# Association des Urologues du Québec Congrès Annuel 2022 – Résumés

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## Session scientifique I
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### Performing urological inpatient procedures as same-day procedures during the COVID pandemic — a retrospective feasibility study

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**Introduction:** In line with Canadian provincial directives due to the COVID-19 pandemic, certain urological procedures that are normally performed as inpatient procedures were performed as same-day procedures to reduce the usage of healthcare resources. At our center during the pandemic, we began performing laser enucleation of the prostate (LEP), robotic-assisted radical prostatectomy (RARP), and percutaneous nephrolithotomy (PCNL) as outpatient surgeries. Recent literature has suggested that these procedures are safe and feasible as same-day surgeries. Our goal was to determine if there was a difference in patient outcomes in LEP, RARP, and PCNL patients operated as same-day surgery vs. inpatient.
**Methods:** Patients operated for LEP, RARP, or PCNL were studied between May 2020 to March 2022. Among LEP patients, 104 were identified as planned same-day procedures (PSD-LEP) and 65 were planned inpatient procedures (PIP-LEP). Among RARP patients, 46 were identified as planned same-day procedures (PSD-RARP) and 148 were planned inpatient procedures (PIP-RARP). AmongPCNL patients, 38 were identified as planned same-day procedures (PSD-PCNL) and 12 were planned inpatient procedures (PIP-PCNL). PSD patients were compared to PIP patients for all patient groups with primary outcomes being SD failure, 30-day complications, and readmission rates.
**Results:** General patient characteristics, such as age, American Society of Anesthesiologist classification, and Revised Cardiac Risk Index (RCRI) were similar between PSD and PIP in both patient populations. Of the PSD-LEP patients, 77.9% were successfully discharged the day of the surgery. The overall postoperative complication, 30-day ED visits, and readmission rates were 8.7%, 3.8%, and 1.0 %, respectively, for PSD-LEP patients vs. 23 % (p=0.017), 9.2% (p=0.27), and 4.6% (p=0.32), respectively, for PIP-LEP patients. Of the PSD-RARP patients, 73.9% were successfully discharged the day of the surgery. The overall postoperative complication, 30-day ED visits, and readmission rates were 15.2%, 17.4%, and 4.3%, respectively, for PSD-RARP patients vs. 6.1% (p =0.097), 4.1% (p <0.05), and 1.4% (p=0.51), respectively, for PIP-RARP patients. Of the PSD-PCNL patients, 71.1% were successfully discharged the day of the surgery. The overall postoperative complication, 30-day ED visits, and readmission rates were 21.1%, 7.9%, and 2.6 % respectively, for PSD-PCNL patients vs. 16.7% (p=1.0), 8.3% (p=1.0), 8.3% (p=1.0), respectively, for PIP-PCNL patients.
**Conclusions:** Same-day discharge for LEP, RARP, and PCNL is safe and feasible in select patients with an acceptable and comparable complication rate.

### Secondary malignancies after radiotherapy for prostate cancer: A population-based study

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**Introduction:** Survival of prostate cancer (PCa) patients has improved over time thanks to improvement of surgical and radiation therapy (RT) technics. Recent evidence has shown that receiving RT may predispose to secondary malignancies. This study aimed to assess the risk of secondary malignancies in men treated with RT and radical prostatectomy (RP). Those with evidence of bladder cancer (BCa) or colorectal cancer (CRCa) prior to PCa diagnosis were excluded.
**Methods:** A cohort study was constructed using Quebec administrative databases (Med-Echo and RAMQ). This included men being diagnosed and treated with RP or RT for PCa patients from 2000–2016. The outcomes of interest were the incidence of BCa and CRCa. Followup ended at the earliest of the following: incidence of BCa or of CRCa, death, or December 31, 2016. Patients inverse probability treatment weighting (IPTW) based on a propensity score was used to control for potential confounding. IPTW-Cox proportional hazards models were used to evaluate the associations between the initial PCa treatment (RT or RP) and the incidence of BCa and CRCa.
**Results:** The cohort consisted of 15 544 and 27 838 patients treated with external beam radiation therapy (EBRT) and RP, respectively, without androgen deprivation therapy. Among these, 118 and 95 patients presented evidence of BCa and CRCa, respectively, and were excluded for the analyses. Mean age was 70 years old in the RT group and 64 years old in the RP group. In the weighted cohorts, patients treated with RT exhibited a significant increased risk of CRCa (HR 1.27, 95% CI 1.13–1.43), and of BCa (HR 1.78, 95% CI 1.54–2.07) compared to men treated with RP.
**Conclusions:** Our study confirmed that men undergoing RT for PCa had an increased risk of secondary BCa and CRCa compared to patients undergoing RP.

### The association of cortical transit time with diuretic drainage time parameters in antenatal hydronephrosis

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**Introduction:** There are no clear criteria that define obstruction in the context of antenatal hydronephrosis (AHN). Diuretic renogram determines the differential renal function (DRF), T1/2, and global washout (GWO), and can assist clinicians in their assessment. Cortical transit time (CTT) is another parameter that can aid in decision-making in AHN. Our primary objective is to determine the association of various CTT cutoffs, alone or in combination with T1/2 and GWO, with patient management.
**Methods:** We retrospectively reviewed 296 charts. We included 64 consecutive pyeloplasties (treatment group), who presented from 2010–2021, and 44 conservatively managed AHN with diuretic renogram (conservative group) from 2010–2016. Excluded were 55 patients >12 months old and 133 patients with other urinary abnormalities/incomplete data. Initial

ultrasounds and MAG-3 diuretic renograms were reviewed. The Δ CTT between the affected and normal kidney was calculated. Chi-square/Fisher and t-tests were used for categorical and continuous data. We performed ROC curves to evaluate the correlation of different CTT cutoffs with T1/2 and GWO. P-value was significant if <0.05.
**Results:** The pyeloplasty group consisted of 64 patients and the conservative group of 44 patients. Initial median DRF in the pyeloplasty group was 46% and 51% in the conservative group. Patients with T1/2 <5 minutes had a median CTT of three minutes, those with T1/2 5–75 minutes had CTT of five minutes, and those with T1/2 >75 minutes had CTT of six minutes. A cutoff of >3 minutes for CTT had the highest sensitivity to pyeloplasty (79.7%) but poor specificity (54.6%) (p=0.0004). CTT >5 minutes had the best specificity (95.5%, p=0.0135). A cutoff for Δ CTT of ≥3 minutes had the highest specificity to pyeloplasty (97.7%). For T1/2, the cutoff with the highest area under the curve (AUC) on the ROC curves was CTT >5 minutes (AUC 0.84, p=0.0001) and Δ CTT ≥3 minutes (AUC 0.91, p=0.0001). For GWO, the best cut-ffs were the same: CTT >5 min (AUC 0.87, p<0.0001) and Δ CTT ≥3 minutes (AUC 0.91, p<0.0001).
**Conclusions:** The previously suggested cutoff of CTT >3 minutes is sensitive but not specific. We identify that initial CTT >5 minutes and the presence of a Δ CTT ≥3 minutes may represent indicators of severity for children presenting with AHN. These cutoffs may be useful for tailoring the frequency and severity of followup imaging and may be of benefit in counselling families.

