC+). Efficacy cohort consisted of 92 patients (41 OAB, 51 NDO). (UC+) at the time of injection had no statistically significant effect on BoNTA efficacy in uni-variant analysis ($p=0.142$). In multi-variant analysis (UC+) along with etiology, gender, age, need for CIC and BoNTA dosage had no statistically significant effect on BoNTA injection efficacy. Although asymptomatic bacteriuria significantly increases the risk of symptomatic UTI, it does not increase the risk of urosepsis or the need for hospital admission. It does not adversely affect BoNTA injection efficacy, as assessed by MCC.

Conclusions : This study should lead to change the current injection recommendations.

Programme Scientifique - Session 4
Vendredi 18 septembre 2015

Population-based assessment of cancer specific mortality after local tumor ablation or expectant management for small renal masses: A competing risks analysis

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Introduction et objectifs : Local tumor ablation (LTA) and expectant management (EM) represent competing treatment options for patients with small renal masses (SRMs). We relied on competing risks regression to examine the potential difference in cancer specific mortality that could distinguish between these two alternative treatment modalities.

Matériels et méthodes : The study focused on 1860 patients with cT1a kidney cancer treated with either LTA or EM between 2000 and 2009 in the Surveillance Epidemiology and End Results-Medicare database. Propensity-score matching was used. Cancer specific mortality (CSM) represented the study outcome. Multivariable competing risks regression analyses adjusting for other-cause mortality as well as patient (including comorbidities) and tumor characteristics were fitted.

Résultats : Prior to propensity-score matching, fewer patients had LTA vs EM (30% vs 70%; n=553 vs. n=1307). Compared to EM patients, LTA patients were younger (median age 77 vs. 78 years; p0.001), more frequently Caucasian (84 vs. 78%; p=0.005), more frequently married (59 vs. 52%; p=0.02) and more frequently of high socio-economic status (54 vs. 45%; p=0.001). Afer propensity-score matching, 553 LTA and 553 EM patients remained for subsequent analyses. The mean standardized differences of patient characteristics between the two groups were <10%, indicating a high degree of similarity. After LTA or EM, the 5-year CSM estimates from Poisson regression derived smoothed plots were 3.5 and 9.1%, respectively. In multivariable competing risks regression analyses, LTA use resulted in a protective effect on CSM (HR 0.47; 95% confidence interval 0.25-0.89; p=0.02).

Conclusions : After adjustment for comorbidity and tumor characteristics in elderly patients with SRMs, LTA exerted a very important and highly statistically significant protective effect on CSM, compared to EM. This advantage of LTA should be strongly considered at informed consent.

Predictors of costs associated with radical cystectomy for bladder cancer: A population-based retrospective cohort study in the province of Quebec, Canada

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Introduction et objectifs : Bladder cancer (BC) has the highest lifetime treatment costs of all cancers. There is paucity of studies on the predictors of costs associated with BC management. We aimed to determine predictors of costs associated with radical cystectomy (RC) for BC in the province of Quebec, Canada.

Matériels et méthodes : We conducted a retrospective analysis in a cohort of 2759 patients that underwent RC for BC between 2000 and 2009. Data was obtained from two health administrative databases (RAMQ and ISQ). We analyzed predictors of pre-surgery costs, RC costs, post-surgery costs and total costs. The following variables were considered as potential predictors of costs: age, gender, hospital/surgeon RC annual case load, academic hospital and geo-administrative region. Multivariate linear regression (MLR) models were used to determine predictors.

Résultats : Predictors of pre-surgery costs were: increasing age (ß=808.64, p<.0001) and having surgery in an academic hospital (ß=511.42, p=0.003). Increased RC costs were associated with age (ß=196.73, p=0.0006), hospital/surgeon annual load (ß=484.45 and ß=254.21, p<.0001, respectively). Having surgery in academic hospitals and geographic region were significant predictors of low RC costs (ß=-1085.82 and ß=-449.31, p<.0001, respectively). Increasing age and the presence of post-operative complications were predictors of high post-operative costs (ß=623.48, ß=5781.44, p=0.01, respectively), while hospital load was associated with low post-surgery costs (ß=-949.79, p<.0001).

Conclusions : Patients' age and surgery performed by high-volume health providers were predictive factors of high RC costs. Low RC costs were associated with surgeries done at academic hospitals. Presence of post-operative complications was associated with high costs in the post-surgery period.

A standardized functional assessment to predict complications for patient undergoing radical cystectomy

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Introduction et objectifs : Sarcopenia defined EWGSOP by low muscle mass and low muscle function (strength and performance). A small muscle mass increases the risk of post-operative complication in various cancers but we found no study examining in standardized manner the muscle function. Radical cystectomy (RC) carries a high rate of complications and has a significant impact on the physical health and quality of life of patients(pt). The objective of this study was to examine the relation between objective pre-operative muscle function measures and risk of complications after RC.

