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Entrée # 41

Tracing prostate cancer progression through AR-negative cell subtype signatures

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Introduction: Prostate cancer (PCa) is the most common non-skin malignancy and among the leading causes of cancer death in men. Despite available therapies, some patients inevitably fail treatments, progress, and eventually die from the disease. Predicting recurrence or progression remains highly challenging. This may reflect the underlying intra-tumoral heterogeneity, partly driven by distinct PCa cell subtypes, including androgen receptor (AR) luminal, and AR stem and neuroendocrine cells. Their dynamic regulation and clinical relevance remain unclear, limiting our ability to stratify patients and guide therapy effectively. We aimed to characterize PCa cell subtype-specific signatures in tumors, trace them back in serial liquid biopsies, and also identify markers released by metastases.

Methods: RNA was extracted and sequenced from banked fresh frozen tumors and matched benign radical prostatectomy (RP) samples from 100 lethal and 45 disease-free cases with no recurrence for >10 years after RP. Whole-blood RNA was extracted from longitudinally collected and banked blood from selected cases and sequenced, while corresponding serum was sent to proteomics platforms. An in-depth literature review was conducted to compile exhaustive lists of signatures potentially related to AR PCa cells.

Results: Bioinformatic analyses of subtype-relevant genes in tumors of lethal vs. disease-free cases revealed signatures associated with PCa lethality. Their screening in liquid biopsy transcriptomic and proteomic data showed shared AR subtype patterns appearing in late stages and not detected in disease-free cases. Moreover, exclusive AR subtype candidates were detected late in liquid biopsy of lethal cases, supporting a metastatic origin.

Conclusions: These findings provide insights into tumor progression, revealing circulating markers of AR PCa cells likely released from metastases. Patient-tailored signatures could be used for stratification and offer new therapies.

Entrée # 389

What traits do urology programs value in elective students? A survey of Canadian selection committee members

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Introduction: Clerkship is a critical period allowing students to explore specialties, develop skills, and be evaluated for residency selection. Performance in electives is often the most important criterion when choosing trainees. We aimed to identify the competencies most valued by programs during electives, as they are often implied but rarely assessed directly.

Methods: Using the Canadian Medical Education Directives for Specialists (CanMEDS) framework, we created 21 attributes and designed a best-worst scaling survey where respondents selected the best and worst items from 21 sets of five options. The survey was distributed to Canadian urology programs from February to March 2025. Using the hierarchical Bayes method, we estimated the relative importance of each attribute at both individual and aggregate levels. Scores were scaled to sum to 100 with 95% credible intervals, where higher scores indicate greater perceived importance.

Results: Respondents were eight program directors, four urologists, and one resident (n=13). The top attributes were "Demonstrating appropriate behavior" (12.4 [11.9, 13.0]), "Seeking out responsibilities" (9.7 [8.5, 10.9]), and "Exhibiting reliability and independence" (9.6 [7.9, 11.3]). The lowest three were "Effective presentation skills during journal clubs" (0.3 [0.0, 0.7]), "Incorporating evidence on health disparities in urology" (0.09 [0.01, 0.2]), and "Discussing barriers to care and proposing solutions" (0.03 [0.004, 0.06]). In CanMEDS roles, Professional (9.9) and Leader (8.1) were prioritized, while Scholar (1.8) and Health Advocate (0.2) ranked lowest.

Conclusions: Canadian urology programs prioritize professionalism, initiative, and reliability during electives. In contrast, there is a low emphasis on scholarly and advocacy competencies, likely due to the short duration and clinical focus of electives. Our study offers insight into urology selection criteria, helping students prepare for rotations and residency applications.

Entrée # 374

Continence post-prostatectomie : Validation externe d'un modèle pronostique utilisant la longueur de l'urètre membraneuse mesuré par l'IRM

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Introduction : Certains patients ne retrouvent pas leur continence après une prostatectomie. La longueur de l'urètre membraneuse (MUL) a été associée avec une meilleure continence post-chirurgie. Néanmoins, MUL n'est pas utilisé systématiquement. Évaluer la performance d'un modèle avec MUL à prédire la continence post-prostatectomie. Le modèle choisi (Jeong et al.) avait la meilleure validité interne parmi ceux publiés.

