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Observance aux lignes directrices pour le traitement par approche multimodale chez les patients atteints de carcinome non-urothélial de la vessie pt2-3 non-métastatique : tendances à travers le temps et analyses de survie

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Introduction : Nous avons testé l'effet du traitement multimodal, défini comme cystectomie radicale avec chimiothérapie ou radiothérapie, sur la mortalité due au cancer chez les patients atteints de cancer non-urothélial de la vessie pT2-3 non métastatique comparé à l'utilisation de la cystectomie radicale seule.
Méthodes : Dans la base de données SEER, 887 les patients avec carcinome non-urothélial pT2-3 M0 ont été identifiés. Des courbes Kaplan-Meier, des régressions de Cox uni- et multivariées ont utilisé pour les analyses de survie.
Résultats : Le carcinome neuroendocrine (NE) représentait 27.7% de notre population, alors que le carcinome épidermoïde et l'adénocarcinome - 56.3% et 16.0%, respectivement. Le traitement multimodal était plus fréquent chez les patients atteints de NE (69.1%). Le taux de mortalité due au cancer à 5 ans chez les patients avec NE était significativement plus faible dans le sous-groupe traité avec approche multimodale versus ceux avec cystectomie radicale seule (37.0 vs 51.5%, p<0.01). Cet avantage n'a pas été observé chez les patients atteints de carcinome épidermoïde ni chez ceux atteints d'adénocarcinome. Dans les analyses multivariées, le traitement multimodal était un facteur protecteur chez les patients atteints de NE (ratio des risques 0.58, p = 0.03).
Conclusions : Seulement les patients atteints de NE bénéficie d'un plus faible taux de mortalité avec l'utilisation du traitement par approche multimodale.

Radiothérapie externe améliore la survie chez les patients octogénaires atteints de cancer de prostate non métastatique à risque d'Amico élevé et intermédiaire

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Introduction : Nous avons testé l'effet de la radiothérapie externe sur la mortalité due au cancer chez les octogénaires atteints de cancer de prostate non métastatique avec une espérance de vie de moins de 10 ans comparé à l'absence de traitement.
Méthodes : 24 727 patients octogénaires avec cancer de prostate localisé ont été identifiés dans la base de données SEER (2004-2015). Les tendances annuelles, des analyses multivariées et les tendances cumulatives ont été effectuées après l'appariement des scores de propension. Des analyses de sensibilité ont été effectué après stratification selon le risque D'Amico.
Résultats : Parmi notre cohorte, 29.6% des patients ont reçu de la radiothérapie externe. Le taux d'utilisation de la radiothérapie externe a augmenté de façon significative à travers les années (25.0-42.4%). Dans notre cohorte, le taux de mortalité due au cancer à 10 ans était de 10.6% dans le groupe de radiothérapie versus 17.0% dans le groupe sans traitement. De plus, la mortalité due à d'autres causes était également plus faible dans le groupe de radiothérapie externe (50.3 vs. 58.1%, p<0.001). Dans les analyses multivariées, la radiothérapie représentait un facteur protecteur chez les patients octogénaires atteints de cancer de prostate localisé dans la cohorte générale (ratio des risques 0.5, p<0.001) ainsi que chez les patients avec risque D'Amico élevé (ratio des risques 0.5, p<0.001) et intermédiaire (ratio des risques 0.5, p<0.001). Par contre, cet avantage n'a pas été observé dans le groupe de risque faible (ratio des risques 0.8, p=0.5).
Conclusions : Les patients octogénaires atteints de cancer de prostate non métastatique avec une espérance de vie de moins de 10 ans bénéficient d'un plus faible taux de mortalité due au cancer en utilisation la radiothérapie externe s'ils ont un cancer à risque D'Amico élevé ou intermédiaire.

The use of 5-alpha reductase inhibitors prior to radical cystectomy — do they render high-grade bladder tumors less aggressive?

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Introduction : Recent research suggests 5-alpha reductase inhibitors (5ARIs) may slow the progression of non-muscle-invasive bladder cancer. In this study, we assess whether use of 5ARIs influences the findings on surgical pathology at the time of radical cystectomy (RC) and clinical outcomes.
Méthodes : We retrospectively reviewed all patients who underwent RC at our institution between 2009 and 2017. Men were included who had urothelial cancer in the RC specimen. Patients with non-urothelial pathology or who had no cancer in the specimen were excluded. Odds ratios for pathologic features and hazard ratios for survival were adjusted for baseline patient characteristics and stage.
Résultats : Following exclusions, our cohort included 338 men; 48 (14%) patients were taking dutasteride or finasteride at time of RC, while 58(17%) were taking metformin and 195(58%) statins. Among patients who took 5ARIs, there was a lower incidence of positive margins (p=0.08) and lymphovascular invasion (p=0.05). This was statistically significant when patients with urothelial carcinoma variants were excluded. Multivariable logistic regression analysis demonstrated that 5ARI use was associated with a lower odds ratio (OR) for the presence of lymphovascular invasion (OR 0.49; 0.24–1.00; p=0.049) and positive surgical margins (OR 0.30; 0.09–1.07; p=0.063). Further, 5ARI use was associated with better overall, with an adjusted hazard ratio of 0.40 (0.19– 0.83; p=0.015). No similar tendencies were observed with metformin or statins.
Conclusions : This study suggests the use of 5ARIs may exert a protective biologic effect on the invasive properties of high-grade urothelial carcinoma. Further research is needed to understand the therapeutic implications.

Synchronous metastasis rates in T1 renal cell carcinoma

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Introduction: Il existe peu de données récentes sur les taux de métastases synchrones (MS) des carcinomes à cellules rénales (CCR) T1 traités chirurgicalement. Le but était de déterminer les taux de MS des CCR T1.
Méthodes : 64 416 patients avec CCR T1 diagnostiqué entre 2004 et 2015 répertoriés dans la base de données Surveillance, Epidemiology and End Results (SEER) traités par néphrectomie partielle ou radicale. Les taux de MS ont été comptabilisés et analysés selon des modèles de régression logistique multivariée
Résultats : Chez les patients ayant eu une néphrectomie partielle les taux de MS variaient de 0.1 à 1.8% pour des intervalles de 11-20 à 60-70mm versus 0.7 à 4,8% pour ceux ayant eu une néphrectomie radicale. Aucune métastase répertoriée pour les CCR associés à un kyste. Les plus faibles taux répertoriés de MS ont été les histologies papillaires (0.2-2.3%) et chromophobes (0-1.7%) et les plus élevés les tubules collecteurs (0-25%) et la dédifférenciation sarcomatoïde (10.0-29.7%). En analyse multivariée, les intervalles de tailles ($p<0.001$), la néphrectomie radicale (OR 2.8, $p<0.001$) et les grades de Fuhrman 3-4 (OR 3.0. $p<0.001$) étaient des facteurs prédicteurs indépendants de MS. Les os seulement étaient le site de MS le plus fréquent (44.2%), suivi des poumons seulement (29.7%), du foie seulement (5.0%) et du cerveau seulement (4.2%). 83.1% des patients avec une MS avaient un seul site de métastase.
Conclusions : Les MS sont inexistantes pour les CCR T1 associés à un kyste, très faibles pour les papillaires et les chromophobes et intermédiaires pour les cellules claires. Les taux sont plus élevés pour les CCR T1 de dédifférenciation sarcomatoïde et les tubules collecteurs. Les sites de MS les plus fréquents sont les os seulement, suivi des poumons seulement et pratiquement toutes les MS sont uniques

Comparison of early vs. delayed ureteroscopy following obstructive pyelonephritis treated with urinary diversion

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Introduction : Urolithiasis is a common disease affecting approximately 8.8% of Americans. Obstructive urolithiasis and sepsis call for emergent decompression and antibiotic therapy. After treatment, definitive management can be achieved with ureteroscopy (URS) or percutaneous nephrolithotomy. There are no guidelines identifying the best moment to perform elective URS after urosepsis. Thus, our objective is to compare the outcomes, especially post-URS sepsis, of patients who underwent early vs. delayed URS for obstructive pyelonephritis following decompression.
Méthodes : In this retrospective, non-inferiority, single-center study, data was collected from patients who underwent elective URS following decompression for obstructive pyelonephritis between years 2012 and 2017. Patients with the following criteria were excluded: obstruction unrelated to urolithiasis, other procedures performed during URS, and unclear diagnosis. Early URS was defined as URS performed within 14 days after decompression while the patient was still on antibiotics.
Résultats : A total of 164 patients were included in the study. Of those patients, 61 of them had early URS, while 103 had delayed URS. There were a total of 10 post-URS sepsis, including one in the early URS group and the other nine in the delayed URS group. The adjusted odds ratio after multivariate analysis is 7.3 ($p=0.0661$) for post-URS sepsis when comparing delayed URS to early URS. The complication-free survival at 30 days is 98.4% for early URS and 91.3% for delayed URS ($p=0.0665$).
Conclusions : Our study clearly shows the non-inferiority of early URS for post-URS sepsis when compared to delayed URS. Furthermore, our data are showing a tendency that early URS might be better than delayed URS regarding post-URS sepsis, although it is not statistically significant. Further studies will be needed to evaluate the superiority of early URS. However, our results showed that it is safe to perform early URS for treatment of urolithiasis following emergent decompression for obstructive pyelonephritis.