Matériels et méthodes : From our institutional pilot prospective inter-disciplinary study of complications after RC, 104 pt undergoing RC between January 2011 and November 2014 were evaluated before surgery by a physiotherapist using the Short Physical Performance Battery(SPPB) and Jamar prehension test. Complications were extracted and classified using the Clavien-Dindo and MSKCC systems. Logistic regressions models were fitted to predict the 7, 30 and 90 days cumulative complication risk after RC. Multivariable models were adjusted for age, sex, ASA and BMI.

Résultats : Mean Jamar score was 35.2 (SD 10.4). SPPB was split in 3 categories [≤ 8][9-11][12] and respectively have 14, 35 and 53 pt. Eighty percent of them developed ≥1 complication within 90 days. SPPB was a good predictor of severe complications (grade >=3, OR 8.65 [95%CI:1.92-39.0]; p=0.02). A very low muscle function (SPPB [≤ 8]) increased the risk of overall complication at 30 days (OR 6.67[1.28-34.5]; p=0.02) and at 90 days (OR 6.81[1.53-30.34]; p=0.007).Low strength measured by the Jamar, was associated with neurological complications at 7days (OR 0.21[0.07-0.67]; p=0.009) and at 90 days (OR 0.31[0.12-0.81]; p=0.016).

Conclusions : A pre-operative evaluation of muscle function may predict the complication rate after RC. If validated, these simple tests could identify patients at high risk of complications after RC in whom targeted risk-reduction interventions could eventually be developed. More research is warranted in this understudied field.

Sexual functional outcomes with dorsal vs. ventral substitution bulbar urethroplasty

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Introduction et objectifs : Sexual dysfunction after substitution bulbar urethroplasty may include erectile dysfunction (ED) and ejaculatory dysfunction (EjD). Proposed mechanisms include neural injury and bulbospongiosus myopathy. We sought to describe the incidence of ED and EjD with substitution bulbar urethroplasty and compare incidence between the ventral vs. dorsal approach. We hypothesize that the SD incidence will be lower with ventral substitution as it requires less dissection.

Matériels et méthodes : Data on all patients who underwent a dorsal or ventral buccal onlay urethroplasty for a bulbar urethral stricture from 2009-2014 were retrospectively reviewed from six centers in the Trauma and Urologic Reconstruction Network of Surgeons (TURNS). The pre-operative scores were compared to the post-operative scores for the Sexual Health Inventory for Men (SHIM, for ED) and Male Sexual Health Questionnaire (MSHQ, for EjD).

Résultats : A total of 194 men underwent buccal graft onlay urethroplasty: 120 (61.9%) ventral and 74 (39.1%) dorsal. Of the 194 men patients, 112 patients had pre-operative questionnaires, 137 patients had 6-month post-op questionnaires and 99 had questionnaires at 12 months post-operative. Clinical characteristics were similar between both groups when comparing stricture etiology, stricture location within the bulb, smoking, diabetes, coronary artery disease and previous urethroplasty (all $p>0.05$). The dorsal group had longer strictures than the ventral group: 4.5 cm vs. 4.0 cm, respectively ($p=0.02$). Pre-operative MSHQ was 14.0 in both the dorsal and ventral groups ($p>0.05$). Pre-op SHIM was 22.5 in the ventral group vs. 24.0 in the dorsal group ($p>0.05$). There was no significant change in SHIM or MSHQ scores in either group post-operatively ($p>0.05$). Furthermore, the difference in differences was not significant. Individual items in each questionnaire were also examined and showed no change after surgery when examined at the group level.

Conclusions : Validated patient reported outcome measures do not detect an effect on either erectile or ejaculatory function with substitution bulbar urethroplasty. Further, there is no difference between ventral vs. dorsal approach. Individual patient experiences will vary with some having improved function and others impaired function; but, on average, there is no effect.

Histopathology analysis following pediatric circumcision: Relevant?

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Introduction et objectifs : The neonate circumcision is a marginal practice in the province of Quebec even with the most recent statement of the American Academy of Pediatrics. Two to five percent of uncircumcised boys will suffer from persistent phimosis and lichen sclerosis (LS) is one of its causes. LS is also a risk factor for developing penile carcinoma, meatal stricture and urethral stricture. Indications for circumcision in our centre include persisting phimosis despite topical treatment, paraphimosis and less frequently because of parent's desire. For this study, we compared LS signs obtained from the clinical exam and the histopathology report to validate the relevance of this analysis. Our second end-point was to evaluate the prevalence of LS in the pediatric population as it varies greatly between studies in this age group and may have been underestimated for children younger than 5 years old.