Méthodes : Cette étude inclut des patients entre 2015 et 2023. Les données ont été extraites des dossiers médicaux. MUL a été mesurée sur IRM en T2 sagittale par deux examinateurs. Le modèle incluait : l'âge, la préservation des pédicules neurovasculaires, le volume prostatique, l'approche chirurgicale (tomie, laparoscopie ou robotique) et MUL. La continence a été définie comme 0 pad/24h et 0-1 pads/24h. La performance du modèle a été évaluée avec la statistique C, la courbe de calibration et les courbes décisionnelles.

Résultats : Cinq cents patients de 64.2 ans en moyenne (±SD 6.8) ont été inclus. La majorité ont subi une prostatectomie robotique (n=458, 92%) pour un cancer de Grade Group 2 (n=247, 53%). Le volume médian de prostate était de 39.0 ml (IQR 29.0, 52.5) et MUL médian était 11.0 mm (IQR 8.1, 14.0). À un an, la continence (0 pad/24h) a été atteinte chez 312 (62%) patients. La statistique C était 0.64. La calibration était mauvaise. Les courbes décisionnelles n'ont pas montré aucun avantage à utiliser le modèle pronostique sur un échantillon des seuils cliniquement significatifs. La continence (0-1 pads/24h) a été atteinte chez

450 (90.0%) patients. La statique C était 0.69 et la calibration était excellente. Les courbes décisionnelles ont montré un avantage.

Conclusions : Le modèle pronostique de Jeong et al est bien calibré et offre un avantage d'utilisation si la continence est défini come 0–1 pads/24h. Cependant, le modèle n'est pas en mesure de prédire une continence parfaite (0 pads/24h).

Entrée # 379

Micro-cost analysis of reusable compared to affordable single-use flexible ureteroscopes

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Introduction : Flexible ureteroscopy is increasingly used for managing upper urinary tract pathologies, particularly kidney stones. With the emergence of affordable single-use flexible ureteroscopes (fURS) as an alternative to reusable systems, the contemporary economic impact of each device is unclear. We performed a micro-cost evaluation comparing reusable fURS with two single-use models in a single-payer Canadian healthcare system.

Methods : Costs of reusable fURS were divided into acquisition, repair, and reprocessing expenses. Per-procedure costs for reusable fURS were calculated by dividing the total annual costs by the average annual number of procedures, whereas single-use costs were based solely on device prices. The total number of repairs and specific reasons for repairs were also collected for the entire reusable fURS fleet from 2022–2024.

Results : At our center, an average of 418 procedures were performed annually using reusable fURS, with total annual costs of \$102 420.60, equaling \$245.03 per procedure. Reusable fURS become more cost-effective at volumes exceeding 130 cases compared to EU-Scope™ US 31E-12 and 83 cases compared to the Standard LithoVue™. Additionally, 65 repair events were recorded from 2022–2024, mainly due to distal tip leakage (77%). One repair was required for roughly 20 procedures (20.22:1).

Conclusions : Our analysis indicates that reusable systems are more cost-efficient in high-volume settings, while single-use devices, especially the EU-Scope™, may be advantageous in lower-volume centers. In tertiary centers, the use of single-use fURS represents an excellent opportunity to preserve the durability of reusable fURS, particularly during complex procedures with a high risk of ureteroscope damage.

Entrée # 408

Énucléation endoscopique de la prostate au laser, où en sommes-nous au Québec? Une étude multicentrique

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Introduction : L'énucléation endoscopique de la prostate (EEP) au laser est devenue l'une des techniques de référence pour le traitement chirurgical de l'hyperplasie bénigne de la prostate (HBP). Notre objectif était d'évaluer les pratiques et les résultats de l'EEP au Québec.

Méthodes : À partir des bases de données prospectives de trois hôpitaux publics universitaires du Québec, nous avons rétrospectivement analysé les données de patients ayant eu une EEP entre 2018 et 2022. Les données préopératoires cliniques, biologiques, urodynamiques, les données opératoires, les résultats fonctionnels à 3, 6 et 12 mois et les complications postopératoires ont été collectés. Des analyses descriptives ont été effectuées ainsi qu'une régression logistique pour déterminer les facteurs associés à un échec de l'ambulatoire.