Développement d'un système d'imagerie pour évaluer la réponse pharmacologique de cellules cancéreuses de la prostate isolées à partir de biopsies de patients

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Introduction : Dans les dernières années, de nouveaux traitements antiandrogéniques ont permis d'augmenter la survie globale des patients atteints d'un cancer de la prostate (CaP) résistant à la castration. Cependant, seulement 20 à 60% des patients répondent à ce type de traitement. Étant donné que le niveau circulant de PSA est le seul indicateur de réponse au traitement et qu'il est seulement évalué trois mois après le début de la thérapie, il est primordial de développer un test permettant de prédire la réponse aux antiandrogènes (AA). Les cellules cancéreuses issues de biopsies prostatiques ou métastatiques peuvent être analysées afin de déterminer leur sensibilité au traitement. **L'**objectif était Mise au point et caractérisation d'une nouvelle technologie d'imagerie par bioluminescence pour 1) détecter des cellules de CaP à partir de biopsies dissociées et 2) évaluer de manière dynamique la sensibilité aux AA de la cible thérapeutique, soit le récepteur aux androgènes (AR).
Méthodes : Des biopsies prostatiques ont été dissociées en présence de collagénase II et de DNase pour 16h. Les cellules dissociées de biopsies ont été transduites avec différents systèmes rapporteurs adénoviraux spécifiques puis recouvertes d'une matrice extracellulaire (Matrigel™) et imagées avant et après expositions aux AA. Différents temps de transduction et de traitement ainsi que deux AA à différentes concentrations ont été testé.
Résultats : Notre méthode permet d'immobiliser et de détecter spécifiquement des cellules primaires de CaP. Elle permet d'évaluer de façon dynamique pour chaque cellule, l'activité transcriptionnelle du AR lors de traitements aux AA. Les conditions d'infection, de traitements (durée de traitements et concentration de l'AA) optimales ont été déterminées.
Conclusions : Notre système de détection évaluant la réponse aux AA sur des biopsies de patients a le potentiel de prédire la réponse des patients atteints de CaP à différents traitements d'AA et, ultimement, de personnaliser leur prise en charge thérapeutique.

Les compétences en chirurgie robotique de base sont-elles transférables du simulateur à la salle d'opération? Une étude éducative prospective randomisée

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Introduction : Le but de cette étude était d'évaluer la transférabilité des compétences robotiques de base du simulateur de systèmes chirurgicaux daVinci vers la salle d'opération lors d'une prostatectomie radicale assistée par robot.
Méthodes : Quatorze résidents en urologie ont été randomisés en 2 groupes: le groupe A devait s'entraîner pendant 3 séances (9 exercices chaque) sur le simulateur, tandis que le groupe B devait s'exercer (les 9 mêmes exercices) jusqu'à l'acquisition de la compétence. Les deux groupes ont été enregistrés en pratiquant sur le simulateur de systèmes chirurgicaux. Ils ont ensuite été enregistrés lors de la mobilisation de la vessie au cours de la prostatectomie radicale assistée par robot. Les résidents en chef des deux groupes ont également été enregistrés lors d'une anastomose urétro-vésicale au cours de la prostatectomie radicale assistée par robot. Les enregistrements ont été évalués à l'aveugle à l'aide de l'outil GEARS validé par C-SATS. La corrélation de Spearman (rho) a été utilisé pour évaluer les relations entre les scores GEARS des séances d'essais sur le simulateur de systèmes chirurgicaux et les scores GEARS

lors de la mobilisation de la vessie et l'anastomose urétro-vésicale lors de la prostatectomie radicale assistée par robot.
Résultats : Il n'y avait aucune différence dans les scores GEARS totaux entre les 2 groupes de résidents. Le score de la composante d'efficacité de GEARS au cours de la tâche «Énergie et dissection» sur le simulateur de systèmes chirurgicaux est en corrélation avec la composante d'efficacité de GEARS lors de la mobilisation de la vessie (rho=0.62, p=0.03). Le score de sensibilité à la force de GEARS lors des tâches «Anneau et rail» et «Points et aiguilles» du simulateur de systèmes chirurgicaux est en corrélation avec le score de sensibilité à la force de GEARS lors de la mobilisation de la vessie (rho=0.58, p=0.047; rho=0.65, p=0.02, respectivement). Les scores GEARS totaux pour les tâches «Anneau et rail» et «Éponge de suture» étaient en corrélation avec les scores GEARS totaux pendant les anastomoses urétro-vésicale (rho=0.86, p=0.007; rho=0.90, p=0.002).
Conclusions : Les évaluations objectives des résidents en urologie sur le simulateur de systèmes chirurgicaux da Vinci étaient en corrélation positive avec leurs évaluations objectives de la mobilisation de la vessie et de l'anastomose urétro-vésicale. Cela démontre que les compétences de base en chirurgie robotique pourraient être transférées du simulateur au bloc opératoire.

Contemporary assessment of survival rates in stage IS germ cell tumors: A population-based comparison between surveillance and active treatment after initial orchiectomy

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Introduction : We analyzed contemporary post-orchiectomy management strategies for stage IS seminoma (SGCTT) and non-seminoma germ cell tumors of the testis (NSGCTT), with focus on cancer-specific mortality (CSM) and overall mortality (OM).
Méthodes : Within the Surveillance, Epidemiology, and End Results (SEER) database (2004–2015), we identified 720 SGCTT and 1065 NSGCTT patients. Estimated annual percentage change (EAPC), inverse probability of treatment weighting (IPTW) adjusted Kaplan-Meier plots, and Cox regression models were used.
Résultats : In SGCCT, surveillance and chemotherapy (CHT) rates increased (24.2–50% and 5.5–42.9%, respectively; p<0.001). Conversely, radiotherapy (RT) rates decreased (70.3–7.1%; p<0.001). In NSGCCT, CHT rates increased (25.7–46.9%; p<0.001), retroperitoneal lymph node dissection (RPLND) rates decreased (18.6–2.0%; p<0.001), and surveillance rates were stable (p=0.3). In SGCTT, surveillance vs. active treatments (CHT or RT) five-year CSM rates were 0.8 vs. 0.8%, respectively (hazard ratio [HR] 0.53; p=0.4), while OM rates were 1.4 vs. 1.6%, respectively (HR 0.98; p=0.9). In NSGCTT, surveillance vs. active treatments (CHT or RPLND) five-year CSM rates were 1.2 vs. 2.6%, respectively (HR 2.2; p=0.1), while OM rates were 3.5 vs. 3.1%, respectively (HR 0.93; p=0.8).
Conclusions : CHT rates significantly increased for both SGCTT and NSGCTT, while surveillance increase for SGCTT only. None of surveillance vs. AT comparisons yielded significant CSM or OM differences. However, extremely low mortality rates rendered comparisons difficult.

Contemporary trends of orthotopic neobladder at radical cystectomy for urothelial carcinoma of the urinary bladder and in-hospital complications rate: Comparison between men and women

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Introduction : We investigated the gender effect on perioperative complications, in-hospital mortality, length of stay (LOS), and total hospital charges (THCs) when orthotopicneobladder (ONB) reconstruction is performed at radical cystectomy (RC) in patients with non-metastatic urothelial carcinoma of urinary bladder (UCUB).
Méthodes : Within the National Inpatients Sample (NIS) databases (2004–2015), 6211 patients treated with ONB for non-metastatic UCUB were identified. Estimated annual percentage change (EAPC) for ONB at RC according to gender were tested. After stratification between men vs. women, separate multivariable logistic regression models focused on the following endpoints: in-hospital mortality, LOS, THCs, overall and specific complications.
Résultats : Of all ONBs at RC, 554 (8.9%) were women. ONB annual rates were lower in women relative to men (4.0% vs. 10.2%) and were stable over time for both genders (p=0.3 and p=0.2, respectively). In women, higher absolute transfusion rate (36.1 vs. 25.2%) was recorded (p<0.001). In multivariable analyses, female gender indeed predicted higher transfusion rates (odd ratio [OR] 1.74; p=0.02), as well as lower rate of medical miscellaneous complications (OR 0.58; p=0.04). No significant differences were recorded in overall complications, other specific complications, in-hospital mortality, LOS and THCs.
Conclusions : ONB is less frequently performed in women and does not result in higher complication rates, except for higher transfusion rates.

Rôle de l'autophagie dans le développement d'une résistance aux inhibiteurs de PARP dans le cancer de la prostate

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Introduction : Les patients atteints d'un cancer de la prostate (CP) vont malheureusement développer une résistance à la thérapie hormonale et la chimiothérapie. Pour faire face à cela de nouvelles thérapies, comme les inhibiteurs de PARP (olaparib, niraparib et talazoparib), commencent à être combinées avec celles utilisées actuellement dans le but d'améliorer l'espérance de vie des patients. Des études antérieures ont suggéré que l'autophagie, un mécanisme d'homéostasie cellulaire, pouvait jouer un rôle important dans la mise en place de résistances ren réponse à divers traitements thérapeutiques. Aucune étude ne s'est pour l'instant intéressée au rôle de l'autophagie dans la résistance aux inhibiteurs de PARP dans le CP. Le but du projet est donc de déterminer si l'autophagie peut favoriser le développement de telles résistances.
Méthodes : Pour ce faire, deux lignées hormonosensibles (LNCaP et 22Rv1) ainsi que trois résistantes à la castration (C4-2b, PC3 et DU145) ont été utilisées. Des mesures de niveau d'expression protéique ont été effectuées par western blot. La variation d'autophagie a été confirmée par microscopie confocale en utilisant un systèeme tandem mCherry-GFP LC3. La viabilité cellulaire après traitement aux inhibiteurs de PARP a

aussi été mesurée à la suite d'une activation par la rapamycine et une inhibition de l'autophagie (CRISPR/Cas9 contre Atg16) afin de vérifier si ce mécanisme a un impact sur la sensibilité des lignées testées. L'importance de la senescence dans cette résistance a aussi été déterminée par mesure du cycle cellulaire et de l'activité beta-Galactosidase.
Résultats : Nos données suggèrent que les lignées résistantes à la castration ont des niveaux plus élevés d'autophagie comparativement aux lignées hormonosensibles. Les PC3 et DU145 sont moins sensibles à l'olaparib. De plus, cet inhibiteur de PARP régule positivement l'autophagie des PC3 et des C4-2b. Cette activation passe par l'inhibition de la voie mTOR et non par celle d'AMPK au vu de la diminution observée des produits de mTOR. De façon intéressante, une sur-activation de l'autophagie par la rapamycine permet aux cellules de recommencer à progresser dans le cycle cellulaire, phénomène corrélé avec une augmentation de la capacité à réparer leur l'ADN. De plus, une diminution du phénotype de senescence a aussi été observée. L'ensemble de ces variations permettent aux cellules d'être plus résistante à l'olaparib. Un KO total de l'autophagie induit un phénotype inverse.
Conclusions : L'olaparib régule de façon positive l'autophagie de certaines des lignées testées. En activant cette autophagie ou en l'inhibant, la sensibilité de ces lignées est affectée. Ainsi, l'autophagie semble avoir un impact sur la réponse à l'olaparib. Ces résultats permettront de mieux comprendre et anticiper l'apparition de résistance aux inhibiteurs de PARP chez les patients atteints d'un CP.