## Swipe right on male infertility: Effect of cell phone radiation on sperm motility

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**Introduction:** Over the past decade, the relationship between humans and their smartphones have been marked with stark symbiosis. The advent of technology has prolonged the amount of time the cell phone resides in the pockets of men. This places the smartphone and its respective radiofrequency — electromagnetic radiation (RF- EMR) — near the testicles. RF-EMR has been postulated to increase oxidative stress and induce free radical formation. We hypothesized that RF-EMR from cell phones has deleterious effects on sperm parameters, though these effects can be mitigated with solid mediums or distance.
**Methods:** We evaluated the impact of current-generation smartphone, in talk mode, as the RF-EMR source. We certified the exposure to the specimen using calibrated RF-EMR meter. Initially, we studied the impact of RF-EMR on sperm motility and viability from fertile, normozoospermic men, between the ages of 25–35 years old by exposing their semen in an in vitro study over an eight-hour duration. We then determined whether using a cell phone case and increasing distance from semen sample would make a difference in outcomes.
**Results:** At six hours after exposure, we identified a decrease in sperm motility and viability in samples exposed to RF-EMR as compared to those samples that were not from fertile controls. With the addition of the case, we noted a smaller impact on total sperm motility and viability (p=0.01, p=0.01) as compared to direct RF-EMR exposure. In fact, moving the cell phone away by three inches represented the best mitigation strategy to deleterious effects on sperm motility and viability. Interestingly, when the phones were turned on in the talk mode, the most detrimental effects on sperm motility were identified.
**Conclusions:** In this pilot study, we observe that the sperm parameters of motility and vitality are impacted with RF-EMR exposure from cell phones. Precautionary measures, such as physical shields and increased distance from the scrotum, dampened the effects of RF-EMR. Further in vivo research on the true impact of cell phone radiation on male fertility potential is warranted.

## Absence of recurrence and androgen deprivation therapy in half of patients treated for high-grade prostate cancers after radical prostatectomy: A case for treatment de-intensification

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**Introduction:** Delaying androgen deprivation therapy (ADT) is considered a valid objective of prostate cancer (PCa)-directed therapies due to associated side effects. For high-grade (HG) PCa, both radiotherapy (RT) plus ADT or radical prostatectomy (RP) are treatment options. Unfortunately, very few descriptive data focusing on HG PCa outcomes following RP have been published. The objective of this study was to evaluate the baseline characteristics and the oncological outcomes (including avoidance of ADT) of patients undergoing RP for HG PCa.
**Methods:** This is a retrospective study on 486 patients treated by RP for non-metastatic HG PCa at biopsy between 2007 and 2021 at CHU de Québec. Patients were excluded if they had a salvage RP following RT, a non-prostate active cancer, less than two postoperative prostate-specific antigen (PSA) measurements or PSA not available at diagnosis. Biochemical recurrence (BCR) was defined as two consecutive PSA ≥0.2 ng/mL or one PSA ≥0.2 ng/mL and treatment of recurrence. Castration-resistant PCa (CRPC) was defined as two subsequent increases in PSA with a castrate testosterone value (<1.7 nmol/L).
**Results:** In the 453 patients included, median age at diagnosis was 67 (48–85), and median PSA was 7.5 ng/mL (0.6–155). At biopsy, 61.4% had ISUP grade 4 and 38.6% had ISUP grade 5. After RP, 51.1% patients were downgraded to ISUP 3 or less while 9.1% were upgraded to ISUP 5. Positive margins were found in 53.2% patients, 65.7% patients had ≥pT3, and 30.7% patients were N1. At a median followup of 49.6 months, 48.3% of patients were free of BCR without receiving ADT or RT. Fifty-eight (12.8%) patients developed metastasis (median time to metastasis = 21.9 months) and 38 (8.4%) became CRPC (median time from RP = 33.0 months). At last followup, overall survival was 92.5%.
**Conclusions:** Half of the patients remain free of recurrence without treatment intensification after RP. Therefore, RP should be systematically offered in fit patients and those who want to avoid ADT.

## Analyse de la qualité de vie chez les hommes à risque de développer un cancer de la prostate : résultats de la cohorte biomarqueurs et cancer de la prostate, prévention et environnement (BIOCAPPE)

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**Introduction :** Le cancer de la prostate (CaP) est le cancer le plus fréquent chez les hommes au Canada et affecte la qualité de vie (QdV) de façon importante. Peu d'études se sont intéressées à la QdV des hommes à risque de CaP et aucune n'a été réalisée au Canada. Notre objectif visait à faire une analyse descriptive complète de la QdV dans une cohorte canadienne d'hommes à haut risque de développer un CaP, et à évaluer l'impact des problèmes urinaires et érectiles sur la QdV générale.
**Méthodes :** La QdV a été récoltée chez 2053 hommes à risque de CaP participant à l'étude observationnelle prospective multicentrique BIOCaPPE, qui vise à évaluer l'impact de certains biomarqueurs liés aux habitudes de vie sur l'incidence du CaP. Les participants ont rempli plusieurs questionnaires validés afin d'évaluer leur QdV générale (Échelle d'anxiété et de dépression [HADS] et 36-item Medical Outcomes Study Short Form Health Survey [SF-36]), et celle spécifique au CaP (Score international des symptômes de la prostate [IPSS] et Inventaire de la santé sexuelle pour hommes [SHIM]).

**Résultats :** Parmi tous les participants, 6,1% sont des cas définitifs d'anxiété et 2,0% sont des cas définitifs de dépression; 53,9% ont des symptômes urinaires modérés à sévères et 15,0% ont des symptômes de dysfonction érectile modérés à sévères. Plus les symptômes urinaires et de dysfonction érectile sont sévères, moins bonne est la QdV générale. La majorité des participants ont une QdV similaire à celle des hommes de la population générale.
**Conclusions :** Nos résultats suggèrent que la majorité des participants perçoivent leur QdV comme étant satisfaisante, bien que la majorité présentent des symptômes urinaires modérés à sévères. Les symptômes anxieux, dépressifs et érectiles sont moins fréquents. Les symptômes urinaires et de dysfonction érectile ont un impact négatif sur la QdV générale. Il s'agit de la première analyse de la QdV d'une cohorte canadienne d'hommes à haut risque de CaP.