Matériels et méthodes : A retrospective study was performed on 226 pediatric patients who underwent a circumcision by an urologist from 2012 to 2014. Were excluded, all patients who received a modified circumcision as part of a minor hypospadias correction (n=5) and those we had incomplete pathological information (n=8). We recorded the delay from the initial assessment to the surgery, the LS clinical signs observed at the initial visit, the duration of the topical treatment, the pathological analysis and the follow-up visit.

Résultats : A complete analysis of the 213 charts was performed after exclusion. The mean age was 8 years old (2mos-18y/o). White atrophic skin lesions were observed preoperatively in 71 boys. The histopathology reported 109 normal prepuces, 55 nonspecific inflammation and LS in 50 patients for a prevalence of LS of 22%. Eleven of the fifty children with positive LS result were 5 years old or younger (22%). The clinical assessment sensibility was 74% with a specificity of 79%. Its positive predictive value was 52% and its negative predictive value was 91%.

Conclusions : The prevalence of LS is relatively small but the pediatric prevalence seems higher than previously reported. The predictability of LS from the clinical assessment seems largely imperfect, which leads us to conclude that we need to maintain the histopathology analysis of prepuce.

Radical cystectomy after irradiation for bladder cancer in Québec: A population-based analysis of outcomes

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Introduction et objectifs : Salvage radical cystectomy (sRC) is reserved for bladder cancer (BC) patients who failed irradiation as a primary modality of treatment. With reports confirming higher post-operative morbidity and mortality, our aim was to assess short and long-term outcomes in patients received post irradiation sRC across Quebec.

Matériels et méthodes : From 2000 to 2009, and within the RAMQ (Quebec health insurance medical services database) and ISQ (vital status database), we identified 2988 patients who underwent RC for BC. Our cohort was established using procedure codes to identify patients who received external beam radiotherapy (EBRT) for BC in the 2 years preceding RC. The outcomes analyzed included significant post-operative complications, mortality rates at 30, 60 and 90 days and overall survival.

Résultats : The cohort was formed of 103 patients who had their RCs performed in 25 hospitals by 70 surgeons. The majority (72.8%) of RCs were done in academic centers. Males comprised 69.9% of the cohort and 48.5% of patients were below 65 years. Among the cohort, 30.1% had at least one post-operative complication (Grade III-IV on Clavien grading system) and 23.3% had more than one complication. Urinary tract complications came first (17.4%) followed by gastrointestinal tract complications (7.7%). Post-operative mortality rates at 30, 60 and 90 days were 2.9%, 5.8% and 6.8% respectively. The 5-year overall survival rate was 46% and the mean overall survival was 4.5 years with a death rate of 48.6% over the entire follow-up period. One-to-two matched analysis for age, sex and place of RC with the original RC cohort showed no statistically significant survival difference between sRC and primary RC patients. ($p=0.77$).

Conclusions : Our study results suggest that sRC for BC may not have worse oncologic outcomes as compared to primary RC.

Dual therapy for refractory overactive bladder in children: A prospective open-label study

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Introduction et objectifs : To optimize pharmacotherapy in children who failed anticholinergic monotherapy by simultaneous administration of one anticholinergic and mirabegron, a ßeta3-adrenergic agonist.

Matériels et méthodes : Patients without symptoms improvement under intensive behavioural and medical therapies and/or significant S/E on anti-muscarinic dose escalation were recruited. A prospective off-label study using add-on adjusted-dose regimens of Mirabegron (25 to 50mg) was conducted with paediatric patients presenting refractory OAB. Efficacy and tolerability were assessed by: voiding diaries, post-void residuals,

urine cultures, EKG, vital signs and UDS if judged necessary. Families were also questioned for continence, S/E, compliance, and patient perception of bladder condition (PPBC) questionnaire.
Résultats : Twenty-six patients (5 girls, 21 boys) with OAB were recruited. Mean age at initiation of the second medication was 10.6±3.3 years and patients were on the add-on Mirabegron for a mean of 7.6±4.3months (minimum 3 months). Mean bladder capacity improved from 170±77mL to 237±99mL. So far, continence improved in all patients but 3, with 6 being completely dry. Post-void residual was increased to 50ml for one patient and no UTI was reported. Mean PPBC improved from 4.4 to 2.2. Four patients reported new mild or moderate S/E: rhinitis, abdominal cramps, constipation and nausea. Three patients withdrew from the protocol because of lack of efficacy and/or S/E. EKG and vitals signs remained normal.
Conclusions : Mirabegron, the first ßeta3-agonist used for the treatment of OAB, can effectively improve symptoms in children with refractory overactive bladder. The dual therapy (antimuscarinic-Mirabegron) was well tolerated and adjusted-dose regimen appeared safe in this first pediatric study.

Programme Scientifique - Session 8
Samedi 19 septembre 2015

Les antécédents chirurgicaux influencent-ils les résultats péri-opératoires des néphrectomies laparoscopiques?