Cytoreductive nephrectomy in contemporary metastatic renal cell carcinoma

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Introduction : A recent randomized trial questioned the role of cytoreductive nephrectomy (CN) in clear-cell metastatic renal cell carcinoma (ccmRCC). We reassessed the effect of CN on survival in a contemporary population-based ccmRCC cohort.
Méthodes : Within Surveillance, Epidemiology, and End Results database (2010–2015), we focused on ccmRCC patients. Primary endpoint consisted of overall mortality (OM). Univariable and multivariable Cox regression (MCR) models were applied in the overall cohort and in targeted therapy (TT) patients. Sensitivity analyses included 1:1 propensity score (PS) matching, three- and six-month landmark analyses, incremental survival benefit analyses, and metastases number and location based stratifications.
Résultats : Of 4062 ccmRCC patients, 2241 (55.1%) received TT; CN was performed in 2226 (54.8%) and 1168 (52.1%) in overall and TT cohorts, respectively. CN was associated with lower OM relative to no CN in overall (median survival 30 vs. 9 months; hazard ratio [HR] 0.43; p<0.001), as well as in TT cohorts (median survival 28 vs. 12 months; HR 0.49; p<0.001). In sensitivity analyses, CN was associated with lower OM after 1:1 PS matching (HR 0.49; p<0.001), in three- and six- month landmark analyses (HR 0.49; p<0.001 and HR 0.51; p<0.001, respectively), in metastases number and location-based stratifications, except for exclusive liver metastases, as well as in all incremental benefit analyses.
Conclusions : CN is associated with better survival in ccmRCC patients, including those exposed to TT, after adjustment for multiple potential confounders.

Retrospective analysis on the safety and innocuity of monopolar transurethral resection of prostate as an outpatient day-care surgery

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Introduction : Transurethral resection of the prostate using monopolar current (mTURP) is the most common operation and gold standard treatment for benign prostatic hyperplasia (BPH). Despite a high efficacy, mTURP have an associated overall morbidity close to 20%, with most common risks being acute transitory urinary retention, clot retention, postoperative hematuria, urinary tract infection, and TUR syndrome. Newer technologies have been advocated to reduce complications and length of hospital stay. Traditionally, mTURP is performed with a postoperative hospitalization (POH). At our center, many patients have undergone mTURP as a day-care surgery (DCS). To our knowledge, only two contemporary studies have reported on the feasibility and safety of this method. Herein, we review our experience to assess the efficacy and innocuity of mTURP, comparing the 30-day complication rates among DCS, POH, and the literature.
Méthodes : In this single-institution, retrospective study, we reviewed medical records of 628 patients who underwent mTURP between January 1, 2016 and March 31, 2018 after failed medical therapy for BPH. A total of 362 patients underwent mTURP according to our criteria and were included in the final analysis. Patients' demographics, complications, and emergency room (ER) consultations were recorded. Ethics approval was obtained from the local research ethics board.
Résultats : Of the 362 mTURP procedures, there were 187 DCS (52%) and 175 POH. Median age was 71.6 years (standard deviation [SD] 9.48); 64.5% had an ASA score of 2 and 21.6% of 3 or more. There were no significant differences between the two groups for ASA score, body mass index (BMI), surgery performed under aspirin (13% in each group) and mean volume of prostate resected (17.4 vs. 18.9 g.). In this retrospective analysis, a slight difference in distribution was seen on anticoagulation, vascular disease, cognitive impairment, diabetes, and preoperative bacteriuria. Age distribution is slightly younger in DCS (mean age 70.12, SD 9.56) than in POH (mean age 73.23, SD 9.16). Mean resection time was 48 minutes in the DCS group and 52 minutes in the POH group (p=0.06). The bladder catheter of patient in the DCS subgroup was removed mostly within 24–48 hours at home by ambulatory nurse's service, while POH patients' catheter could be either removed during the hospitalization or similarly at home. In each group, 22% of patients consulted in the ER within the first 30 postoperative days, with non-statistically significant rates of hematuria (DCS 11.2% vs. POH 11.4%), acute retention (DCS 7.5% vs. POH 12%), or UTI (DCS 8.6% vs. POH 10.3%). Readmission rate was 4.4% overall (DCS 4.3% and POH 4.6%). Blood transfusion was required for six patients in the DCS group and one in the POH group (p=0.06). Reoperation (clot evacuation and fulguration of the prostatic fossa) within 30 days PO occurred in eight cases in the POH group only, none in the DCS group. No death occurred.
Conclusions : TURP using monopolar current can be safely performed as an outpatient day-care procedure for selected patients according to comorbidities, lack of intraoperative complication, and adequate social support at home. In a cohort of patients with comorbidities ranging from mild to severe and with a majority treated for chronic retention, no difference in the complication rate was found at 30 days between outpatient (DCS) and inpatient procedure (POH). We acknowledge this is a retrospective study with its inherent bias. While initially performed to reduce the admission rate imposed by bed limitations, this method appears feasible and safe for carefully selected patients. Access to ambulatory nurse's services from hospital discharged (bladder catheter irrigation, removal, advices, etc.) is of crucial importance.

Post-nephrectomy upstaging of cT1a renal tumor to pT3a: Is renal tumor biopsy a predisposing factor?

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Introduction : Many small renal masses (SRM) are unlikely to metastasize and should be managed with surveillance. Renal tumor biopsies (RTB) have been proposed as a tool to decrease overtreatment of SRMs. A potential concern of RTB is tumour seeding along the biopsy tract. The objective of this study was to evaluate whether preoperative RTB increase the risk of tumor upstaging to pT3a among patients with a SRM who underwent a radical or partial nephrectomy and whether it affects the risk of recurrence.

Méthodes : The Canadian Kidney Cancer information system (CKCis), a multi-institutional prospectively maintained database, was used to identify patients who underwent radical or partial nephrectomy for malignant cT1a renal tumor between January 1, 2011 and September 31, 2018. Rates of upstaging to pT3a and recurrence were compared between subjects that had a preoperative RTB and the ones that did not. A multivariable analysis was used to evaluate factors associated with upstaging and disease recurrence.

Résultats : The cohort consisted of 1793 patients, of which 423 (24%) had a preoperative RTB. There was no difference in the rate of tumor upstaging to pT3a between patients that had a RTB and those that did not (6.9% vs. 6.4%; p=0.8). On multivariable analysis, RTB was not associated with pathological upstaging (odds ratio [OR] 0.90; confidence interval [CI] 0.55–1.45; p=0.7) or recurrence (OR 1.19; CI 0.57–2.48; p=0.6). Nuclear grade >2 at surgery (OR 3.53; CI 1.85–6.74; p<0.001), radical nephrectomy (OR 2.96; CI 1.29–6.76; p=0.01), and age (OR 1.04; CI 1.02–1.06; p<0.001) were all associated with higher rate of upstage. T3a upstage was the only significant factor associated with disease recurrence (OR 6.74; CI 3.85–11.8; p<0.001).

Conclusions : In a large cohort of patients, RTB was not associated with increased risk of tumor upstaging or tumor recurrence. Hence, tumor tract seeding, although possible, should not be a clinical deterrent to using RTBs as a triage tool to decrease overtreatment of SRM.

Assessment of clinical and economic relevance related to the use of single-use digital flexible ureteroscopes: A systematic review

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Introduction : Ureteroscopy is a common, minimally invasive procedure that has changed endourology. Fiber-optic endoscopes have been replaced by digital endoscopes to counter structural limitations (limited visualization, fragility). Because durability remains an issue, recent studies have evaluated economic aspects of single-use flexible digital ureteroscopes in our daily practice. In this systematic review, we sought to assess whether use of single-use flexible digital ureteroscopes would be as effective and economic as reusable ureteroscopes.

Méthodes : We identified and reviewed 357 economic assessment publications about single-use flexible digital ureteroscopes. Publications included had a population of adults or children undergoing ureteroscopy for a diagnostic or therapeutic procedure. Conference summaries, advertising, or editorial materials were not included. Only five economic studies compared costs related to single-use vs. reusable flexible digital ureteroscopes. Conducted in tertiary or university referral institutions (U.S. or in Germany), data related to reusable ureteroscopes were collected between January 2013 and December 2016 prospectively or retrospectively[3] for an observation period varying from two weeks to four years. Single-use ureteroscopes were all from Boston Scientific (Lithovue), while reusable ureteroscopes used as comparators were optical, digital, or both. An approach based on a cost-minimization analysis was used based on the hypothesis of equivalence.