## Septicémie post-biopsie de prostate : expérience de Trois-Rivières

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**Introduction :** La septicémie post biopsie de la prostate apporte une morbidité supplémentaire dans la trajectoire des patients. Le fonctionnement particulier de la clinique d'urologie du CHAUR de Trois-Rivières permet fréquemment d'effectuer des biopsies de la prostate sans planification préalable. La prophylaxie antibiotique utilisée (ciprofloxacine) est alors administrée po souvent 30 minutes avant la procédure. Lors de biopsies projetées, de la ciprofloxacine seule ou en association avec la fosfomycine est prescrite d'avance aux patients qui l'ingèrent avant la séance de biopsies. Nous avons voulu évaluer l'impact de ces différents régimes thérapeutiques sur l'incidence de la survenue d'état septique suite aux biopsies prostatiques.
**Méthodes :** Cette étude rétrospective inclut les patients ayant subi une biopsie de la prostate à la clinique externe d'urologie du CHAUR-CIUSSS MCQ de janvier 2019 jusqu'à mai 2021. Avec la révision du dossier numérisé du patient, nous avons aussi pu analyser plusieurs variables pouvant influencer le risque de septicémie, sa survenue et analyser sa morbidité. Nous avons analysé tout le dossier numérique du patient et toutes les visites de celui-ci à travers tout le CIUSSS-MCQ dans la semaine suivant la biopsie.
**Résultats :** Dans la période étudiée, nous avons effectué 798 biopsies de la prostate à la clinique externe du CHAUR. Nous avons enregistré 23 cas de septicémie post biopsie pour un taux de survenue de 2,88%. La vaste majorité de la prophylaxie s'est donnée per os le jour même (83%), per os en avance (16%) ou IV (1%). Il n'y avait pas de différence significative dans le taux de septicémie pour la préparation per os si elle était donnée le jour même (3%) ou avant (2.4%). La majorité de la prophylaxie per os était à base de ciprofloxacine (91%) ou de ciprofloxacine + fosfomycine (6%). Quoique le nombre de biopsies soit petit dans ce groupe (48), nous n'avons pas enregistré de sepsis avec la prophylaxie à base de ciprofloxacine + fosfomycine. Sur les 23 cas de septicémie, la durée moyenne d'hospitalisation était de deux jours et nous avons pu identifier un germe chez 12 patients. Ces germes étaient majoritairement des E Coli et étaient résistants au ciprofloxacine dans la moitié des cas.
**Conclusions :** Notre étude semble démontrer l'efficacité et la sécurité de la prophylaxie po avec la ciprofloxacine le jour même de la biopsie. Malgré la taille limitée de l'échantillon, la combinaison ciprofloxacine et fosfomycine semble être associée à une tendance à la baisse des états septiques suite aux biopsies. La supériorité potentielle de cette combinaison mériterait d'être évaluée chez une plus large population de sujets en l'offrant possiblement le jour même de la procédure.

## Impact of frailty on postoperative complications among elderly patients undergoing major urological procedures

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**Introduction:** As developed countries' populations age, the number of older individuals undergoing surgery for urological disorders is on the rise. Preoperative frailty evaluation has been linked to worse postoperative outcomes. We sought to assess the impact of frailty on short-term postoperative complications among elderly patients undergoing major urological procedures.
**Methods:** The American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database was used to retrieve patients ≥65 years who underwent either radical cystectomy (RC), nephrectomy (NEP), or radical prostatectomy (RP) between 2014 and 2020. Five-item Frailty Index (FFI), a shortened version of the validated 11-item modified Frailty Index (mFI) was calculated to measure frailty. It is consisted of four categories: non-frail, mildly frail, moderately frail, and frail (FFI= 0, 1, 2, and ≥3 respectively). We evaluated 30-day postoperative complications and readmissions using multivariate logistic regression.
**Results:** Overall, 59 558 cases were identified. Most underwent RP (49.1%), followed by NEP (34.2%) and RC (16.7%). Higher frailty scores were associated with increased overall postoperative complications (mildly frail OR: 1.14 [1.00–1.31]; moderately frail OR: 1.29 [1.04–1.60]; frail OR: 1.57 [1.14–2.17]). These findings were most prominent in RC patients aged 70–74 (frail OR: 5.65 [1.34–24.3]). Across all three procedures, frail individuals also had higher risk of readmission (mildly frail OR: 1.29 [1.09–1.52]; moderately frail OR: 1.34 [1.04–1.74]; frail OR: 1.60 [1.09–2.37]); however, this association was not significant across age groups for RP and NEP patients.
**Conclusions:** This study suggests that frailty in older patients undergoing major urological surgeries increases the risk of postoperative complications and readmission, particularly for RC patients, where the impact of frailty increases with age. This highlights the need for preoperative frailty assessment in this vulnerable patient population to improve quality of care.

## Postoperative leave in urology: Survey to urologists of Canada

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**Introduction:** Recently, a pilot study among urologists in Quebec suggested that there is a large discrepancy regarding prescribed postoperative sick leave. The primary objective of our study was to assess the duration of postoperative sick leave prescribed by urologists in Canada. The secondary objective was to identify factors that may impact the length of sick leave prescribed.
**Methods:** An online survey was sent to Canadian urologists via email. Respondents' demographics prescribed postoperative sick leave after six common surgeries and related factors were assessed.
**Results:** The survey was sent to 662 urologists, and there were 123 (18.6%) respondents. The group had an average of 14 years of practice and most respondents were men (79.7%). Seventy-four percent of respondents agree that the most important factor when prescribing sick leave, regardless of the type of surgery or patient, is if there were complications during the procedure. Most respondents prescribed two weeks of sick leave for light-working patients after a scrotal surgery. This was the only statistically significant consensus after any of the six surgeries studied. More experienced surgeons tend to prescribe shorter sick leave after a ureteroscopy (p=0.010), laparoscopic/robotic renal surgery (p=0.040), and scrotal surgery (p=0.003), and longer sick leave after a transurethral resection of the prostate (p=0.003). Urologists with a lower surgical volume prescribe longer sick leave after a prostatectomy (p=0.008), regardless of the surgical approach.
**Conclusions:** There is no evident consensus on how much sick leave is to be prescribed after urological surgeries by Canadian urologists. Surgeons' years of practice seem to influence the length of sick leave. We hope,

with these results, urologists will reflect on their tendencies when prescribing sick leave. Although the appropriate length of sick leave may be difficult to standardize, recommendations by a consensus panel would be greatly valuable.