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Introduction et objectifs : Les antécédents chirurgicaux sont souvent cités comme facteur de risque associé à des complications péri-opératoires. Nous avons déterminé l'impact des chirurgies abdominales antérieures chez les patients subissant une néphrectomie partielle ou radicale par laparoscopie pour des masses rénales.

Matériels et méthodes : Nous avons révisé rétrospectivement tous les cas de néphrectomies laparoscopiques effectués au CHUS de 2006 à 2012. Les patients étaient divisés en deux groupes selon la présence ou l'absence d'antécédents chirurgicaux abdominaux. Les caractéristiques pathologiques et cliniques étaient disponibles pour tous les patients. Quatre données péri-opératoires ont été comparées entre les deux groupes: le temps opératoire (min), les pertes sanguines (ml), la durée de séjour hospitalier (jours) et les complications à 30 jours (classification de Clavien). Une sous-analyse a été effectuée pour déterminer l'impact d'un antécédent de cholécystectomie (CCK) ouverte sur les résultats péri-opératoires des néphrectomies droites due à la proximité des deux sites chirurgicaux. Les analyses statistiques ont été effectuées avec le test de Student, le khi-deux et l'analyse multivariée avec un modèle de régression logistique.

Résultats : Un total de 293 patients a été identifié, de ce groupe 146 (49,8%) avaient déjà subi une chirurgie abdominale au moment de la néphrectomie. Certaines caractéristiques de bases différaient entre les deux groupes; les patients avec antécédents chirurgicaux sont plus vieux (66,9 vs. 61,2 ans, $p < 0.001$), plus malades ([Index de comorbidités de Charlson plus élevé] 3,3 vs. 2,6 $p = 0.002$), plus souvent des femmes (59,6 vs. 19%, $p < 0.001$) et présentent des tumeurs plus petites (4,7 vs. 5,4 cm, $p = 0.048$). Aucune différence au niveau de l'IMC et du score ASA n'a été détecté, de même que pour le temps opératoire (136 vs. 144 min, $p = 0.154$) et les pertes sanguines (88 vs. 100 ml, $p= 0.211$). Les taux de complications ont différés (24,0 vs. 13,6%, $p = 0.069$) mais sans atteindre une signification statistique entre les deux groupes. Cependant, le séjour post-opératoire (4 vs. 3 jours, $p = 0,001$) est plus long chez les patients avec antécédents chirurgicaux. Lors des analyses multivariées, seule une augmentation de l'index de comorbidités Charlson est associée aux complications (OR = 1,6 [1,3-1,9]). Lors de l'analyse des néphrectomies droites, les patients aillant subi une CCK (n = 19/142) ont un temps opératoire plus long (148 vs. 128 min, $p = 0.049$) et un taux de complication supérieur (42 vs. 16%, $p = 0.004$, ORajusté = 3,5 [1,5-10,6]). La taille de notre population est une limitation à la détection de différence significative entre les deux groupes.

Conclusions : La présence d'antécédents chirurgicaux abdominaux n'est pas associée à un taux supérieur de complications péri-opératoires chez les patients subissant une néphrectomie laparoscopique. Cependant, un antécédent de cholécystectomie ouverte est associé à une augmentation du temps opératoire de 20 minutes et un taux de complication 3,5 fois plus élevé lors d'une néphrectomie droite.

Impact de la chimiothérapie systémique ciblée sur la survie globale et l'utilisation des ressources hospitalières chez les patients atteints de cancer rénal métastatique

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Introduction et objectifs : Plus de 1500 cas de cancer du rein seront diagnostiqués au Québec cette année. Parmi ceux-ci, près de 30% atteindront le stade métastatique de la maladie. Actuellement, seule la chimiothérapie systémique ciblée et la chirurgie cytoréductive ont démontré une efficacité pour la survie des patients. Cependant, les coûts associés à ces traitements sont onéreux et très peu d'études sont disponibles sur l'impact de ces traitements sur l'utilisation des ressources hospitalières au Québec. Notre étude vise à quantifier l'effet de ces thérapies sur les patients du CHUS.

Matériels et méthodes : Nous avons identifié de manière rétrospective à l'aide de la plateforme ARIANE tous les patients atteints d'un cancer métastatique du rein, diagnostiqués et traités au CHUS de 2000 à 2014. Leurs données cliniques, histo-pathologiques, radiologiques et pharmacologiques ont été recueillies. De plus, nous avons analysé des mesures d'utilisation des ressources hospitalières, telles que les visites à l'urgence, les hospitalisations, ainsi que les consultations médicales et autres services professionnels. Deux groupes ont été créés selon la présence ou non de traitement de chimiothérapie. Des outils statistiques tels que les tests de khi carré et de T-student, de même que les courbes de survie de Kaplan-Meier nous permettront de les comparer.