Résultats : The five economic studies published all suggest a similar efficacy and postoperative complication rate. Four out of five suggested a higher average estimated cost per intervention with Lithovue (single-use). Taguchi et al concluded an equivalence of costs by considering operating room time. Cost related to operating time has been included in only one study and showed an average of 20 minutes less per procedure by using a single-use flexible digital ureteroscope. On the other hand, damage rate with reusable ureteroscopes seems to be higher, but not statistically significant. Estimations based on data from our center demonstrated that with less than 11 ureteroscopies with Lithovue or 26 with Uscope per year, the average cost per intervention was lower with single-use ureteroscopes than with the reusable ureteroscopes. Despite these results, some factors, such as the different origin or country, the volume of ureteroscopy per center modulating the cost per case, methods used to calculate the inclusive cost for reusable ureteroscopes, or company influences, seem to influence the economic conclusions obtained from these studies,

Conclusions : Based on this systematic review, little evidence exist to support single-use flexible digital ureteroscopes. However, there is evidence of similar efficacy, but the economic aspect seems to be slowing their use. We would like to assess whether there might be a place for single-use digital flexible ureteroscopes in ours centers. By having a high volume of ureteroscopies per year (n=1022, CHU de Québec in 2017–2018), using only single-use ureteroscopes would be too expensive, hence, the idea of targeting a study population of patients requiring an ureteroscopy at higher risk of material damage or technically harder. The next step would be a prospective, randomized, clinical trial to assess three different arms (reusable, Lithovue, Uscope) and determine whether there would be economic and efficacy benefits.

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Cost of managing metastatic bladder cancer with the introduction of immunotherapies from a Canadian healthcare perspective

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Introduction: The development of immunotherapies (IOs) for the treatment of bladder cancer in first- and second-line, namely pembrolizumab and atezolizumab, increased the economic burden of this disease. We aimed to use an economic model to compare the additional cost when IOs are included in treatment algorithm of metastatic bladder cancer.

Méthodes : The model evaluated overall survival (OS), progression-free survival, and costs associated with each drug, as well as adverse event (AE) treatment; monitoring; and post-progression (third-line treatment, best supportive care [BSC]). Efficacy, safety, and treatment duration were estimated from regimens' pivotal clinical trials. The model included first-line gemcitabine-cisplatin (Gem-Cis), gemcitabine-carboplatin (Gem-Carb) or IOs in Cis-ineligible patients and high PD-L1 expression, and second-line IOs, Gem-Carb, paclitaxel, or docetaxel. Cost of BSC and AEs was retrieved from published Canadian studies. Sensitivity analyses were conducted to take in consideration potential rebates to IOs in hospital.

Résultats : The cost of treating patients with Gem-Cis in first-line was estimated to be $16 339, with 53% of cost related to the management of AE. When treating patients in the second-line setting, the incremental survival of pembrolizumab and atezolizumab compared to paclitaxel/docetaxel were 3.3 and 4.1 months, respectively. Treatment with second-line therapy costs $64 207, $54 857, $14 119 and $14 154 for pembrolizumab, atezolizumab, paclitaxel, and docetaxel, respectively. Managing AE represented less than 1% for IOs and 10% of the associated total costs for paclitaxel/docetaxel. In Cis-ineligible patients, the use of first-line IOs increased cost by $47 818 (total $72 596) vs. Gem-Carb, while improving OS by 6.6 months.

Conclusions : In a Canadian setting, inclusion of IOs for treatment of metastatic bladder cancer in first- or second-line will increase treatment cost by approximately $50 000 for an incremental survival of 3–6 months.

L'expression de IKKε est associée avec un mauvais pronostic pour les patients atteints d'un cancer de la prostate

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Introduction : Le cancer de la prostate, le plus fréquemment diagnostiqué, est la troisième cause de mortalité liée au cancer chez les hommes au Canada. La prise en charge de ces patients varie énormément. Il est donc nécessaire de fournir des biomarqueurs fiables pour stratifier avec précision ces patients en vue d'un traitement optimal. I-kappa-B-Kinase epsilon (IKKε) un membre de la famille des protéines IKK, est impliqué dans l'activation de la voie des interférons. Cette kinase a été identifiée comme un oncogène et la dérégulation de son expression serait associée à la progression du cancer la prostate en établissant un état inflammatoire chronique connu pour favoriser le développement du cancer. L'objectif de ce projet est d'analyser son expression par immunofluorescence, dans les cellules bénignes et tumorales du cancer de la prostate, et déterminer son impact sur le pronostic des patients.

Méthodes : L'immunofluorescence a été faite sur des micro-étalages tissulaires (TMA) d'échantillons issus de prostatectomie radicale provenant de 250 patients dont 77 patients ont subi une rechute biochimique (BCR) et 11 patients ont développés des métastases osseuses. Ce TMA contenait deux carottes de tissus bénins et trois carottes de tissus cancéreux par patient. La quantification de l'expression de IKKε a été faite de façon semi-automatique via le logiciel VisiomorphDP. La corrélation avec les données cliniques des patients a été établie avec le logiciel SPSS.

Résultats : Les analyses statistiques n'ont pas montré d'association significative entre l'expression de IKKε dans les carottes bénignes et la BCR des patients. Dans les carottes tumorales, l'analyse statistique a montré qu'une faible expression de IKKε est associée avec un bon pronostic pour la rechute biochimique BCR des patients (Log rank=7.402, p=0.007). Dans un modèle de régression de Cox univarié, une augmentation de l'expression de IKKε a montré une association significative avec l'augmentation du risque de BCR en utilisant les valeurs continues et dichotomisées (p=0.023 et p=0.009, respectivement). De plus, le modèle de régression de Cox multivarié a mis en évidence que IKKε est un biomarqueur indépendant des paramètres cliniques (p=0.006).

Conclusions : Notre approche de marquage permet de comparer quantitativement l'expression de biomarqueurs dans un microenvironnement tumoral, afin de fournir suffisamment de données pour la sélection et la validation de biomarqueurs. En étudiant cette kinase, nous avons mis en évidence son potentiel pour discriminer les patients à haut et à faible risque de rechute biochimique. Actuellement, la validation de cette étude est en cours sur une large cohorte multicentrique de 1262 patients.

Statins are associated with reduced overall and disease specific mortality in patients undergoing radical cystectomy for bladder cancer

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Introduction : Statins have been associated with better cancer outcomes, but the topic remains poorly studied in bladder cancer (BC). We studied statin use in a large cohort of BC patients undergoing radical cystectomy (RC).

Méthodes : Using provincial health administrative databases, we retrospectively identified all BC patients undergoing RC in Quebec from 2000–2015 and collected data from two years before RC until December 2016 or death. We compared patients who chronically used statins before RC to those who never used statin. Survival analyses were conducted using Kaplan-Meier curves, log-rank tests, and Cox proportional hazards models. Covariates in multivariable analyses were age, sex, Charlson's comorbidity index, year of RC, distance to hospital, hospital type (academic), hospital's and surgeon's annual RC volume, and neoadjuvant chemotherapy.

Résultats : Our cohort contained 1406 chronic statin users and 1754 never statin users. Five-year overall, BC-specific, and recurrence-free survival rates were 40.5% (95% confidence interval [CI] 37.8–43.2), 52.8% (95% CI 49.8–55.7), and 50.1% (95% CI 47.2–53.0) for chronic statin users vs 34.9% (95% CI 32.5–37.2), 45.5% (95% CI 42.9–48.1), and 43.4% (95% CI 40.9–45.9) for never statin users (p≤0.001). In multivariable analyses, hazard ratios (HR) for death, BC-specific deaths, and recurrences were 0.83 (95% CI 0.75–0.91), 0.81 (95% CI 0.72–0.91), and 0.83 (95% CI 0.74–0.93) for chronic statin users, respectively. Similar observations were made when selecting patients with diabetes and/or cardiovascular comorbidities (p≤0.001). Clinical outcome was not improved in patients who started statins in the year following surgery compared to never statin users (p>0.4).

Conclusions : Chronic statin use improved clinical outcome in BC patients undergoing RC in Quebec.

Eighteen years of holmium laser enucleation of the prostate: A single-center experience

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Introduction : We aimed to report our experience with long-term outcomes of the holmium laser enucleation of the prostate (HoLEP) procedure over a period of 18 years.

Méthodes : A review was performed of a prospectively collected database (March 1998 through June 2016) for patients undergoing HoLEP for symptomatic benign prostatic hyperplasia (BPH) performed or supervised by a single expert surgeon. Demographic and perioperative data were collected including the International Prostate Symptoms Score (IPSS), quality of life (QoL), peak flow rate (Qmax), post-void residual urine (PVR), and prostate-specific antigen (PSA). In addition, perioperative and late adverse events were also assessed.

Résultats : After a median followup of 9.1 years, 1476 patients were included with a mean age of 70.7 years. The mean catheter time and hospital stay were 1.2 and 1.3 days, respectively. IPSS (15.9±6.5 vs. 6.8±5.6; p<0.001) and QoL (3.1±1.4 vs. 1.5±1.4; p<0.001) scores were both significantly improved after HoLEP when compared to preoperative values. Likewise, Qmax and PVR were significantly improved (7.2±4.0 vs. 17.7±10.4 mL/sec; p<0.001 and 204±258 vs. 43± 73 Ml; p<0.001) for 132 patients who could be followed over 10 years. Perioperatve blood transfusion was required in 0.8% of patients. PSA values were significantly reduced by 66.7% at the most recent followup (p<0.001). Postoperative complications included urethral stricture and bladder neck contracure in 21 (1.4%) and 30 (2.1%) patients, respectively. Re-do HoLEP was required in 21 patients (1.4%).

Conclusions : HoLEP is a safe, effective, and durable procedure for treatment of BPH over long-term followup.

L'inhibition de IKK par le BX795 induit un arrêt du cycle cellulaire et une instabilité génomique conduisant à la senescence des lignées du cancer de la prostate resistantes à la castration

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Introduction : Le cancer de la prostate (CaP) est la troisième cause de mort par cancer chez l'homme au Canada. Le CaP évolue d'un état hormosensible (HS) vers un état résistant à la castration (CR). Nous avons précédemment montré que les lignées cellulaires CR surexpriment constitutivement IKKequi est impliqué dans la sécrétion d'IL-6 via l'activation de C/EBP-b, lui-même lié au phénotype de sénescence après thérapie de déprivation à l'androgène (ADT). Nous émettons l'hypothèse que l'expression de IKKea un rôle dans la progression du CaP en prévenant l'entrée en sénescence induit par ADT.