### Partial gland ablation with high-intensity focal ultrasound impact on genitourinary function and quality of life: A single-center pilot experience

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**Introduction:** Partial gland ablation (PGA) using high-intensity focal ultrasound (HIFU) is an emerging option for localized prostate cancer (PCa). This pilot study assessed quality of life (QoL) outcomes during the implementation of PGA-HIFU at a single institution.

**Methods:** We prospectively enrolled 25 men with a diagnosis of localized low/intermediate-risk PCa who elected to undergo PGA-HIFU in a pilot study at our institution between 2013 and 2016. Patients underwent pretreatment multiparametric magnetic resonance imaging and transrectal ultrasound-guided biopsies. The primary endpoints were impact on QoL, erectile and urinary function, assessed at one, three, six, and 12 months following PGA.

**Results:** The median age was 64 years old (IQR 59.5–67). Baseline median International Index of Erectile Function-15 (IIEF-15) score was 50, which decreased to 18 at one month ($p<0.001$), returned to baseline by three months and thereafter. International Prostate Symptom Score (IPSS) median at baseline was 8, which worsened to 12 at one month ($p<0.05$), and subsequently improved thereafter. On the UCLA-Expanded Prostate Cancer Index Composite urinary function, there was a decrease in median score from 92.7 at baseline to 76.0 at one month ($p<0.0001$), which improved to or above baseline afterwards. QoL remained similar to baseline at each followup period, as assessed via the EQ-5D questionnaire, its visual analogue scale, and the Functional Cancer Therapy-Prostate scores. At systemic control biopsies six months after treatment, 12/25 (48%) of patients still had clinically significant cancer (GGG ≥2).

**Conclusions:** This is the first cohort of men who underwent PGA-HIFU at our institution. Patients demonstrated a slight, but transient, deterioration in urinary and erectile function at one month. QoL metrics were not impacted during followup over one year. Although the QoL profile of PGA is favorable, oncological control remains to be improved, given the high rates of persistent GGG ≥2.

### L'amlexanox, un inhibiteur de IKK epsilon, favorise la sensibilité à l'olaparib via la regulation de la transcription de RAD51 dans le cancer de la prostate resistant a la castration

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**Introduction :** Chez un patient sur quatre, le cancer de la prostate (PC) va finir par développer une résistance à la castration (CRPC). Les patients souffrant de CRPC sont traités par hormonothérapie ou chimiothérapie. Cependant, ces médicaments ne sont efficaces qu'un temps, et la découverte de nouvelles approches thérapeutiques est primordiale pour améliorer la survie des patients. Nous avons récemment montré que l'inhibition de l'activité de la kinase IKKe, par déplétion ou via les inhibiteurs BX795 et amlexanox, diminue la prolifération cellulaire in vivo et in vitro de lignées CRPC. Les inhibiteurs d'IKKe induisent également un phénotype de sénescence accompagné d'une forte augmentation des dommages à l'ADN et d'une instabilité génomique dans les cellules CRPC.

**Méthodes :** Nous avons découvert un nouveau rôle pour IKKe dans le fonctionnement des voies de réparations des dommages à l'ADN dans le CRPC. Nous avons par conséquent examiné le potentiel thérapeutique de l'amlexanox combiné à l'olaparib, un inhibiteur de PARP.

**Résultats :** L'association de l'amlexanox avec l'olaparib diminue la prolifération des cellules CRPC et augmente les dommages à l'ADN. L'olaparib inhibe le recrutement et l'expression de Rad51 dans les cellules CRPC ainsi que dans la lignée PC-3 déplétée d'IKKe. Nous avons démontré que l'activité du promoteur de Rad51, mesurée par essai luciférase, était diminuée par l'amlexanox ou par la déplétion d'IKKe, et que le traitement à l'amlexanox diminuait la fixation de C/EBP-βsur ce promoteur. Notre modèle de souris a également montré que l'amlexanox combiné à l'olaparib inhibait la croissance tumorale des xénogreffes de CRPC.

**Conclusions :** Notre étude a mis en évidence un nouveau rôle potentiel pour IKKe dans la réparation des dommages à l'ADN par la régulation de la transcription de Rad51 et justifie l'association potentielle de l'amlexanox avec l'olaparib dans le traitement des patients atteints de CRPC.

### Urethroplasty surgical wait-times during COVID-19: From bad to worse

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**Introduction:** Wait times for urethral reconstruction for strictures are significant, and the COVID-19 pandemic significantly affected operating room prioritization; however, there are no published studies on the specific impact of the pandemic on reconstructive urethral surgery wait times and outcomes. We aimed to compare surgical wait times before and during the COVID-19 period, as well as to compare characteristics and surgical outcomes of patients.

**Methods:** In this retrospective study, 147 male patients with a urethral stricture treated with a urethroplasty or perineal urethrostomy (PU) between September 2016 and April 2021 were included. Patients were divided based on their surgery date (before/after Quebec lockdown on March 13, 2020). Median patient followup was 426 days. Baseline and surgical characteristics, and postoperative outcomes and surgical wait times were compared between the two groups, using the t-test, the Pearson Chi-squared test, and the Wilcoxon rank-sum.

**Results:** Median surgical wait times during the COVID-19 period were significantly prolonged (577 vs. 332 days, $p<0.001$). There was no difference in baseline characteristics between the two groups. There was a greater proportion of PUs performed after March 13, 2020 ($p=0.003$). The stricture recurrence rate at three months postoperatively was lower during the COVID-19 period (20.4% vs. 2.3%, $p<0.001$). This one-center study is limited because of its shorter followup period for patients who had their surgery in the COVID-19 period.

**Conclusions:** Our results show longer surgical wait times and better success rates during the COVID-19 period, with no significant differences in baseline characteristics between the patient groups.

### Utilization trends of novel hormonal agents in metastatic castration-resistant prostate cancer in Quebec

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**Introduction:** The introduction of novel hormonal agents (NHAs), such as abiraterone acetate (ABI) and enzalutamide (ENZ), for metastatic castration-resistant prostate cancer (mCRPC) was an important milestone given their survival benefits, tolerability, and ease of administration relative to taxane chemotherapies. This descriptive study sought to examine the utilization trends of these NHAs in patients with mCRPC in the early years after approval in the province of Quebec.