Résultats : Nous avons identifié 103 patients atteints d'un cancer métastatique du rein. Parmi ces patients, 68 (66.0%) ont reçu une forme de chimiothérapie. Une seule métastase était présente chez 7 (10.3%) vs. 10 (28.6%) patients, traités et non- traités, respectivement. Le suivi médian des patients est de 13.5 mois (1-75) et pendant ce suivi, 79 (76.7%) patients vont succomber à la maladie. Les survies médianes des patients traités vs. non-traités sont de 15.5 vs. 7.9 mois ($p=0.011$, Breslow). Le nombre médian d'hospitalisation est plus élevé parmi ceux traités avec chimiothérapie, 2 (0-11) vs. 1 (0-5) sans chimiothérapie ($p=0.6$). Le nombre de visites à l'urgence va également différer entre les groupes où ceux traités auront une médiane de 1 visite vs. 0 pour ceux non traités ($p=0.036$). La demande de soins palliatifs sera également supérieure chez ceux traités 42 (61.8%) vs. 14 (40.0%) chez les patients non traités ($p= 0.04$). Le nombre médian de consultations médicales et autres services professionnels est de 6 (1-37) pour les traités vs. 3 (0-11) pour les non-traités ($p=0.046$). Plus de services ont été desservis pour ceux traités, par exemple, consultations en urologie (76.5 vs. 37.1%), hémato-oncologie (69.1 vs. 37.1%), radio-oncologie (54.4 vs. 34.3%), physiothérapie (32.4 vs. 11.4%) et l'intervention d'un infirmier pivot (52.9 vs. 20.0%) [tous $p<0.05$].

Conclusions : Les patients atteints d'un cancer du rein métastatique traités avec chimiothérapie ont une survie prolongée par rapport à ceux non traités mais nécessiteront plus de ressources médicales et hospitalières.

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Castration-resistant prostate cancer treatment patterns and trends in a real-life setting in Quebec

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Introduction et objectifs : Castration-resistant prostate cancer (CRPC) management has become increasingly complex in recent years, while docetaxel remained for most of the past decade the only approved mCRPC therapy to present a survival benefit in a phase III trial. Our study aimed to analyze in real-life healthcare services utilization, clinical outcomes and survival trends in the Quebec current management of CRPC.

Matériels et méthodes : The study cohort consisted of 6,927 patients with evidence of CRPC from January/2001 to July/2013, selected from the Régie de l'Assurance Maladie du Québec (RAMQ) databases. Survival was evaluated by Kaplan-Meier and the difference in survival between pre-/post-docetaxel (Doc) (2002-2005 vs 2008-2011) era by log-rank test. The association between Doc exposure and survival was evaluated by Cox proportional hazards model adjusted for several co-variables.

Résultats : In our study cohort, the overall distribution of first line therapy was: 17.6% chemotherapy, 47.5% maximal androgen blockade (MAB) alone, and 3.1% Abiraterone. Androgen targeted therapies (MAB or Abiraterone) were the treatment of choice for the elderly population (mean age 78.8 and 78 ±7, respectively), while chemotherapy was offered to younger patients (mean age 72 ±7.3). The use of chemotherapy was increased in the Doc (23.6%) vs pre-Doc (15.2%) periods. Survival in the Doc group was also significantly improved with an average of 5.89 months increment ($p<0.001$) and a 59% reduction in the risk of death when compared to the previous standard chemotherapy (HR1.41; 95%CI 1.17-1.77 pre-Doc vs Doc era).

Conclusions : In our study cohort, age seems to be a strong determinant in CRPC therapy selection. Chemotherapy usage increased after the introduction of Doc, but is still limited to the minority. Survival was improved in the Doc era. These findings are promising and encourage further real-life studies in newly approved CRPC therapies.

A Quebec cost-effectiveness study on the use of docetaxel and abiraterone in the management of castration-resistant prostate cancer

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Introduction et objectifs : Management of castration-resistant prostate cancer (CRPC) has evolved considerably in the last decade. This study focus on two therapies that showed survival benefits in CRPC phase-III trials, docetaxel (Doc) and abiraterone acetate (Abi). We aimed to evaluate the cost-effectiveness and survival impact of Doc and Abi in the management of CRPC in Quebec.

Matériels et méthodes : Study cohort was selected from the Régie de l'Assurance Maladie du Québec (RAMQ) and Med-Echo databases. It consisted of patients with CRPC starting chemotherapy or Abi treatments between 2002 and 2013. Survival was evaluated by Kaplan-Meier and by log-rank test for the difference in survival between pre-Doc (2002-2005, N=215) vs Doc (2008-2011, N=316) and pre-Abi (2009-2010; N=115, Doc only) and Abi (2012-2013, N=69; Abi+Doc,) eras. Drug exposures and survival was evaluated by cox proportional hazards model adjusted for co-variables. The incremental cost-effectiveness ratio (ICER) was obtained by dividing changes in the primary therapy costs and survival.