Méthodes : Nous avons utilisé le BX795 comme inhibiteur de l'activité kinase du complexe IKKe/TBK1, effet que nous avons validé en suivant l'inhibition de la phosphorylation de IRF-3 (cible du complexe) dans nos modèles de CaP. L'inhibition de IKKediminue la prolifération des lignées CR comparé aux lignées HS (Incucyte, edU) et induit la mort cellulaire (FACS). Après traitement, la taille des cellules CR augmente. Par conséquent, nous avons testé si les cellules entrent en sénescence en réponse au BX795.

Résultats : L'activité SA-b-Galactosidase est augmentée dans les lignées CR, phénomène accompagné d'une augmentation des CDKi p15 et p21 et les foci gH2.AX, signe de dommages à l'ADN. Après 6 jours de traitement au BX795, les cellules CR restent bloquées en phase G2/M du cycle cellulaire. De plus, nous avons observé un pool de cellules ayant un contenu anormal en ADN puisqu'elles possèdent 8 copies d'ADN. Ce phénomène est généralement traduit par une polynucléation que nous avons mis en évidence par marquage par le DAPI. Nous avons pu également voir que les lignées CR ont une augmentation des micronuclei après 6 jours de traitement au BX795, signe d'une instabilité génomique. Finalement, la croissance tumorale des xénogreffes DU-145, *in vivo*, a été diminué lors du traitement au BX795.

Conclusions : Cette étude permet de montrer qu'un traitement par le BX795, inhibiteur potentiel de IKKe, entraine une anomalie du cycle cellulaire, dans les cellules CR. Ainsi, les cellules vont arrêter de proliférer et bloquer en phase G2 du cycle cellulaire. Mais la cellule continue de répliquer son ADN, avec une accumulation de dommages à l'ADN. Cela entraine un phénotype de sénescence.Cette étude permet une meilleure compréhension de IKKedans la progression du cancer de la prostate, notamment dans l'apparition d'un état de CR. Ces résultats nous prouvent le potentiel de IKKe comme cible thérapeutique.

Perceived financial burden of prostate cancer in a Québec remote region

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Introduction : Canadian prostate cancer patients do not pay out of pocket for doctor visits or surgical and radioactive treatment received in hospital because of publicly provided healthcare. However, these patients can still experience costs stemming from travels to treatment and followup visits, accommodations, purchase of prescription and over-the-counter drugs, and consultation with different health professionals, such as psychotherapists. Out-of-pocket costs incurred because of prostate cancer, and patients perceived financial burden, may represent important adverse consequences of this disease. However, we lack information about the extent of this burden in the context of the Canadian province of Québec and its remote regions. The objectives of this study were to: 1) describe prostate cancer-related out-of-pocket costs and patients perceived financial burden; and 2) identify clinical and sociodemographic factors associated with such a burden among prostate cancer patients living in a remote region of Québec.

Méthodes : A cross-sectional study was conducted between November 2017 and April 2019 with a sample of 171 prostate cancer patients who consulted at the outpatient clinic of Rouyn-Noranda hospital (Abitibi-Témiscamingue remote region). Prostate cancer-related direct medical and non-medical costs incurred by patients were measured using a paper-and-pencil self-administered questionnaire (three-month recall). Costs were measured in Canadian dollars. Clinical and sociodemographic factors associated with perceived financial burden were explored using a multivariable logistic regression and included: diagnosis anteriority, prostate-specific antigen (PSA) levels, grade and stage of cancer (collected from medical records), and patient-reported variables (such as quality of life, age, education level, professional status, annual household income, area of residence and insurance status).

Résultats : Patients' mean age was 68.73 years (standard deviation [SD] 7.28); 75.4% were retired, 51.5% reported an annual household income below $40 000, and 28.1% had private drug insurance. On average, patients had been diagnosed with prostate cancer for 4.11 years (SD 3.73, 1–20). The majority of patients (83.04%) have incurred out-of-pocket costs for their cancer care. The mean total cost incurred in the last three months was $517 (SD $1030; median: $139), which can be translated to $2065 in annual costs. The three most important cost components were: 1) travel for medical visits (mean $334; SD $805; median $77), followed by prescription drug costs (mean $82; SD $244; median $0) and accommodation for medical visits (mean $29; SD $186; median $0). When asking patients if out-of-pocket costs incurred during the last three months for the treatment of their cancer represented a burden, 22.2% reported a significant burden (somewhat of a burden 12.3%; significant burden, but manageable 7%; significant burden, difficult to manage and stressful 1.8%; unmanageable burden 91.2%). Multivariable analysis revealed that having an income between $40 000 and $79 999 (vs. ≤$39 999; odds ratio [OR] 0.177; 95% confidence interval [CI] 0.042–0.740), higher out-of-pocket costs (OR 1.001; 95 %CI 1.001–1.002), having private drug insurance (vs. public; OR 4.429; 95% CI 1.025–19.144), and poorer physical health-related quality of life (OR 0.952; 95% CI 0.913–0.994) were associated with greater perceived financial burden.

Conclusions : The majority of prostate cancer patients incur cancer-related out-of-pocket costs regardless of diagnosis anteriority and the perceived burden is significant. Greater attention should be paid to the development of services to help patients manage their prostate cancer economic burden. Such solutions could be tailored to patients' income and drug insurance plan.

The relationship between overactive bladder and obstructive sleep apnea in a Canadian community-based population

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Introduction : Obstructive sleep apnea syndrome (OSAS) is associated with hypoxia, cardiovascular complications, and metabolic syndrome, all of which have been linked to overactive bladder syndrome (OAB) and erectile dysfunction. Considering a possible common pathophysiology between OSAS and OAB, we aimed to identify the prevalence of OAB symptoms among patients with OSAS, and to describe the relationship between OSAS, OAB, and erectile dysfunction in a community-based population of Canadian men.

Méthodes : This is a cross-sectional study of 988 male participants of the Men's Health Day organized by McGill University (Montréal, Canada) during three consecutive years (2013–2015). Participants underwent clinical evaluation (including demographic and metabolic profile), provided urine analysis and blood sampling (testosterone levels), and completed validated questionnaires of sexual health inventory (Sexual Health Inventory for Men [SHIM] and Androgen Deficiency in Aging Males [ADAM]) and lower urinary tract symptoms (OAB-V8 and International Prostate Symptom Score [IPSS]). Berlin questionnaire was also completed to classify participants into high and low risk of OSAS. Patients with persistent and frequent symptoms in any two of three domains were considered to be at high risk for sleep apnea. Patients with total OAB-V8 score ≥8 were considered to have OAB.

Résultats : A total of 988 men with a mean age of 55 (±12.8) years were included in the study. The prevalence was 22.8% for OSAS, 36% for OAB, 50% for erectile dysfunction (mild to severe), and 60% for androgen deficiency. The high-risk OSAS group demonstrated significantly higher body mass index (BMI), blood pressure, triglycerides, and OAB-V8 score, while their testosterone level was significantly lower than the low-risk group. The incidence of diabetes mellitus, hypogonadism (ADAM), and severe lower urinary tract symptoms (IPSS) were also higher among the high-risk group. The OAB-V8 score positively correlated with age (r=0.234), IPSS score (r=0.721), and Berlin score (r=0.111). SHIM score inversely correlated with OAB score (r=-0.263), IPSS (r=-0.259), and age (r=-0.418).

Conclusions : Higher risk of OSAS appears to be associated with metabolic syndrome, OAB, and lower testosterone level. Severity of erectile dysfunction correlated with severity of symptoms of OAB syndrome but showed no association with OSAS.

Ex-vivo tumor-derived 3D model to study PARPi response in prostate cancer

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Introduction : One-quarter (25%) of castrate-resistant prostate cancer patients have a mutation in BRCA1/2, ATM, or other homologous recombination repair (HR) genes. Approximately 40% of these patients respond to PARP inhibitors (PARPi), thus the prediction of patient response to PARPi can be done by adapting our ex-vivo tumor-derived model to study patient sensitivity profile and their DNA repair efficiency.

Méthodes : Micro-dissected tissues (MDTs) of ~400 µm in diameter are derived from prostate cancer cell line xenografts (LNCaP, 22RV1, C4-2B, DU145, and PC3), cultured and exposed to olaparib (0, 1, 10, and 100 nM for 96 hours) in microfluidic devices (containing a total of 32 MDTs). They are further analyzed immediately after the exposure time using a technique based on formalin fixed paraffin embedding of MDTs named MDT-micro array (MDTMA) to monitor MDT viability (cleaved caspase-3), proliferation (Ki-67), epithelial composition (CK 8/18), and double-stranded DNA breaks (γ-H2AX foci) by immunohistochemistry (IHC) and immunofluorescence (IF) techniques. MDTs were also exposed to gamma radiation (10 Gy) to identify homologous recombination (HR) repair efficiency by following the cells ability to form RAD51 foci using IF.

Résultats : Our 2D sensitivity profile characterization suggests a correlation between the status of hormone dependency and sensitivity to PARPi, as well as to their efficiency in repairing double strand DNA breaks. Basing our 3D analyses on our 2D characterization, we have identified a treatment regimen, consisting of a 96-hour exposure to olaparib to monitor various cell fates induced by the cytostatic drug, such as cell death, cell proliferation, and DNA damage. In addition, we have optimized the IF staining of our irradiated MDTs showing that we can reproduce the 2D HR response to gamma irradiation in a 3D setting.

Conclusions : This additional information will help dictate which patients would most likely benefit from this targeted treatment and would give insight on how to properly stratify patients according to molecular properties in a clinical decision-making timeframe.