Résultats : Un total de 729 patients a eu une EEP par laser. L'âge moyen était de 71,5 ans (± 7,8). La majorité des patients étaient en rétention urinaire (70%, 510/729), dont 55,5% avec une sonde à demeure et 11% sous auto-cathétérisme

en préopératoire. 84,2% des EEP ont été faites au laser holmium (HoLEP), et 15,8% au laser thulium (ThuLEP). Le volume prostatique moyen était de 127.3 ±57.7 g, avec un volume morcelé moyen de 82.2±48.4 g. Le taux de succès en chirurgie ambulatoire s'élevait à 84.5% (268/317). Le taux de complications majeures (grade Clavien-Dindo ≥3) était de 2.8 %. À six mois postopératoires, le Score International des Symptômes de Prostatisme (IPSS) moyen était de 6.4/35±5.7, le score de la qualité de vie (QoL) de 1/2/6±1.5 et le débit urinaire maximal (Qmax) de 24.1±23.6 ml/s. En analyse multivariée, seule la durée de sonde postopératoire était statistiquement associée à un échec d'ambulatoire, OR 1.15 [1.06–1.28] (p=0.003).

Conclusions : Cette première cohorte québécoise confirme que l'EEP est sécuritaire et efficace, et permet une prise en charge en ambulatoire dans la grande majorité des cas, quel que soit le type de laser.

Entrée # 432

From retention to relief: Characteristics and outcomes of men with urinary retention undergoing Aquablation – analysis of the International Collaborative Aquablation Research Urology Society database

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Introduction : Urinary retention (UR) is a common end-stage complication of benign prostatic hyperplasia (BPH). Aquablation, a robotic waterjet technology, is a safe and effective BPH treatment; however, outcomes for men with UR remain understudied. This study aimed to evaluate the safety and efficacy of Aquablation in men with UR.

Methods : This study analyzed the International Collaborative Aquablation Research Urology Society (ICARUS) database, including men who underwent Aquablation from 2018–2024 at four high-volume centers, grouped by the presence or absence of UR requiring an indwelling catheter or clean intermittent catheterization before surgery. Demographics, intraoperative, and postoperative outcomes were assessed.

Results : A total of 286 men were in UR compared to 1603 men without UR. Age, comorbidities, and use of anticoagulation were similar between cohorts but men with UR had larger prostates (105 vs. 74 cc, p<0.0001), higher baseline PSA (5.2 vs. 3.5, p<0.0001), and worse International Prostate Symptom Scores (IPSS, 22.2 vs. 20.2, p=0.03) compared to men not in UR. Operating room time was slightly longer for men in UR (60 vs. 55 min, p=0.002), and men in UR had a higher rate of transfusion (3.5% vs. 0.25%, p<0.0001), 30-day readmission rate (2.6% vs. 0.76%, p=0.02), and were slightly less likely to pass their initial trial of void (TOV, 91% vs. 97%, p<0.0001). Men with UR had similar improvements in functional outcomes at 24-month followup, with a 12–13.3-point reduction in IPSS (p=0.49) and a better change in quality of life (-3.61 vs. -1.75, p<0.0001). There was no difference in the change in International Index of Erectile Function, and both groups reported low (<1%) rates of retrograde ejaculation.

Conclusions : This study uses an international, real-world dataset to show that although men in UR have larger prostates, higher perioperative risks, and slightly lower initial TOV success, Aquablation results in comparable long-term outcomes to those not in UR.

Entrée # 424**Impact du microbiote intestinal sur la réponse à l'immunothérapie par bacillus Calmette-Guérin dans le cancer de la vessie : en route vers un modèle prédictif**

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Introduction : Le traitement du cancer de la vessie sans envahissement musculaire (NMIBC) repose sur une résection transurétrale de la tumeur, suivie d'une immunothérapie intravésicale au *Bacillus Calmette-Guérin* (BCG). Malheureusement, environ 40% des patients récidivent. Des études ont montré que le microbiote intestinal influence la réponse aux immunothérapies systémiques, et identifié certaines bactéries capables d'améliorer l'efficacité de ces traitements dans divers cancers. On ignore si ces bactéries jouent également un rôle dans la réponse à l'immunothérapie au BCG.

Méthodes : Nous avons réalisé des analyses de métagénomique de type shotgun afin d'évaluer la composition du microbiote intestinal à partir d'ADN fécal collecté avant l'initiation du BCG chez 58 patients atteints de NMIBC. Nous avons testé l'applicabilité du TOPOSCORE, un modèle prédictif de réponse aux immunothérapies systémiques validé dans divers cancers, dans nos échantillons.

Résultats : Bien que ce modèle ait identifié 100% des non-répondeurs (NR) au BCG, il a montré une faible spécificité (57%) pour prédire la réponse. Grâce au séquençage du génome entier, nous avons identifiés des bactéries spécifiques à la réponse au BCG, appelées RABS (response-associated bacteria species). Leur présence est associée à une meilleure survie sans récurrence chez les patients NMIBC. Nos données préliminaires suggèrent que 50% des bactéries liées à la NR sont associées à une résistance aux antibiotiques.