Résultats : Survival was significantly increased in the Doc vs pre-Doc and in the Abi vs pre-Abi era, with respectively 5.89 and 3.79 months survival increment ($p<0.001$). The use of Doc and Abi also altered the risk of death when compared to the previously used standard of care: the adjusted hazard ratios for pre-Doc vs Doc was 1.41 (95%CI 1.17-1.77), and pre-Abi vs Abi era was 1.32 (95%CI 0.98-1.78). The newer drugs present cost increments when compared to standard of care in preceding periods, which were C$18,720 for Doc and C$45,970 for Abi per patient during the study period. Finally, the ICER was C$30,271 and C$145,569 per life-year gained for each Doc and Abi eras.

Conclusions : Our real-world study indicates that introduction of Abi and previously of Doc resulted in a survival benefit when compared to the earlier standard of care, similarly to what was observed in clinical trials. This was accompanied by an ICER of C$30,271 and C$145,569 respectively to each Doc and Abi study periods.

Androgen deprivation therapy for prostate cancer and the risk of venous thromboembolism

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Introduction et objectifs : Few observational studies have investigated the association between androgen deprivation therapy (ADT) and venous thromboembolism (VTE) in patients with prostate cancer. We sought to determine whether the use of different types of ADT in patients with prostate cancer is associated with an increased incidence of VTE.

Matériels et méthodes : Design, setting, and participants: A population-based cohort study was conducted using the United Kingdom's Clinical Practice Research Datalink linked to the Hospital Episode Statistics repository. The cohort consisted of men newly-diagnosed with prostate cancer between April 1, 1998 and March 31, 2014. Time-dependent Cox proportional hazards models were used to estimate adjusted HRs with 95% CIs of hospitalized VTE associated with current and past ADT use, compared with non-use. A secondary analysis was conducted to assess the risk with current use of specific types of ADT.

Résultats : The cohort included 21,729 patients, of whom 609 were hospitalized for VTE during follow-up. Current ADT use was associated with an 84% increased risk of VTE (incidence rates: 10.1 vs 4.8 per 1000 person-years; HR: 1.84, 95%:1.50-2.26), whereas there was no association with past use (HR: 1.07, 95% CI: 0.81-1.42). In the secondary analysis, all types of ADT were associated with a high risk of VTE. Limitations include possible residual confounding, given the observational nature of the study.

Conclusions : The use of ADT was associated with an overall 84% increased risk of VTE, with the risk elevated with all ADT types.

Medical management of benign prostatic hyperplasia: Results from a population-based study

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Introduction et objectifs : Benign prostatic hyperplasia (BPH) is the leading cause of lower urinary tract symptoms (LUTS) in men older than 40 years. In men with bothersome LUTS and who desire treatment, medical treatment usually represents the first line. We examined the patterns of medical management of Benign Prostatic Hyperplasia (BPH) in the Montreal metropolitan area, within the context of a case control study focusing on incident prostate cancer (PCa).

Matériels et méthodes : Cases were 1933 men with incident prostate cancer diagnosed across Montreal hospitals between 2005 and 2009. Population controls included 1994 age-matched men from the same residential area. In-person interviews collected socio-demographic characteristics, and medical history: including BPH diagnosis, its duration and type of medical treatment. Baseline characteristics were compared by the chi-square likelihood test for categorical variables and by the students t-test for continuously coded variables.

Résultats : Overall, 1120 participants had history of BPH, of those 601 (53.7%) received medical treatment for BPH. Compared to individuals with medically untreated BPH, individuals with medically treated BPH were older at index date [mean: 66.9 vs. 64.9 years, p<0.001)], as well as at diagnosis of BPH [mean: 62.3 vs. 60.3 years, p<0.001]. Medically treated men also had a longer duration of BPH-history [mean: 4.8 vs. 4 years, p=0.02]. Regarding medical treatment, monotherapy was more often used than combination therapy [87.6% vs. 12.4%, p<0.001]. Alpha-blockers (69.9%) were most commonly used as monotherapy, followed by 5alpha-reductase inhibitors (5ARIs) (26.6%). Alpha-blockers plus 5ARIs were the commonest combination therapy (97.3%).
Conclusions : Despite evidence from randomized controlled trials for better efficacy with use of combination therapy, monotherapy consisting of alpha-blockers or 5ARI, in that order, is most frequently used. Additionally, 5ARI use was more common than previously reported (27% vs. 15%).