Session scientifique VI
Vendredi 20 septembre 2019

L'évaluation de la performance de l'amniocentèse pour le diagnostic d'anomalies génétiques chez le fœtus avec une altération urologique isolée à l'échographie

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Introduction : L'hydronéphrose est l'une des anomalies les plus fréquemment détectée dans le dépistage prénatal. Cette étude a pour but de déceler une association causale entre les différentes anomalies génétiques et les altérations urologiques les plus fréquemment détectées lors des échographies prénatales. Deuxièmement, nous avons étudié la pertinence des techniques invasives comme l'analyse du caryotype et l'hybridation génomique comparative (CGH en anglais) lors de l'évaluation des trouvailles urologiques à l'échographie.
Méthodes : Entre 2004 et 2017, des données prospectives ont été collectées sur tous les patients et leurs fœtus ayant subi un caryotype ou un CGH (n=7688 et 643) suite à une anomalie échographique du deuxième ou troisième trimestre. Rétrospectivement, les données furent analysées. De ces patients, 205 avaient, au moins, une anomalie urologique à l'échographie prénatale.
Résultats : En analysant la cohorte de 205 patients avec une altération urologique à l'échographie, 15 anomalies génétiques ont été démontrées dont 14 pathogéniques (6,83%). De ces 14 anomalies, 8 proviennent du caryotype et 6 de l'hybridation génomique comparative (CGH). L'incidence des anomalies génétiques au caryotype était plus élevée chez les fœtus avec une agénésie rénale (16%) ou une mégavessie (8%) comparativement aux fœtus avec hydronéphrose (3%) ou maladie rénale kystique (0%). Chez les patients testés par hybridation génomique comparative, les résultats anormaux étaient plus fréquemment liés à l'agénésie rénale (16%) et la maladie rénale kystique (16%). Lorsqu'une malformation urologique était détectée, 48% des patients avaient une ou plusieurs anomalies supplémentaires détectées. Tous les fœtus avec une anomalie pathogénique au caryotype ou au CGH avaient plusieurs marqueurs suspects ou plus d'une anomalie échographique. Nous n'avons trouvé aucun désordre chromosomique ou génétique avec une anomalie urologique isolée comme l'hydronéphrose (n=37) ou la maladie rénale kystique (n=29).
Conclusions : L'amniocentèse est pratiquée pour tester le caryotype et l'hybridation génomique comparative. Cette technique présente des risques de 1% de fausses couches et des coût sociétaux non négligeables. Cette étude nous confirme que ces tests ne sont pas nécessaires chez les fœtus avec une hydronéphrose ou une maladie kystique rénale isolée. Cette conclusion pourrait éviter plusieurs procédures invasives et favoriser un suivi génétique non invasif.

Expression de GLUT1, GLUT12, et HK2 dans l'adénocarcinome de la prostate à haut risque, corrélation clinique avec la captation du fluorodeoxyglucose à la tomographie par émission de positons

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Introduction : Les cellules cancéreuses sont caractérisées par des altérations métaboliques qui soutiennent la croissance tumorale, dont la plus connue est la surconsommation de glucose. Cette caractéristique a été exploité en oncologie avec la tomographie par émission de positrons / tomodensitométrie (PET / CT) couplée à l'analogue du glucose ^{18}F-fluorodésoxyglucose (^{18}F-FDG) pour imager les cellules présentant un métabolisme accru du glucose. Chez les patients atteints d'un cancer de la prostate de haut risque, la ^{18}F-FDG-PET/CT s'est avérée être un outil pronostic de la progression tumorale. La captation cellulaire du ^{18}F-FDG repose sur les transporteurs membranaires du glucose (GLUT) et son accumulation intracellulaire s'opère suite à sa phosphorylation par les hexokinases (HK). Il a été démontré que la captation du ^{18}F-FDG dans certaines néoplasies non-urologiques est associée aux GLUT, mais les données de la littérature demeurent limitées dans le cancer de la prostate. Les objectifs de cette étude sont 1) de déterminer si l'expression de GLUT1, GLUT12 et HK2 est corrélée à la captation du^{18}F-FDG et 2) d'étudier l'association entre l'expression de ces marqueurs et les facteurs pronostiques cliniques et pathologiques du cancer de la prostate ainsi que les indicateurs de survie.
Méthodes : Une analyse rétroprospective a été effectuée chez 93 patients ayant reçus un diagnostic d'adénocarcinome de la prostate à haut risque (Gleason≥8) à la biopsie et subi une imagerie ^{18}F-FDG-PET/CT avant prostatectomie radicale entre 2011 et 2014. L'expression de GLUT1, GLUT12 et HK2 a été détectée par immunohistochimie sur des prélèvements de prostatectomie radicale. La captation intraprostatique du ^{18}F-FDG a été mesurée par la valeur d'absorption maximale normalisée (SUVmax). Les corrélations entre les marqueurs immunohistochimiques et le SUVmax ont été évaluées par le test de corrélation de rang de Spearman. Les probabilités de survie ont été estimées par la méthode de Kaplan-Meier.
Résultats : La médiane de suivi est de 4,5 ans, 56% (n= 2) des patients ont présenté une récidive biochimique (BCR), 7% (n=7) ont évolué vers un cancer de la prostate résistant à la castration (CRPC) et 6% (n=6) sont décédés. L'expression de GLUT1 est positivement corrélée à l'accumulation du ^{18}F-FDG (*p=0,0182), à l'évolution vers la CRPC (*p=0,0364) et à une plus courte survie sans CRPC après PR (HR=7,534, **p=0,0052). L'analyse de l'expression de GLUT12 et l'HK2 n'a pas révélé d'associations statistiquement significatives.
Conclusions : L'expression de GLUT1 est associée à la captation intraprostatique du ^{18}F-FDG. De plus, la GLUT1 est un facteur pronostique indépendant de survie sans CRPC chez les hommes atteints de cancer de la prostate à haut risque. Globalement, ces résultats suggèrent que le niveau d'expression de GLUT1 est un indicateur pronostique pertinent et une cible thérapeutique prometteuse dans le cancer de la prostate à haut risque.

Neutrophil extracellular traps: Players in radio-resistance of muscle-invasive bladder cancer

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Introduction : Radiotherapy influences and modifies diverse components of the tumor microenvironment and inflammation plays a pivotal role in modulating radiation responsiveness of tumors. During the acute phase of inflammation, neutrophils are first-line responders and can release decondensed chromatin and granular contents into the extracellular space forming neutrophil extracellular traps (NETs). NETs have been shown to

promote metastasis, facilitate tumor progression, and exhibit adverse effects in surgical stress. Recently, the protein HMGB1, a key player in radioresistance, has been found to be a component of NETs. HMGB1 can be passively released from dying tumor cells and mediates responses to injury and inflammation. In this study, we sought to investigate the impact of HMGB1 on NET formation and its relationship with radio-resistance.
Méthodes : Murine bladder cancer cell line MB49 were subcutaneously implanted into flanks of wildtype (C57BL/6) and NETosis deficient (PAD4-/-) mice. HMGB1 expression was modulated through intraperitoneal administration of glycyrrhizin (GLZ) and NETs were modulated through intramuscular injections of DNAse. Tumors were irradiated (2 x 5Gy) using the XRAD Smart Irradiator when they reached a volume of 0.15–0.20 cm^3. Tumor volumes were measured using a digital caliper till endpoint 1.5 cm^3.
Résultats : Our in vitro results demonstrate incubation of neutrophils with rHMGB1 significantly induced NETs formation compared to controls ($p<0.0001$) and this was reversed through addition of GLZ ($p<0.0001$). Similarly, co-culture of neutrophils with irradiated MB49 conditioned media induced NETs formation ($p=0.01$) and this effect was reversed with GLZ ($p=0.009$). Our in vivo results demonstrate a NETosis deficient mouse model treated with a HMGB1 inhibitor (PAD4-/- + GLZ) showed a decrease in tumor growth kinetics post-radiation compared to all other irradiated arms: C57BL/6, PAD4-/- and C57BL/6 + GLZ ($p=0.023$). Further, this group shows increased overall survival post-radiation ($p=0.0231$). In addition, a clinically relevant NETs depleted model (C57BL/6 + GLZ) also showed a delay in tumor growth kinetics post radiation ($p<0.0001$).
Conclusions : In the context of radiation, HMGB1 may induce radio-resistance via increasing NETs formation. Highlighting the role of HMGB1 in NET formation will provide valuable information on the responses that occur in the tumor microenvironment after radiation therapy.

The economic burden of renal cell carcinoma (RCC) in Canada using real-world evidence: A societal perspective

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Introduction : Kidney cancer is placed third in urological cancers in Canada, right behind prostate and bladder cancer. Many new therapeutic options are being developed in the metastatic phase mainly, but these innovations are being presented with high costs. This is supported by the development of newer immunotherapies that constantly addresses an unmet need. The objective of the current study is to establish clinical and economic outcomes of the current practice in RCC treatment in Canada post-nephrectomy.
Méthodes : A Markov model with microsimulation was developed to estimate the cost of followup and treating patients from post-nephrectomy up to diagnosis of metastatic RCC and death from any cause. The model included five health states: active surveillance, local recurrence, metastatic RCC, death from RCC, or death from other causes. Probabilities were adjusted by taking in consideration patient characteristics such as TNM staging, and most estimates were extracted from real-world evidence studies assessing the survival of RCC and mRCC patients. Costs were extracted from available literature. Deterministic sensitivity analysis was conducted to account for uncertainty on different parameters by varying parameters by 25%.
Résultats : Mean survival (± standard deviation [SD]) was evaluated to be 15.56±5.69 life years (LYs) for T1 tumors, 13.22±5.68 LY for T2, 12.22±5.52 LY for T3, and 14.85±5.71 LY for the weighted average of the three stages. The weighted mean and median total cost of the disease amounts to $107 811.22 and $48 992.33, respectively over a 20-year time horizon. In the weighted average scenario, the mRCC state costs represented the main burden, at around 40.3% of total cost. The local recurrence, active surveillance, death, and kidney-cancer related death states respectively represented 27.2%, 23.8%, 8.6%, and 0.1%.
Conclusions : The economic burden of mRCC is increasing with the severity of the disease. The results given in the present work are preliminary and constitute the groundwork for future studies that need to be done integrating newer treatment options in the management of RCC.