Conclusions : Nos résultats suggèrent une similarité du microbiote intestinal entre la non-réponse aux immunothérapies systémiques et au BCG, tandis que les bactéries associées à la réponse au BCG diffèrent de celles identifiées dans d'autres immunothérapies. Nos recherches actuelles visent à développer un test moléculaire prédictif à partir des signatures de microbiotes des patients, qui permettra de prédire la réponse au BCG en clinique et personnaliser la ligne de soins.

Entrée # 418**Comparing outcomes of retroperitoneal vs. transperitoneal robot-assisted partial nephrectomy**

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Introduction : Robot-assisted partial nephrectomy (RAPN) is usually performed with a transperitoneal (T-RAPN) approach. The retroperitoneal approach (R-RAPN) is a novel alternative. This study aimed to compare the surgical efficacy and safety of these two approaches.

Methods : We reviewed a prospectively maintained database of RAPNs by three surgeons from September 2022 to June 2025. Patient and tumor characteristics, operative and perioperative parameters, 30-day complications, and 3–6-month followup data on eGFR and hemoglobin were collected. Means, standard deviations, and frequencies were calculated for demographic data. Linear regression was used to evaluate relationships between operative parameters and clinical outcomes.

Results : A total of 237 patients were available for analysis; 152 patients underwent T-RAPN, while 85 underwent R-RAPN. Age, BMI, eGFR, Charlson comorbidity index, RENAL score, tumor size, and rates of endophytic and cystic lesions were comparable between groups. Location differed significantly; the T-RAPN and R-RAPN cohorts had primarily anterior and posterior tumors, respectively ($p < 0.001$). The R-RAPN group demonstrated shorter mean operative time (ORT) (153 vs. 165 mins, $p = 0.001$), shorter clamp time (CT) (18 vs. 25 mins, $p = 0.001$), and lower estimated blood loss (EBL) (125 vs. 230 ml, $p = 0.001$). For posterior tumors, R-RAPN had shorter ORT (157 vs. 165 mins, $p = 0.039$), less EBL (53 vs. 77 ml, $p < 0.001$), and shorter CT (18 vs. 25 mins, $p = 0.002$). For

anterior tumors, all the measured outcomes were comparable between the approaches. For patients with BMI > 30 , R-RAPN had significantly shorter ORT (151 vs. 165 mins, $p = 0.010$), less EBL (190 vs. 198 ml, $p = 0.008$), and shorter CT (20 vs. 25 mins, $p = 0.049$).

Conclusions : R-RAPN is an efficient and effective approach to partial nephrectomy. It demonstrated superior outcomes compared to T-RAPN in obese patients and posterior tumors regarding OT, CT, and EBL, while showing comparable results for anterior tumors.

Entrée # 414**Concordance between MRI-targeted plus systematic fusion biopsy and radical prostatectomy findings: Focus on histologic concordance and clinically relevant pathologic features**

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Introduction : MRI-targeted prostate biopsies, especially when combined with systematic sampling, have improved lesion localization and risk stratification; however, concordance with radical prostatectomy (RP) pathology remains variable, especially regarding tumor grade and aggressive histological subtypes. Our objective was to assess detection rates of clinically significant prostate cancer (csPCa) using transperineal (TP) fusion-guided biopsies and to evaluate concordance with RP regarding Gleason grade group (GGG) and histologic subtype, based on a contemporary real-world dataset.

Methods : We analyzed patients who underwent TP MRI-ultrasound fusion-guided biopsy and RP (January 2023 to April 2025). All biopsies used the Koelis Trinity™ system. Clinical, radiologic, and pathologic data were collected. Histologic concordance was evaluated for acinar, ductal, and cribriform patterns.

Results : A total of 57 TP prostate biopsies were performed; 7% were classified as GGG 1, 57.9% as GGG 2, and 31.6% as GGG ≥ 3 . Histologic analysis of the final RP showed a distribution of 1.8% in GGG 1, 73.7% in GGG 2, and 24.6% in GGG ≥ 3 . Overall, the concordance rate between biopsy and surgical GGG was 58.1% (32/55). Upgrading occurred in 16.3% of cases (9/55), while downgrading was observed in 25.4% (14/55). Acinar adenocarcinoma was seen in 93% of biopsies vs. 68.4% in RP; ductal in 7% vs. 29.8%; cribriform in 8.8% vs. 36.8%.