**Methods:** A retrospective, population-based cohort was extracted from Quebec public healthcare administrative databases. The cohort included first-time users of NHAs (ABI or ENZ) from 2011–2016. The primary analysis aimed to describe the overall temporal trends (2011–2016) of

NHA use by chemotherapy status (chemotherapy-naive vs. post-chemotherapy) and prescribing specialty (medical oncology vs. urology vs. others). In the secondary analyses, we described the trends in the years when both ABI and ENZ were available, from 2014–2016 (ENZ-era), stratified by NHA type, chemotherapy status, and prescribing specialty.
**Results:** The cohort comprises 2183 patients, with 1562 (72%) in the chemotherapy-naive group and 621 (28%) in the post-chemotherapy group. While the majority of patients were post-chemotherapy NHA users in 2012, this proportion decreased over time and accounted for only 13% of NHA users by the end of 2016. Medical oncologists were the most frequent prescribers of NHAs (upwards of 60%) throughout 2012 but fell to 45% by the end of 2016. Conversely, the proportion of prescriptions by urologists increased from 22% in 2012 to 42% in 2016. Adjusted analyses show that urologists were more likely to prescribe ENZ over ABI, relative to medical oncologists.
**Conclusions:** Over time, there was an increasing proportion 1) patients who initiated NHAs without prior chemotherapy treatment; 2) NHA prescribing by urologists, and 3) ENZ users. Further research examining exactly how the introduction of NHAs has impacted disease management and referral patterns in advanced PCa may be of interest to clinicians and policymakers.

# Session scientifique IV
# Vendredi 28 octobre 2022

## Impact of urethral catheterization on voiding efficiency in children

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**Introduction:** In adults, the presence of a urethral catheter during the voiding phase decreases the maximal urine flow (Qmax) compared to the free flow produced during uroflowmetry (UF). Little is known about the effect of catheterization during Pressure-flow study (PFS) on the Qmax in children, whose urethra is smaller than that of adults. The objective of this study was to determine the effect of urethral catheterization on Qmax and other voiding parameters during PFS compared to the free flow produced during UF.
**Methods:** We retrospectively reviewed the charts of 63 consecutive children who underwent UF and PFS at our center in the same setting between 2019 and 2022. The patients first undergo a UF with full bladder, then PFS after insertion of a 6, 7, or 9 Fr urethral catheter. We excluded patients who were known or investigated for urethral pathologies, who were on clean intermittent catheterization, and those with major comorbidities. Data was collected from the UF and the PFS and compared using paired t-test.
**Results:** Median age at the time of the study was 7 (IQR 5–11). Twenty-one (39.6%) patients were male and 32 (60.4%) patients were female. Of the 53 patients, three boys and four girls (n=7, 13.2%) were unable to void with the catheter during PFS but able to void after its removal. The Qmax during PFS was 5 mL/s slower than the Qmax recorded on the UF without catheter, representing a decrease of 29% (12.3 vs. 17.3 mL/s, p<0.0001). The impact of urethral catheter during PFS was more significant in males vs. females (Qmax decreased by 7.7 vs. 3.3 mL/s, or 45 vs. 19%). There was no statistically significant difference between the residual volumes when comparing PFS to UF (30 vs. 25 mL, p=0.5774). When using age and gender-specific nomograms for Qmax vs. volume voided, we noted that 16/36 (35%), fell from >10$^{th}$ percentile in UF values to 5$^{th}$ percentile with the PFS values.
**Conclusions:** We conclude that Qmax is reduced by 29% in children due to the presence of a urethral catheter. Males, with an anatomically longer urethra, were particularly affected, with a mean decrease of 7.7 mL/s. Moreover, 13% of children undergoing PFS could not void at all secondary to the presence of the catheter. When using PFS parameters alone, a clinician may attribute abnormally low flow values to 35% of children assessed, thus abnormally low flow parameters on PFS should be interpreted cautiously.

## The anti-tumor activity of prebiotics in bladder cancer

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**Introduction:** Recent evidence showed that gut microbiota plays a crucial role in the response to immune checkpoint blockade (ICB) immunotherapy in various cancers. Multiple approaches are under investigation to modulate the gut microbiota and improve the systemic anti-tumor activity of ICB in cancer. Here, our objectives were to first assess the anti-tumor effect of promising prebiotics and their modulatory potential on gut microbiota in bladder cancer (BCa) and then to test the effects of prebiotics on the systemic anti-tumor efficacy of ICB therapy.
**Methods:** C3H syngeneic mice were injected subcutaneously with MBT-2 mouse bladder tumor cells. Prebiotics and control water were gavaged daily until the end of experiment. Following tumor implantation, mice were treated with four injections of anti-PD1 monoclonal antibody or isotype control intraperitoneally. Tumor growth was monitored twice a week. Fecal samples were collected at many timepoints during tumor growth for the profiling of gut microbiota. Endpoint tumors were dissociated for flow cytometry analysis of tumor-infiltrating lymphocyte composition.
**Results:** The treatment with prebiotics induced an enrichment of Akkermansia and Bifidobacterium bacteria previously associated with response to ICB therapy. Independently of immunotherapy, two prebiotics induced a strong anti-tumor activity compared to control group and improved the overall survival of mice. Interestingly, one prebiotic combined with anti-PD1 immunotherapy also enhanced the systemic anti-tumor effect of ICB. Underlying mechanisms linking prebiotics treatment with tumor reduction will be deciphered by the flow cytometry analysis and tumor RNA sequencing.
**Conclusions:** Overall, our findings support that promising prebiotics can induce an anti-tumor effect at steady state, and in combination with anti-PD-1 treatment, in a BCa mouse model. These data will have a significant impact to enhance the clinical response to ICB treatment for BCa patients.

## Fiabilité et validité de la version franco-Canadienne du Score des Symptômes de la Vessie Neurogène

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**Introduction :** Le Score des Symptômes de la Vessie Neurogène (SSVN) est un questionnaire validé, qui mesure les symptômes vésicaux selon 3 domaines : l'incontinence, le remplissage et la miction, les conséquences et une question sur la qualité de vie urinaire. Nous visons à valider une version franco-canadienne du SSVN pour les patients atteints de sclérose en plaques (SEP) ou de lésions de la moelle épinière (LME).
**Méthodes :** Dans cette étude prospective, 107 patients atteints de SEP et de LME ont été recrutés de novembre 2019 à janvier 2022. Les participants ont rempli le SSVN et d'autres questionnaires (SF-12, ICIQ, SCI-QOL) à l'évaluation initiale et au suivi à 3 mois et 6 mois. La cohérence interne est évaluée avec le coefficient βde Cronbach et la fiabilité test-retest à l'aide du coefficient de corrélation intraclasse (CCI). Des corrélations positives ont été supposées. Une valeur βde 0.70 est considérée acceptable tandis que >0.8 est considérée comme bonne. La validité a été évaluée en comparant la question qualité de vie avec le questionnaire SF-12.
**Résultats :** Parmi les 107 participants avec SEP (27) ou LME (80), les méthodes de gestion vésicale sont la sonde à demeure (29), le cathétérisme intermittent (43), la miction spontanée (24), le condom urinaire (4) et mixte (7). À l'évaluation initiale, le score global médian du SSVN était de 24/78 (EIQ 15-32.5), similaire à 6 mois (24/78 (EIQ 14-31)). La cohérence interne et la fiabilité test-retest du score global et chaque sous-domaine à 3 mois est de 0.66 (0.54-0.76), 0,58 pour l'incontinence, 0.73 pour les symptômes de remplissage et 0.58 pour les conséquences. À 6 mois, le résultat global est 0.80 (0.72-0.86) et pour chaque sous-domaine 0.82 (incontinence), 0.82 (remplissage) et 0.66 (conséquences). La validité démontre une corrélation statistiquement non significative (p>0.05) à l'évaluation initiale (p=0.217, r=-0.12) et 3 mois (p=0.065, r=-0.12).
**Conclusions :** La version franco-canadienne du SSVN démontre une bonne fiabilité ainsi qu'une validité cliniquement significative. Ce questionnaire permet d'évaluer un score global et évaluer chaque sous-domaine des symptômes vésicaux à 3 et 6 mois chez les patients avec SEP et LME. Nous recommandons son utilisation pour appréciation de la qualité de vie et des symptômes vésicaux dans une cohorte de patients avec vessie neurogène.