Role of routine biopsy after radiation-based therapy for muscle-invasive bladder

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Introduction : Radiation-based therapy (RT) has emerged as a suitable organ-sparing treatment for muscle-invasive bladder cancer (MIBC) patients who refuse radical cystectomy or are medically unfit to undergo surgery. According to most guidelines, a biopsy after RT is recommended to rule out persistent or residual disease after treatment. Our objective was to analyze the correlation between cystoscopic findings and histology after routine biopsy in the assessment of response post-RT and its effect in overall survival.
Méthodes : This was a retrospective study on patients treated with curative-intent RT for MIBC at our institution between 2001 and 2017. Results from cross-sectional imaging, cystoscopy, urine cytology, and biopsy were collected from patient charts, and descriptive analysis was performed.
Résultats : After exclusion criteria, 158 patients were analyzed. Median age was 75 years (43–91). Stage repartition was 142 (90%) cT2, 12 (8%) cT3, and four (2%) cT4. RT was delivered with concurrent chemosensitizer in 148 (93%). Post-treatment cystoscopy and cytology were normal in 132 (84%) patients. Overall, 55 (42%) had a control biopsy in the setting of normal cystoscopy/cytology, with residual MIBC in three (5%), NMIBC in six (11%), and benign histology in 46 (84%). Cystoscopy and/or cytology were positive in 26 (16%) and, out of 19 biopsies in this group, nie (47%) were negative.
Conclusions : We demonstrated that when residual disease is suspected, pathology can be benign in up to 47% of biopsies, while up to 5% of patients will have residual invasive disease despite normal cystoscopy and cytology. A systematic routine biopsy after RT is, therefore, recommended to assess response in patients who are surgical candidates regardless of findings on cystoscopy and urine cytology. Larger multi-institutional studies are needed to validate these findings.

Liens entre la consommation d'acides oméga-3 et l'incidence du cancer de la prostate : Résultats préliminaires de l'étude BIOCAPPE-GRéPEC

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Introduction : Le cancer de la prostate (CaP) est un problème de santé majeur dans le monde entier, mais plus fréquent dans les pays développés, notamment au Canada. Les acides gras oméga-3 (ω3) font partie des facteurs alimentaires susceptibles d'influencer le risque de CaP. Malgré quelques études observationnelles controversées, les études précliniques et cliniques suggèrent fortement qu'une consommation élevée en ω3 aurait des effets protecteurs sur le développement et la progression du CaP. Cette étude préliminaire vise à explorer les associations entre l'incidence du CaP et le niveau d'ω3 mesuré dans la diète et en circulation chez des hommes à risque de CaP.
Méthodes : Nous conduisons présentement une étude de cohorte prospective multicentrique afin d'évaluer le rôle des habitudes de vie sur le risque de CaP chez des hommes à haut risque de développer un CaP (étude BioCaPPE_GRéPEC). À l'entrée dans l'étude, la consommation en ω3 est évaluée par un questionnaire de fréquence alimentaire validé. Leur niveau en circulation est mesuré dans la membrane des globules rouges par chromatographie. L'incidence du cancer est évaluée à deux ans de suivi. Les associations préliminaires entre les ω3 et l'incidence du CaP ont été déterminées par régression logistique multivariable.
Résultats : Parmi les 239 premiers participants, 34% ont été diagnostiqués avec un CaP à deux ans. La consommation moyenne d'ω3 était de 2.05g/j

(±1.04). Nous avons observé une tendance d'association inverse entre l'incidence du CaP et le niveau d'ω3 à longues chaines mesuré dans les globules rouges (RC 0.80, $IC_{95\%}$0.52–1.25; p=0.34) et dans la diète (RC 0.78, $IC_{95\%}$0.30–2.01, p=0.61). Nous avons également observé une tendance d'association positive, entre le ratio ω6/ω3 dans les globules rouges (RC 1.10, $IC_{95\%}$0.76–1.60, p=0.62) et l'incidence du CaP.
Conclusions : Ces résultats préliminaires suggèrent l'existence d'un lien potentiel entre l'incidence du CaP et la consommation en ω3. Des analyses plus approfondies dans la cohorte entière comptant plus de 2500 participants sont garanties.

Projet BIOCAPPE-GRéPEC : sous-etude du lien entre l'activité physique de loisirs et le taux d'IGF-1/LDL-ox dans une cohorte d'hommes a risque élevé de cancer de la prostate

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Introduction : Au Canada en 2017, 58 hommes ont reçu un diagnostic de cancer de la prostate (CaP). L'activité physique (AP) est en partie associée au risque de CaP. Bien qu'encore mal défini, ce lien impliquerait la modulation de certains biomarqueurs tels que l'*insulin-like growth factor-1* (IGF-1) et les lipoprotéines de basse densité oxydées (LDL-ox). Nous croyons par exemple que le taux d'IGF-1 et/ou LDL-ox pourrait être associé à l'AP et pourrait servir de biomarqueur de risque du CaP. L'objectif de cette étude transversale est d'analyser le lien entre l'activité physique de loisirs (APL) et les taux d'IGF-1 et de LDL-ox en circulation dans une cohorte d'hommes à risque de CaP.
Méthodes : Des hommes à haut risque de développer un CaP participent à une étude observationnelle prospective multicentrique (BIOCaPPE_GRéPEC) visant à évaluer le rôle des habitudes de vie sur le risque de CaP. Au début de l'étude, nous avons mesuré le score d'APL avec le questionnaire validé *Godin-Leisure-Time Exercise*. Les taux d'IGF-1 et de LDL-ox ont été mesurés dans le plasma par la méthode ELISA. Les liens entre l'APL et les taux d'IGF-1/LDL-ox ont été évalués par régression linéaire.
Résultats : L'âge moyen des 1067 premiers participants était de 63 ans (±7 ans). Les taux moyens d'IGF-1 et de LDL-ox étaient respectivement de 110 ng/mL (±30) et 69,43 U/L (±20). La majorité des participants étaient actifs (n=743, 69,6 %). Le modèle multivarié ajusté pour l'âge, l'alcool, l'indice de masse corporelle, l'état de santé auto-rapporté, la scolarité et le statut marital montre que les participants inactifs ont un taux plus élevé d'IGF-1 comparativement aux participants actifs ($\beta_{IGF\text{-}1}$=-4.73, $IC_{95\%}$[-8.86;-0.60], p=0.02) et une tendance (non significative) d'un taux plus élevé de LDL-ox (β_{oxLDL}=-1,10, $IC_{95\%}$[-4,18; 1,97], p=0.48).
Conclusions : Le taux d'IGF-1 est inversement associé à l'activité physique de loisirs chez les hommes à risque élevé de CaP. Nos résultats suggèrent que l'IGF-1 est un biomarqueur potentiel pour la stratification du risque du CaP. L'IGF-1 pourrait aussi être un facteur intermédiaire à considérer dans les études épidémiologiques.

Session scientifique IX
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Management of neurogenic lower urinary tract dysfunction and impact on quality of life in spinal cord injuries in Canada

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Introduction : Management of neurogenic lower urinary tract dysfunction (NLUTD) following spinal cord injury (SCI) represents an incredible economic burden on the healthcare system and quality of life. Therefore, we aimed to identify the impact of NLUTD and related management strategy on quality of life in a SCI population from a Canadian societal perspective.

Méthodes : This is a retrospective, multicenter study analyzing the database registry of 198 adult patients with traumatic SCI who received urological care at Rick Hansen participating facilities in Montréal, Canada from 2010–2017. Participants underwent clinical evaluation, including demographic and injury profile based on the American Spinal Injury Association Impairment Scale (ASIA). Patients provided urine analysis and completed validated questionnaires of General Self-Efficacy Scale (GSE), and pain inventory. Functional state of patients was evaluated by using the Spinal Cord Independence Measure (SCIM). Patients also described their bladder management method over the long-term.

Résultats : A total of 155 men and 43 women with a mean age of 53 (±18.5) years were included in the study. The etiology of lesion was traumatic falls in 98 (50%) patients and transport related injury in 43 (22%) patients. Mean time since injury was three (±8.3) years. Most of these SCIs were incomplete motor by the ASIA classification. The prevalence of urinary tract infection (UTI) was 42%. The method of bladder management at followup was normal voiding in 73 (49%), intermittent self-catheterization (ISC) in 52 (35%), catheterization by attendant in four (3%) and indwelling catheterization in 19 (13%). Patients with UTI had significantly less total SCIM score and subscales scores ($p<0.001$). Analysis of bladder management method in relation to quality of life parameters revealed ISC and normal voiding groups had significant higher SCIM and GSE scores compared to other groups.

Conclusions : The most common bladder management methods were normal voiding and ISC. Bladder management strategy and UTI had substantial impact on long-term ability of SCI patients to perform basic activities independently. The use of ISC can provide optimal management and better long-term quality of life in selected SCI patients.