Conclusions : Fusion-guided biopsy demonstrated high detection rates of csPCa; however, concordance with RP specimens was only moderate, with 25.4% downgraded, highlighting the limitations of preoperative biopsy. Moreover, aggressive subtypes, such as ductal and cribriform architecture, were frequently missed. These findings emphasize the need for improved diagnostic pathways and suggest that integrating AI-driven tools and refined targeting strategies may enhance tumor characterization and inform treatment planning.

Entrée # 395**Phase I clinical trial: Pilot study of somatic-autonomic nerve grafting technique to restore erectile function in patients with persistent erectile dysfunction post-radical prostatectomy**

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Introduction : Erectile dysfunction (ED) is a significant complication of radical prostatectomy (RP) despite advances in nerve-sparing techniques. Recent studies suggest promise in somatic-to-autonomic nerve grafting for persistent post-RP ED, but procedural complexity and the need for plastic surgery collaboration have limited adoption. This single-arm, prospective, phase I trial evaluates the safety and feasibility of a novel somatic-to-autonomic nerve grafting technique for ED restoration in men with persistent ED following RP.

Methods : Ten patients with normal preoperative erections and > 18 months of persistent ED post-RP were enrolled. Bilateral end-to-side neurotomy was performed between the dorsal penile nerve and corpora cavernosa using an ilioinguinal nerve graft. Baseline assessments included IIEF-5 and a validated pain questionnaire. Followups were scheduled at one, three, six, and 12 months postoperatively. Data collected include demographics, perioperative metrics, safety outcomes, and both primary (safety/feasibility) and secondary (erectile function) endpoints.

Results : Mean patient age was 63.1 years (SD ± 6.6). Mean pre-prostatectomy IIEF-5 score was 24.7, dropping to 5 post-prostatectomy. Three patients had

no nerve-sparing, three had unilateral partial, two had unilateral complete, and two had bilateral complete. Time from RP to nerve grafting was 32.3 months (SD \pm 12.3); mean operative time was 79.4 minutes (SD \pm 18.7). Postoperative incisional pain was minimal and managed conservatively. Six patients had mild ipsilateral scrotal numbness. One patient developed a Clavien-Dindo grade II wound infection; two had grade I hematomas. At a mean followup of 3.6 months (SD \pm 1.27), the mean IIEF-5 score was 11.7 (SD \pm 4.7). Five patients had achieved penetrative intercourse

Conclusions: Early findings suggest our nerve grafting approach is safe and feasible, with minimal morbidity. Preliminary data indicate meaningful erectile function recovery.

Entrée # 437

Prostate-specific antigen density as a predictor of clinically significant prostate cancer in patients with PI-RADS 3 lesions

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Introduction: The Prostate Imaging-Reporting and Data System (PI-RADS) 3 lesions are equivocal for clinically significant prostate cancer (csPCa), with a 17–21% detection rate. Prostate-specific antigen density (PSAD) is used to risk-stratify these cases, with a commonly cited 0.15 ng/mL² threshold. Consensus, however, is lacking regarding its utility in guiding biopsy decisions. We aimed to evaluate the utility of PSAD and other clinical factors in predicting csPCa in PI-RADS 3 lesions using real-world clinical data.

Methods: We retrospectively reviewed patients with PI-RADS 3 lesions who underwent transperineal prostate biopsy from 2021–2025. Variables included age, PSA, PSAD, prostate volume (Pvol), lesion volume, prior biopsy status, and pathology. We assessed variables via non-parametric tests, followed by binary logistic regression, receiver operating characteristic (ROC) curve, and decision curve analyses (DCA).

Results: Of the 31 patients with PI-RADS 3 lesions available for analysis, 16% (5/31) had csPCa. PSA ($p=0.036$), Pvol ($p=0.007$), PSAD ($p=0.002$), and prior biopsy status ($p=0.027$) differed significantly between patients with and without csPCa. PSAD was the strongest predictor (OR 2.74, 95% CI 1.16–6.52, $p=0.022$), followed by Pvol (OR 0.90, 95% CI 0.82–0.99, $p=0.037$). ROC analysis for PSAD identified an optimal cutoff of 0.20 ng/mL² (area under the curve [AUC] 0.915, sensitivity 100%, specificity 84.6%). In contrast, the AUC for Pvol was 0.131, indicating limited discriminatory ability for csPCa. DCA for PSAD showed greater net benefit for using the threshold of 0.20 ng/mL² vs. “biopsy all” or “biopsy none” strategies.