### Analyzing outcomes of the adjustable transobturator male system for post-prostatectomy incontinence and its relationship with overactive bladders and radiotherapy with the help of urodynamics

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**Introduction:** Adjustable transobturator male system (ATOMS) has been a treatment option for post-prostatectomy incontinence (PPI) in Canada since 2014. It has recently gained popularity, touting advantages such as surgical simplicity and postoperative adjustability. We report our single center's device effectiveness and security. We also explore effects of prior radiotherapy and of overactive bladder (OAB) on these outcomes.

**Methods:** A retrospective study was done on 91 patients who had ATOMS installed between February 2016 and March 2021 at our center. Preoperative incontinence severity was defined as <2 pads per day (PPD), 2–4 PPD, and >4 PPD with regards to 24-h pad-count or/and <200g, 200–400g and >400g regarding 24-h pad-test (24h-PT) to classify mild, moderate, and severe, respectively. Dryness was defined as requiring 0 or 1 PPD postoperatively. Patients considered "improved" or "very much improved" were defined as having a PPD diminution of ≥ 50% or ≥ 75%, respectively. Significant patient satisfaction was defined by "Much better," and "Very much better" PGI-I results.

**Results:** Sixty-five patients were included among 91 (26 excluded due to followup <12 months). Mean patient age was 71 years and mean followup was 29.9 months (SE 1.8 [12–67]). Median preoperative PPD and 24h-PT were 4 (IQR 6–3 [1–10]) and 358 g (IQR 607–256 [34–1592]) respectively. Median PPD at final followup was 1 (IQR 2–0 [0–5], p<0.001). Fifty-six (86.2%) patients noted overall improvement, with 43 (76.7%) being "very much improved" and 42 (75.0%) being "dry." Most (87.7%, n=57) patients were satisfied. Fifty-nine (90.7%) patients required adjustment postoperatively, with a mean of 2.4 adjustments (SE 0.2498) and a mean total instilled volume of 14.8 mL (SE 0.7641, range 6–31). Eight (12.3%) patients experienced complications of any Clavien-Dindo grade, of which four were grade III (one migration [1.5%], three leakages [4.6%]). Patients having received prior radiotherapy (n=22, 33.8%) had lower improvement (73% vs. 93%, p=0.03) and "dry" (45.5% vs. 74.4%, p=0.02) rates but required more adjustments (MED 3.5 vs. 2, p=0.01) and total instilled volume (MED 18.3 mL vs. 13 mL, p=0.01). No other statistically significant difference was found in this subgroup or in that of patients with OAB.

**Conclusions:** This study vouches ATOMS as safe and effective for PPI. Also, radiotherapy seems to impact its effectiveness, whereas OABs do not.

### Comparaison entre la néphrectomie partielle robotique transpéritonéale et rétropéritonéale : notre expérience initiale dans le CIUSSS de l'Est-de-l'île-de-Montréal

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**Introduction :** La néphrectomie partielle laparoscopique est le traitement chirurgical de choix pour les petites masses rénales. Cette chirurgie peut se faire soit par approche transpéritonéale ou rétropéritonéale. L'objectif de l'étude est de comparer les résultats peropératoires et postopératoires de l'approche robot-assistée rétropéritonéale et transpéritonéale.

**Méthodes :** Une analyse rétrospective de tous les cas de néphrectomies partielles robotique a été réalisée entre janvier 2019 et septembre 2021. Les résultats peropératoires et postopératoires suivant ont été compilés : la durée opératoire, les pertes sanguines, le temps de clampage, la durée d'hospitalisation ainsi que les taux de complications. Les résultats ont été comparés entre l'approche transpéritonéale et rétropéritonéale.

**Résultats :** Sur les 74 cas, 17 (23%) étaient par approche rétropéritonéale et 57 (77%) par approche transpéritonéale. La taille moyenne des masses rénales était de 2,6 cm. Les résultats peropératoires incluant le durée opératoire (149 min vs. 157 min), et le temps de clampage (23min vs. 24min) étaient similaires entre les deux approches. Les pertes sanguines étaient plus élevées pour l'approche transpéritonéale (165cc vs. 86cc). Pour ce qui est des résultats postopératoires, la durée d'hospitalisation était plus courte pour l'approche rétropéritonéale (1,8j vs. 2,6j).

**Conclusions :** L'approche rétropéritonéale offre une alternative équivalente à l'approche transpéritonéale pour les masses postérieures avec une durée de séjour hospitalier et de pertes sanguines moindres que l'approche transpéritonéale.

### Transperineal prostate biopsy: Review of technique and preliminary pathological results at our institution

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**Introduction:** Prostate cancer is the most common cancer in men. Diagnosis is usually made with an image-guided biopsy of the prostate. The most common technique is a transrectal (TR) ultrasound-guided biopsy. Complications from this procedure include rectal bleeding and risk of bacterial prostatitis and sepsis. A more recent technique has emerged using the transperineal (TP) route, which has the advantage of not puncturing the rectum to get biopsies. This alleviates the risks of rectal bleeding, prostatitis, and urosepsis. Our objective was to evaluate the efficacy of the TP biopsy technique in terms of cancer detection and positive cores.

**Methods:** We report data on our first 50 patients who underwent TP prostate biopsy. TP biopsy was performed under local anesthesia in an office setting. Twelve-core biopsies were taken using an automatic biopsy device and were evaluated by the same pathology department. Some samples were sent for a second opinion at the McGill pathology department to be examined by a uropathologist. Patients received one dose of cephalosporin antibiotic one hour before the procedure. We then tabulated pathology data and positive core results.