Présentation vidéo: Installation de prothèse pénienne malléable et gonflable

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Introduction et objectifs : L'installation de prothèse pénienne est le traitement de choix pour la dysfonction érectile réfractaire au traitement médical. Notre objectif est de décrire les indications, la procédure et les résultats fonctionnels de la technique d'installation de prothèse pénienne malléable et gonflable.
Matériels et méthodes : La mise en place de prothèse pénienne rigide et semi-rigide se fait au bloc opératoire typiquement sous anesthésie rachidienne. Dans un premier temps, nous effectuons la démonstration de la mise en place d'une prothèse pénienne semi-rigide (malléable) et dans un deuxième temps nous décrivons l'installation d'une prothèse pénienne rigide (gonflable) à trois pièces.
Résultats : Le taux de survie de la prothèse pénienne sans défaillance mécanique est de plus de 80-90% à 5 ans selon le type de prothèse mis en place. Le taux de satisfaction approche 85% chez les hommes et 75% chez leur partenaire.
Conclusions : La mise en place d'une prothèse pénienne est un traitement efficace et sécuritaire permettant aux hommes atteints de dysfonction érectile réfractaire au traitement médical la possibilité de retrouver une vie sexuelle satisfaisante.

Hand-assisted laparoscopic right colon mobilization for continent cutaneous ileal cecocystoplasty

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Introduction et objectifs : Video presentation: Continent cutaneous ileal cecocystoplasty (CCIC) offers an effective treatment option for patients with a thick-walled neurogenic bladder. To achieve a tension-free ileo-colic anastomosis, the right colon must be mobilized past the hepatic flexure via an extended laparotomy. We introduce hand-assisted laparoscopic right colon mobilization to allow for a tension-free bowel anastomosis through a Pfannenstiel incision.
Matériels et méthodes : A 10-cm Pfannenstiel incision is used to begin mobilization of the cecum along the line of Toldt. A gel hand port is inserted and pneumoperitoneum is achieved. A 12mm camera port is inserted through the umbilicus under direct vision. A 5mm midline trocar is placed one handbreadth cephalad to the umbilicus. The right colon is grasped through the hand port and is mobilized past the hepatic flexure, using electro-dissection via the 5 mm port. A Kocher maneuver is continued until the inferior vena cava and duodenum are well exposed. The stapled ileo-colic anastomosis, staple-tapering of ileum, and bladder augmentation are performed in the usual open fashion. The stoma is matured through the umbilical port site.
Résultats : The hand-assisted laparoscopic modification of the CCIC has been performed on 20 patients at our institution with an average operative time of 4 hours. One case was aborted before bowel harvest when it was apparent that severe morbid obesity (body mass index of 60) and tight mesentery would preclude a tension-free anastomosis. There have been no bowel injuries or ileo-colic anastomotic leaks.
Conclusions : CCIC using a hand-assisted laparoscopic mobilization of the right colon allows for a less invasive and more efficient bladder reconstructive procedure. Future research will explore whether there is a difference in hernia rates, wound complications or length of stay.

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Permanent seed brachytherapy as monotherapy in selected patients with intermediate risk prostate cancer

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Introduction et objectifs : Permanent seed brachytherapy (PB) is widely used in low-risk prostate cancer patients. As for intermediate risk cancer patients, they are often treated with PB in combination with external beam radiation (EBRT) and/or androgen deprivation therapy (ADT). There is an increasing trend to treat these intermediate risk cancer patients with PB as monotherapy. We report our results of patients with intermediate risk prostate cancers treated with exclusive PB.

Matériels et méthodes : We identified 451 patients with intermediate risk prostate cancer with either a Gleason 7 (11% had Gleason 4+3) or a PSA 10 ng/mL. Univariate analysis was done using Kaplan-Meier method and log rank test to determine predictive factors for biochemical recurrence (BCR) defined according to the Phoenix definition (nadir+2ng/ml).

Résultats : Mean age of the cohort was 66 years (SD 6y) with 12% Actuarial recurrence free survival at 5 and 7 years were 97% and 90%, respectively. Neither age (p=0.4), nor Gleason score (p=0.2) or PSA (p=0.4) were predictive of BCR. The mean PSA at last follow-up was 0.3 ng/mL (SD 0.4). The PSA was <0.2ng/mL and 0.5ng/mL in 68% and 88%, respectively.

Conclusions : Although a longer follow-up is needed in this relatively small sample of well selected patients with intermediate risk prostate cancer, PB monotherapy shows excellent results comparable to the results in low-risk cancer.

Is there a place for virtual reality simulators in assessment of competency in percutaneous renal access?

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Objective: To assess competency of urology Post-Graduate Trainees (PGTs) in percutaneous renal access (PCA).

Methods: Upon obtaining ethics approval and informed consents, PGTs between Post-Graduate Years (PGY-3 to PGY-5) from all four urology programs in Quebec were recruited. PCA competency of each participant was assessed objectively by performing task 4 on the PERC Mentor™ simulator, where they had to correctly access and pop 7 balloons in 7 different renal calyces, and subjectively by the validated percutaneous nephrolithotomy global rating scale (PCNL-GRS).