Overexpression of circulating AR-FL and AR-V7 transcripts in prostate cancer

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Introduction : Prostate cancer (PCa) ranks first in incidence among cancers in Canadian men and third for cancer-related deaths. Endocrine therapies are the gold standard for patients with a locally advanced and metastatic disease, the goal being to repress androgen synthesis and inhibit androgen receptor (AR) signaling and transcriptional activity at the promoter gene level. Almost all patients benefit from androgen-deprivation therapy (ADT) at first. However, they eventually all fail, become castration-resistant (CRPC), progress to the metastatic stage, and die from androgen-independent PCa. AR signaling remains functional at all stages of PCa. Among mechanisms explaining ADT resistance and further progression are overexpression of the full-length AR (AR-FL) protein, along with co-expression of constitutively active splice variants, like AR-V7, lacking the ligand-binding domain. Of interest, circulating AR-V7 transcripts appear to predict resistance to AR-based therapies. Therefore, its early detection in the blood of patients could improve the management of the disease. We aimed to develop and optimize assays to assess the expression of AR-FL *and* AR-V7 as circulating transcripts in PCa patients at specific stages of disease.

Méthodes : Quantitative real time (RT-q) PCR assays were optimized using RNA from LNCaP and 22Rv1 cell lines. To next calibrate assays and compare gene expression levels, 22Rv1 cells were spiked at increasing number (5–2000 cells) into the blood of healthy volunteers prior to RNA extraction. Tests were carried out using blood RNA of 10 healthy control males to detect basal expression, which was next used for normalization. Blood was collected from consented patients, consisting of 40 advanced mCRPC cases and 10 high-risk cases at diagnosis. The two transcripts were also tested using serial blood collections obtained from a patient, from diagnosis till death.

Résultats : The mCRPC cohort was studied at first. The AR-FL transcript was overexpressed in one of 40 patients, while AR-V7 was detected in nine of them. Subsequent tests were performed on the 10 high-risk cases at time of diagnosis. Analyses revealed overexpression of AR-FL, at varying levels, in the blood of all cases. However, AR-V7 was only detected in two cases and at a low level. Preliminary results from the longitudinal study carried out on serial blood samples of a patient who died from PCa showed AR-FL overexpression from time of diagnosis, with fluctuating levels after BCR and reaching highest levels under ADT. Of interest was the lack of AR-FL expression when reaching the CRPC stage and during further progression. In contrast, AR-V7 was not detected in this patient until he had reached the scond-line abiraterone therapy after reaching the mCRPC stage. Furthermore, the AR-V7 transcript levels further increased and were highest when the patient was on the third-line taxane therapy.

Conclusions : This proof of concept pilot study confirms that the testing of specific circulating transcripts during a patient's trajectory is feasible, with modulated expression of particular trabscripts, such as AR-FL and AR-V7 at specific time points. Such analyses of the two genes in parallel, powered by patient data may provide useful information, aiding clinicians to better stratify patients and offer optimal therapies in view of precision medicine.

Patient, tumor, and surgeon factors predicting the use renal tumor biopsy among Ccanadian urologists

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Introduction : The role renal tumor biopsy (RTB) in the management of small renal masses (SRMs) is progressively being recognized. While an increasing number of studies assessing its role as a diagnostic tool are becoming available, the use of RTB remains variable among patients diagnosed with a SRM. Many patient-, tumor-, and institution-related factors may influence urologists on whether to perform a RTB to help guide management. We aimed to identify factors associated with the use of RTB in the Canadian population diagnosed with a localized SRM.
Méthodes : Data from the Canadian Kidney Cancer information system (CKCis) from 2694 patients diagnosed with a localized SRM (≤4 cm) between January 2011 and September 2018 were retrospectively reviewed. Patients were stratified based on whether a RTB was performed prior to the primary therapeutic intervention (nephrectomy, thermal ablation, or active surveillance). Factors such as patient age, body mass index (BMI), race, smoking history, family history of kidney cancer, American Society of Anesthesiologists (ASA) class, Eastern Cooperative Oncology Group (ECOG) score, lesion size, year of diagnosis, and patient-volume at the referring center were analyzed as factors associated with RTB use. Univariable and multivariable logistic regression models were used.
Résultats : A total of 642 patients (23.8%) underwent RTB. Patients who underwent RTB were generally younger, non-Caucasian, and had higher ASA scores. Among all patients, higher BMI and a more recent diagnosis were associated with a greater use of RTB on univariable regression models, while only ECOG score >1 was associated with a greater use of RTB on multivariable analysis (odds ratio [OR] 2.84; 95% confidence interval [CI] 1.59–5.08]). In patients undergoing nephrectomy, patients with ASA class 3 and 4 were also significantly more likely to have RTB prior to surgery than patients with ASA class 1, but this effect did not retain significance on multivariable analysis. In patients on active surveillance, younger age and greater mass size were associated with more RTB use on univariable analysis. There were no significant predictors of RTB in the thermal ablation group.
Conclusions : Among Canadian patients diagnosed with a SRM, some factors appeared to be associated with the use of RTB. ECOG score >1 was significantly associated with RTB use, suggesting a propensity for biopsy with poorer performance status, possibly with the purpose of avoiding a surgery for patients at greater risk of surgical complications. In patients on active surveillance, larger SRMs were unsurprisingly biopsied more frequently, and older patients underwent RTB less frequently, suggesting a trend for imaging-based followup in this patient population. Our findings provide important insight into patient, tumor, and surgeon factors influencing the use of RTB in Canada.

Bone mineral density testing in men initiating androgen-deprivation therapy for prostate cancer

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Introduction : Androgen-deprivation therapy (ADT) is a staple of advanced prostate cancer (PCa) treatment; however, several side-effects are associated with its long-term use. Notably, loss of bone mineral density (BMD) is accelerated which increases fracture risk. Guidelines recommend BMD testing when initiating ADT to properly assess baseline fracture risk. The objective of this study was to examine the proportion of BMD testing in men initiating long-term ADT in Québec.
Méthodes : The cohort consists of men extracted from Québec public healthcare insurance administrative databases who were diagnosed with PCa from 2001–2012 and treated by ADT. Only patients who received at least one year of continuous ADT treatment were included. The primary study outcome was the receipt of baseline BMD testing (defined as a BMD test identified from medical claims in the period from six months prior to and up to 12 months after ADT initiation). Multivariable logistic regression analysis was performed to identify variables associated with baseline BMD testing.
Résultats : We identified 7069 patients who initiated ADT at a mean age of 76 years during the study period, of which 887 (12.6%) underwent baseline BMD testing. Rates of baseline BMD testing varied by year of ADT initiation, from 7.7% in 2001–2003 to 13.3% in 2007–2009 and to 12.3% in 2013–2012. Following multivariable analyses, prior history of osteoporosis (odds ratio [OR] 2.64; 95% confidence interval [CI] 2.03–3.44; p<0.001) and prior history of bisphosphonates (OR 1.79; 95% CI 1.47–2.19; p<0.001) were associated with higher odds of baseline BMD testing. Later years of ADT initiation (2004–2006, 2007–2009, 2010–2012, 2013–2015) during the study period remained associated with higher odds of baseline BMD testing compared to the earlier years (2001–2003) (ORs ranging from 1.43–1.88; p<0.001). Conversely, patient age >80 (OR 0.73; 95% CI 0.57–0.94; p=0.001), greater Charlson comorbidity score (OR 0.51; 95% CI 0.34–0.75; p=0.001), and rural residence (OR 0.60; 95% CI 0.48–0.75; p<0.001) were associated with lower odds of baseline BMD testing.
Conclusions : In our study population, rates of baseline BMD testing in men initiating ADT are low, although the rates increased over the course of the study period. Potential gaps identified in baseline BMD testing include older, more comorbid patients, and patients living in rural areas. Overall, additional efforts emphasizing the importance of BMD testing in PCa guidelines may be needed.

Comparative effectiveness of abiraterone and enzalutamide in the post-chemotherapy setting in metastatic castration-resistant prostate cancer

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Introduction : Novel hormonal agents, such abiraterone (ABI) and enzalutamide (ENZA), have demonstrated survival benefits in the post-chemotherapy setting in metastatic castration-resistant prostate cancer (mCRPC). However, there are currently no randomized head-to-head comparisons of both agents. The objective was to compare the effectiveness of ABI and ENZA as second-line treatments in the post-chemotherapy setting in patients with mCRPC.
Méthodes : A retrospective population-based cohort was extracted from Québec public healthcare administrative databases. Patients were selected on the basis of having sequentially received androgen-deprivation therapy and chemotherapy prior to initiating a novel hormonal agent (ABI or ENZA) between 2012 and 2016. The index date corresponded to the date of the first prescription of ABI or ENZA. The primary outcome of interest was overall survival and evaluated with Kaplan-Meier analysis and multivariable Cox proportional hazards regression.
Résultats : The cohort is comprised of 621 patients, with 542 in the ABI group and 79 in the ENZA group. Median age at initiation was similar (ABI: 73, ENZA: 74; p=0.449). There were more patients in the ABI group with a time from last chemotherapy to index date <6 months (ABI 72.5%, ENZA 57.0%; p=0.005). Median duration of treatment was similar in both groups at six months (interquartile rage [IQR] 3–12; p=0.317). Median overall survival was 15.4 months in the ABI group and 17.9 months in the ENZA group (log-rank p=0.822). On multivariable analysis, the hazard ratio (HR) for ABI vs. ENZA was 0.98 (95% confidence interval [CI] 0.69–1.40; p=0.884). Age greater than 75 years (hazard ratio [HR] 1.40; 95% CI 1.16–1.69; p=0.001), Charlson comorbidity scores greater than 2 (HR 1.35; 95% CI 1.09–1.66; p=0.005), presence of symptoms (HR 1.66; 95% CI 1.37–2.00; p<0.001), time from prostate cancer diagnosis <3 years (HR 1.61; 95% CI 1.27–2.03; p<0.001), and time from last chemotherapy <6 months (HR 1.24; 95% CI 1.01–1.54; p=0.038) were associated with worse survival.
Conclusions : In our study population, there was no difference in overall survival between ABI and ENZA as second-line treatments in the post-chemotherapy setting in mCRPC. Further evaluation of both drugs using real-world data is necessary to assess differences in other health outcomes such treatment-related complications, as well as use of health services.