**Results:** Fifty patients were included in the analysis. All patients underwent TP biopsy. The median age was 66 years and median prostate-specific antigen (PSA) was 7.2 ng/ml. Sixty-five percent of the biopsies were positive for adenocarcinoma of the prostate. We had an average of 4.29 positive cores in patients in whom cancer was detected. Eight patients had a PI-RADS 4 or more lesion on multiparametric prostate magnetic resonance imaging before biopsy, of which seven patients had adenocarcinoma detected. We had two cases of urinary retention in the first 48 hours. There were no cases of prostatitis or urinary sepsis or infection. Thirty-one percent of patients experienced hematuria.

**Conclusions:** Our results corroborate literature findings of cancer detection and complications for the TP prostate biopsy technique. This technique is associated with less rectal bleeding and urosepsis in our cohort.

### Prevalence of QTc prolongation in prostate cancer patients undergoing brachytherapy

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**Introduction:** QTc has been associated with a higher risk of Torsade de Pointes, sudden cardiac arrest, and general cardiac mortality. We examined the prevalence of prolonged QTc in prostate cancer patients undergoing brachytherapy, in patients with aggressive cancers, and in patients who underwent prostatectomy.

**Methods:** We randomly selected 1094 patients receiving low-dose or high-dose rate brachytherapy between August 2010 and February 2022. All patients had a preoperative ECG and QTc was automatically calculated with the Bazett formula. Patients with left or complete bundle branch block, ventricular extrasystoles, atrial fibrillation, pacemaker, or QRS ≥120 ms were excluded. As primary outcome, a QTc ≥450 ms was considered abnormal. Chi-squared or Fisher's exact test were used to compare groups. Correlations between QTc and clinical values were evaluated with Pearson correlation coefficient and binary multivariable regression analysis.

**Results:** A total of 6.2% (n=68) had a QTc ≥450 ms. Patients with a Cancer of the Prostate Risk Assessment (CAPRA) high-risk disease (score 6–10) were significantly more likely to have a QTc ≥450 ms than patients with low-or intermediate-risk (9.7% vs. 5.5%, p=0.039). QTc as a continuous variable correlated weakly with the neutrophil count (r=0.13, p<0.001) and age (r=0.08, p= 0.009), and inversely with testosterone (r=-0.17, p=0.002). On binary multivariable regression analysis including neutrophils, testosterone, and age, only testosterone (nmol/L) was predictive of a QTc ≥450 ms (OR 0.9, 95% CI 0.82–0.98, p=0.02). We then compared patients treated with brachytherapy to 178 patients who had a prostatectomy. The latter had a non-significantly smaller portion of patients with a QTc ≥450 ms: 4.5% vs. 6.2% (p=0.5).
**Conclusions:** Our data show that about 10% of patients with high-risk prostate cancer have a prolonged QTc. Physicians should be aware of this and monitor the QTc to possibly decrease cardiac mortality in patients who require androgen deprivation therapy.

## Impact de la diète riche en gras et de l'activité physique sur la progression du cancer de la prostate et de la réponse au traitement à l'enzalutamide

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**Introduction :** Des études épidémiologiques ont rapporté que la consommation de graisses saturées et l'obésité sont associées à une augmentation de la progression du cancer de la prostate (CP) et de la mortalité. De nombreuses évidences supportent l'idée que l'activité physique (AP) réduit le risque de cancer en général. Cependant, il existe peu de preuves d'une association entre l'augmentation de l'AP et la diminution du risque de CP. Nous émettons l'hypothèse que l'AP affecte le développement et la progression du CP et améliore la réponse aux thérapies.
**Méthodes :** Pour étudier le rôle potentiel de l'alimentation et l'AP sur le développement, la progression et la réponse médicamenteuse du CP, nous avons lancé une étude avec des xénogreffes dans quatre groupes de souris nourries avec une diète normale ou riche en graisses (HFD) et avec ou sans AP volontaire. Lorsque le volume tumoral a atteint une moyenne de 700 $mm^3$, les souris ont subi une castration, puis ont été traitées par des injections intrapéritonéales quotidiennes d'enzalutamide (20 mg/kg) pendant 35 jours.
**Résultats :** Nous avons observé moins de progression et de développement de tumeurs dans les groupes de souris avec AP volontaire par rapport aux groupes sans AP. À 54 jours après l'injection des cellules, les volumes tumoraux étaient 50% plus petits chez les souris avec AP que ceux des souris sans AP, et ce, quel que soit le régime alimentaire. Aucune différence n'a été observée dans la croissance tumorale entre les groupes « régime normal » et « HFD ». Aussi, nous avons observé que l'AP améliore la réponse à l'enzalutamide avec une diminution des volumes tumoraux dans les groupes avec AP volontaire par rapport aux groupes sans AP, en particulier pour les groupes HFD.
**Conclusions :** L'activité physique semble être en mesure d'annihiler les effets négatifs introduits par une alimentation riche en graisses sur la progression et la réponse aux traitements du cancer de la prostate.

## The impact of bilateral stone disease on patients' disease progression and quality of life

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**Introduction:** Kidney stone disease is associated with significant morbidity and functional impairment. Few studies have examined the impact of bilateral kidney stones on disease progression. We sought to determine the impact of bilateral stone disease on age of onset, number of stone events, and individual patient health-related quality of life (HRQoL) by querying the validated and prospectively collected Wisconsin Stone Quality of Life (WISQOL) database.
**Methods:** Cross-sectional data was obtained from 2906 kidney stone formers from 14 institutions in North America who completed the WISQOL questionnaire from 2014–2019. The 28-question survey has a 1–5-point scale for each item (total score range 0–140). Kidney stone formers were further stratified according to presence of bilateral or unilateral kidney stones. Categorical variables were reported and compared using a Chi-squared test. A multivariable linear regression model assessed the impact of bilateral kidney stone disease on HRQoL.
**Results:** Of 2906 kidney stone formers, 1340 had unilateral kidney stones and 1566 had bilateral kidney stones. Bilateral kidney stone formers had a younger mean (SD) age of kidney stone onset (37.2±15.8 vs. 46.4±15.9 years, p<0.001). Bilateral kidney stone formers had a higher number of stone events than unilateral kidney stone formers (p<0.001). Bilateral kidney stone formers had a higher mean (SD) number of comorbidities (2.02±1.82 vs. 1.87±1.77, p<0.05). Among those comorbidities, bilateral kidney stone disease was associated with an increased number of depression/anxiety symptoms (350 [22.4%] vs. 247 [18.4%], p<0.05). Bilateral and unilateral kidney stone formers did not differ for calcium oxalate, calcium phosphate, uric acid, and mixed stone composition (p>0.05). On multivariable analysis, bilateral kidney stone disease was an independent predictor of worse HRQoL (β=-11.2, CI-19.5 to -3.0 points, p<0.05).
**Conclusions:** Bilateral kidney stone formers had a younger age of kidney stone onset and a higher number of stone events than unilateral kidney stone formers. Presence of bilateral kidney stones negatively impacted HRQoL. Therefore, clinicians should pay closer attention to bilateral kidney stone patients on clinical presentation and their risk for disease progression.