Results: A total of 26 PGTs with a mean age of 29.2±0.7 years participated in this study. When compared with the 21 PGTs without practice, all 5 PGTs who had practiced on the simulator were competent (p=0.03), and performed the task with significantly shorter operative time (13.9±0.7 vs. 4.4±0.4 minutes; p<0.001) and fluoroscopy time (9.3±0.6 vs. 3.4±0.4 minutes; p<0.001), and had significantly higher successful attempts to pop the balloons (23±5 vs. 68.7±11; p=0.001) and PCNL-GRS scores (13±0.6 vs. 20.6±1; p<0.001). According to a pass score of 13/25, thirteen PGTs were competent. Competent PGTs performed the task with significantly shorter fluoroscopy time (9.8 vs 6.5 minutes; p=0.01) and higher percentage of successful attempts to pop the balloons (p<0.001), higher PCNL-GRS score (p<0.001) and lower complications (p=0.01).

Conclusion: The PCNL-Global Rating Scale in combination with the PERC Mentor™ simulator was able to differentiate competent and non-competent PGTs.

La biobanque PROCURE du cancer de la prostate du Québec a atteint son but et constitue désormais un outil précieux pour la recherche

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Introduction et objectifs : Le cancer de la prostate figure au 1er rang des cancers chez l'homme et au 3e comme cause de décès par cancer au Canada. On ne peut en prédire le développement, l'évolution, ni les risques de récidive, d'où l'importance de la recherche dans ce domaine. À cette fin, PROCURE, un organisme québécois voué à la lutte contre le cancer de la prostate, s'est donné comme objectif en 2007 de créer une biobanque pan-provinciale composée d'échantillons biologiques et de données prospectives. Son objectif de 2 000 participants a été atteint en 2012 : voici les caractéristiques de cette cohorte en 2015.

Matériels et méthodes : De 2007 à 2012, dans les quatre centres hospitaliers universitaires du Québec, 2 020 patients ayant opté pour la prostatectomie suite à un diagnostic de cancer de la prostate ont accepté de participer au projet. De ce groupe, 1 970 ont finalement été opérés et ont contribué à la biobanque, acceptant aussi de fournir prospectivement des échantillons de sang et d'urine lors de visites périodiques de suivi. Ils ont aussi rempli un questionnaire socio-démographique et d'habitudes de vie.

Résultats : L'âge moyen de la cohorte est de 62 ans et l'antigène prostatique spécifique au diagnostic est de 7,9 ng/mL. Les grades Gleason (G) moyens des tumeurs à la biopsie de même qu'à la chirurgie sont de 7. Pour l'ensemble des cas, la distribution des grades est la suivante : G6 : 23,7% ; G7 : 66% ; G8 : 5,1% ; G9 : 5,1% et G10 : 0,05%. Le stade tumoral prédominant est pT2 (62,5%), suivi de pT3a (26,7%) et de pT3b (10,9%). Les ganglions, examinés chez 50% des patients, sont positifs dans 9,3% des cas. L'extension extraprostatique et l'invasion des vésicules séminales sont observées dans 36,5% et 11% des cas, respectivement. La médiane de suivi chez les participants est de 48,2 mois. Jusqu'à maintenant, 508 cas de récidive ont été identifiés (ou 27,5%). La majorité de ces patients (448, soit 88%) a été traitée par radiothérapie, seule (42%) ou combinée à l'hormonothérapie (33%). Le nombre total de décès à ce jour est de 77 (4%), dont 16 (0,8%) dus au cancer de la prostate. Fait intéressant reflétant l'hétérogénéité du cancer de la prostate, 11 cas sur 374 (2,9%) de G6 sans grade tertiaire, sans extension extraprostatique ni invasion des vésicules séminales ont récidivé après un temps médian de 26 mois alors que 11 cas de G8 et plus (sur 201 cas, soit 5,5%) avec un ou plusieurs signes d'invasion n'ont montré aucune récidive après un temps médian de 50 mois. Cinquante cas de notre biobanque ont été sélectionnés pour un projet d'envergure : « The Cancer Genome Atlas ».

Conclusions : La Biobanque PROCURE a atteint une maturité telle qu'elle représente désormais un outil de choix pour la recherche sur le cancer de la prostate. Avec une cohorte de 1 970 prostatectomies et une projection de 10 années de suivi avec échantillons biologiques recueillis périodiquement, la valeur de la Biobanque continuera de s'accroître, en faisant ainsi une ressource inestimable pour les chercheurs œuvrant dans ce domaine.
*En partenariat avec La Société de Recherche sur le Cancer.