Conclusions: In a real-world setting, PI-RADS 3 lesions were associated with csPCa in 16% of cases. PSAD outperformed other variables for predicting csPCa in PI-RADS 3 lesions. A PSAD threshold of 0.20 ng/mL² provided excellent diagnostic performance and clinical utility in patients with PI-RADS 3 lesions.

Entrée # 422

Genomic alterations in geriatric renal cell carcinoma

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Introduction: Renal cell carcinoma (RCC) is the ninth most common cancer globally, and its incidence is rising. Recent data show a shift toward older age, with a median diagnosis age of around 65 years. The somatic alterations landscape in elderly patients remains poorly understood. We aimed to better characterize the genomic alterations in geriatric RCC patients.

Methods: This retrospective cohort analysis includes 943 cases of clear-cell renal cell carcinoma (ccRCC) from the Cancer Genomics of the Kidney (CAGEKID) dataset and 118 cases from the McGill University Biobank. The patients were divided into two groups: elderly (\geq 65 years) and younger ($<$ 65 years). A shared 12-gene somatic panel common to both datasets, along with additional dataset-specific mutations, is analyzed to compare mutation frequencies between age groups and explore potential age-specific genomic patterns.

Results: In our age-stratified analysis of ccRCC cases in the CAGEKID dataset, we compared mutation frequencies in elderly patients to those in younger individuals. PBRM1 mutations were significantly enriched in the elderly (OR 1.62, $p=0.00046$), with additional trends observed for KDM5C mutations (OR 1.73, $p=0.023$). In addition, co-occurrence analysis revealed significant associations between gene pair mutations. PBRM1–SETD2 (OR 3.52, $p=0.000007$) and ATM–BAP1 (OR 5.79, $p=0.0019$) showed strong positive co-mutation patterns, suggesting potential cooperative roles in ccRCC tumorigenesis, while BAP1–PBRM1 mutations were significantly less likely to co-occur (OR 0.28, $p=0.00079$), suggestive of a mutually exclusive relationship in the elderly cohort.

Conclusions: Preliminary data suggest that mutation frequencies and co-occurrence patterns in elderly ccRCC patients differ significantly from those in younger individuals. These findings support the need for further investigation into whether geriatric RCC represents distinct mutational profiles.

Entrée # 435

Correlation between PI-RADS score and final pathology of index lesions following robotic radical prostatectomy: A single-center study

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Introduction: Higher PI-RADS scores are associated with an increased likelihood of clinically significant prostate cancer (csPCa). The relationship between PI-RADS scores and final robotic-assisted radical prostatectomy (RARP) pathology at the level of index lesions remains an area of active investigation. We investigated the association between preoperative PI-RADS scores and final pathologic outcomes, including rates of csPCa and adverse pathologic features, in patients undergoing RARP at the McGill University Health Centre following transperineal MRI-ultrasound (TP MRI-US) fusion biopsy.

Methods: We retrospectively reviewed data from 56 patients who underwent mpMRI, TP MRI-US biopsy, and RARP from 2023–2025 at our institution. Correlation between PI-RADS score and RARP pathologic findings, including extracapsular extension (ECE), seminal vesicle invasion (SVI), and positive surgical margins, were assessed using Chi-squared tests and Pearson’s correlation.

Results: The mean age was 65 years, and the mean PSA was 8.2 ng/mL. PI-RADS 4 and 5 lesions were found in 27 and 26 patients, respectively. RARP pathology showed GGG 2 in 75% (42/56) and GGG \geq 3 in 25% (14/56) of patients. In patients with PI-RADS 4 lesions, 85.1% (23/27) had GGG 2 and 14.8% (4/27) had GGG \geq 3. In comparison, the PI-RADS 5 group showed a shift toward higher-grade disease, with 69.2% (18/26) having GGG 2 and 30.7% (8/26) having GGG \geq 3. Adverse pathological features significantly correlated with higher PI-RADS categories. ECE was present in 55.4% (31/56) of cases ($r=0.509$, $p<0.001$), SVI in 16.1% (9/56) ($r=0.303$, $p=0.046$), and positive surgical margins in 48.2% (27/56) ($r=0.353$, $p=0.019$).

Conclusion: This single-center study demonstrates a statistically significant association between higher PI-RADS scores and both the detection of csPCa and adverse pathologic features on RARP specimens, including ECE, SVI, and positive surgical margins.