## Projet BIOCaPPE_GRePEC : analyses des liens entre de potentiels biomarqueurs et le risque du cancer de la prostate

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**Introduction :** Le développement du cancer de la prostate (CaP) pourrait être impacté par certaines habitudes de vie. Bien que mal connu,

ce lien impliquerait la modulation de certains biomarqueurs tels que l'adiponectine, l'insulin-like growth factor-1 (IGF-1) et les lipoprotéines de basse densité oxydées (LDL-ox). Ces biomarqueurs pourraient potentiellement être utilisés pour stratifier le risque de CaP. Nous avons évalué le lien entre la concentration des biomarqueurs en circulation et le risque de CaP dans une cohorte d'hommes à risque élevé de CaP participant à l'étude prospective observationnelle multicentrique BIOCaPPE_GRePEC.
**Méthodes :** La concentration des biomarqueurs sériques a été mesurée à l'entrée dans l'étude chez 1500 hommes à risque de CaP par la méthode ELISA. L'incidence du CaP a été déterminée par biopsie prostatique sur un suivi entre 2 et 7 ans. Le lien entre le CaP et les biomarqueurs a été évalué à l'aide d'un modèle de poisson robuste.
**Résultats :** L'âge moyen des participants est de 63 ans (±7), dont 162 ont développé un CaP au cours de leur suivi (10,8%). Le taux moyen d'IGF-1, de LDL-ox et d'adiponectine est de 110ng/mL (±32), 69.14U/L (±19.9) et 8.24µg/mL (±3), respectivement. Une concentration plus élevée d'adiponectine serait protectrice contre le CaP ($RR_{Adiponectine}$ = 0.63, $IC_{95\%}$ [0.40;0,98], p=0.04) alors qu'une concentration plus élevée de LDL-ox serait délétère ($RR_{LDL\text{-}ox}$ = 1.43, $IC_{95\%}$ [0.95;2,15], p=0.08).
**Conclusions :** L'adiponectine aurait un rôle protecteur contre le CaP tandis que LDL-ox favoriserait le CaP chez les hommes à risque élevé de CaP. Nos résultats suggèrent que LDL-ox et adiponectine seraient des biomarqueurs potentiels pour la stratification du risque du CaP. Plus d'études sont justifiées.

## Bone mineral density testing and the risk of fractures in men initiating androgen deprivation therapy: Population-based study

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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. Although guidelines recommend BMD testing when initiating ADT to properly assess baseline fracture risk, there is limited data to support this recommendation in the PCa patient population. The objective was to examine the association between baseline BMD testing (bBMDT) and the risk of fractures in men initiating ADT for PCa.
**Methods:** A retrospective observational cohort study using data from Quebec public healthcare insurance administrative databases was conducted. The cohort included PCa patients who initiated ADT from 2004–2015 and who received at least one year of ADT treatment. Baseline BMD testing was defined as a BMD test performed from six months prior to ADT initiation and up to three months after. Patients were categorized as either having received or not received bBMDT when initiating ADT. The primary study outcomes were incidence of any fracture and incidence of fractures resulting in hospitalization. Inverse probability of treatment weighting was used to adjust for measured baseline characteristics, which included patient demographic variables, comorbidities, risk factors for fractures, and use of other medications affecting bone density.
**Results:** We identified 13 532 patients who initiated ADT, of which 2070 (15.3%) underwent bBMDT. The unadjusted five-year incidence of any fracture was 15.1% for patients not receiving bBMDT and 14.0% for patients receiving bBMDT. In adjusted analyses, bBMDT was not associated with the risk of any fracture (HR 0.92, 95% CI 0.76–1.12). For fractures requiring hospitalization, bBMDT was associated with a lower risk (HR 0.71, 95% CI 0.52–0.98). Furthermore, bBMDT was associated with increased odds of bisphosphonate use within one year of ADT initiation among patients who were bisphosphonate-naive at baseline (OR 2.03, 95% CI 1.74–2.36).
**Conclusions:** In our study population, bBMDT was associated with a lower risk of fractures resulting in hospitalization. Given the low uptake of bBMDT, additional efforts emphasizing the importance of BMD testing in guidelines may be needed.

## Clinical outcomes of patients with metastatic renal cell carcinoma with or without sarcomatoid differentiation treated with systemic therapy in real-world Canadian setting

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**Introduction:** The objective of this study was to evaluate the impact of first-line systemic therapies on survival of metastatic renal cell carcinoma (mRCC) patients (pts) with or without sarcomatoid differentiation (SD) using real-world data.
**Methods:** The Canadian Kidney Cancer information system was used to identify mRCC pts diagnosed from January 2011 to April 2022. Only pts with synchronous primary and metastatic disease, treated within 12 months from initial diagnosis, IMDC intermediate/high-risk, and a confirmed histology of RCC with documentation of presence/absence of SD were included. Pts were classified in two groups according to initial treatment received for mRCC: 1) targeted treatment (TT); or 2) immunotherapy-based treatment (IO). Within each of these groups, pts were subclassified by presence or absence of SD based on their nephrectomy specimen. Inverse probability of treatment weighting using propensity scores was used to balance the groups for sex, age, Charlson comorbidity score, clear-cell histology, nephrectomy (before or after TT/IO), IMDC risk, sites, and number of organs with metastasis. Cox proportional hazards models were used to assess the impact of initial TT vs. IO on overall survival (OS) and by SD status.
**Results:** A total of 650 pts were included in the study cohort: 484 pts were treated with TT and 166 pts were treated with IO. Median age was 62 years, 75% were male, and the majority had a nephrectomy before TT/IO (86%). In weighted analysis of the SD pts (113 TT and 50 IO patients), treatment with IO was associated with an increase in OS compared to TT (median of 48 vs. 18 months, HR 0.43, 95% CI 0.25–0.74). In the non-SD pts (371 TT and 116 IO patients), mRCC patients treated with IO had an improved survival compared to patients treated with TT (median of 84 vs. 48 months, HR 0.64, 95% CI 0.44–0.92). A sarcomatoid involvement above the median (10%) was associated with an increased risk of death (HR 1.71, 95% CI 1.11–2.64).
**Conclusions:** mRCC patients with or without SD have an improved survival when treated with IO-based first-line systemic therapies compared to TT-based first-line treatments.