

# 2024 American Society of Clinical Oncology Genitourinary (ASCO-GU) Cancers Symposium

## Meeting highlights

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### INTRODUCTION

From January 25–27, 2024, San Francisco, along with a virtual global audience, played host to the 20<sup>th</sup> annual American Society of Clinical Oncology Genitourinary Cancers (ASCO-GU) Symposium. This highly anticipated event drew together specialists in GU cancer from diverse corners of the world. With a focal point on cutting-edge science, interdisciplinary expertise, and evidence-based practices, this year's symposium became a nexus for advancing knowledge in the realms of GU cancer treatment, research, and patient care. Following this symposium, on January 31, the Canadian Urological Association (CUA) convened an online webinar where Canadian experts highlighted pivotal research findings in bladder, kidney, and prostate cancers. In the subsequent sections, we distill the essence of the latest breakthroughs unveiled at ASCO-GU 2024. The entire webinar is available for viewing on UROpedia Canada, and meeting abstracts can be accessed through the ASCO meeting library.

### KIDNEY CANCER

Dr. Jeffrey Graham provided a comprehensive overview of recent adjuvant and metastatic renal cell carcinoma (RCC) trial developments. In the adjuvant space, CheckMate 914, a phase 3, randomized, double-blind trial, investigated adjuvant nivolumab vs. placebo for localized RCC in patients at high risk of relapse post-nephrectomy. The study comprised two distinct parts: Part A examined adjuvant nivolumab plus ipilimumab

vs. placebo, while Part B focused on nivolumab monotherapy vs. placebo. Disappointingly, results from Part A, evaluating six months of adjuvant nivolumab plus ipilimumab vs. placebo, yielded negative outcomes for the primary endpoint of disease-free survival (DFS).<sup>1</sup> Similarly, results from Part B showed no discernible difference in 18-month DFS between the groups (hazard ratio [HR] 0.87, 95% confidence interval [CI] 0.62–1.21,  $p=0.396$ ).<sup>2</sup> Subgroup analysis revealed no overall benefit of adjuvant nivolumab, although potential value emerged in sarcomatoid-differentiated patients and those positive for PD-L1. In terms of toxicity, the nivolumab plus ipilimumab combination resulted in higher rates of immune-mediated toxicity, where 19% of patients in the combination arm needed high dose of steroids to manage immune-mediated adverse events (AE) compared to 6% and 2% with nivolumab and placebo, respectively.

Results from the phase 3 KEYNOTE-564 study, assessing adjuvant pembrolizumab vs. placebo in clear-cell renal cell carcinoma (ccRCC), unveiled promising overall survival (OS) outcomes.<sup>3</sup> Building on prior evidence of improved DFS post-nephrectomy, adjuvant pembrolizumab demonstrated a notable 5% absolute improvement in survival at 48 months, marking a significant milestone as the first adjuvant trial in kidney cancer to show OS benefit.<sup>3,4</sup> The one-year treatment with pembrolizumab led to an improvement in OS (HR 0.62, 95% CI 0.44–0.87,  $p=0.002$ ) in high-risk ccRCC patients compared to placebo. Encouragingly, this OS benefit extended across clinical subgroups, including patients with M0 disease, M1 NED, PD-L1 CPS <1 or CPS ≥1, and those with sarcomatoid features. This is the first adjuvant therapy to demonstrate an improvement in OS in high-risk RCC. Updated DFS data continued to demonstrate a benefit with pembrolizumab compared to placebo at the 48-month followup.

Noteworthy is the absence of new safety concerns, although it is crucial to highlight that 9.4% of pembrolizumab-treated patients experienced grade 3–4 AEs, and 7.6% required high-dose steroids. This information is paramount for patient counselling on adjuvant treatment.

In Canada, pembrolizumab is already approved for patients meeting KEYNOTE-564 eligibility criteria. Nevertheless, the decision to pursue adjuvant treatment requires careful consideration of benefits vs. risks, especially in those already cured through surgery alone. The need for better criteria to identify individuals who truly need/benefit from adjuvant treatment remains crucial. Additionally, it is noteworthy that three large randomized controlled trials (RCTs) of adjuvant/peri-operative immune checkpoint inhibitor (ICI) therapy — KN564, IM010, PROSPER, CM914 — reported negative outcomes for DFS, emphasizing the complexities in this therapeutic landscape.

Updates in the advanced RCC (aRCC) space were also presented. CheckMate 9ER evaluated nivolumab plus cabozantinib vs. sunitinib as a first-line treatment for aRCC. The initial analysis at 18.1 months demonstrated the superior performance of nivolumab plus cabozantinib in terms of progression-free survival (PFS), OS, and objective response rate (ORR) compared to sunitinib in patients with previously untreated aRCC.<sup>4</sup> The efficacy benefits persisted through the 44-month followup analysis.<sup>5</sup> Results from the 55-month followup demonstrated improved median PFS (16.4 vs. 8.4 months, HR 0.58, 95% CI 0.49–0.70) and median OS (46.5 vs. 36.0 months, HR 0.77, 95% CI 0.63–0.95) with nivolumab plus cabozantinib in the intention to treat (ITT) population.<sup>6</sup> ORR and complete response rate (CR) were 55.7% and 13.6% with the combination compared to 27.7% and 4.6% with sunitinib, respectively. Moreover, subgroup analysis based on the International Metastatic Renal Cell Carcinoma Database Consortium (IMDC) classification revealed consistent PFS, OS, and response rate (RR) benefits in the IMDC intermediate/poor-risk population; however, benefits were less pronounced in the favorable-risk population, with a PFS HR of 0.69 (95% CI 0.48–1.0) and an OS HR of 1.1 (95% CI 0.69–1.75).

CheckMate 214 examined the efficacy of first-line nivolumab plus ipilimumab vs. sunitinib in the treatment of aRCC. The combination provided substantial long-term survival benefits over sunitinib in aRCC patients.<sup>7</sup>

The long-term followup analysis, spanning over eight years of median followup, revealed consistently maintained OS benefits in both the ITT (HR 0.72) and the intermediate/poor-risk patients (HR 0.69). Moreover, these benefits continued to improve over time in favorable-risk patients (HR 0.82).<sup>8</sup>

In terms of RR, the combination demonstrated higher ORR with more sustained responses in the ITT (39% vs. 33%) and intermediate/poor-risk (42% vs. 27%) patient groups. While ORR was lower in favorable-risk patients, the median duration of response (DOR) was longer, and CR rate was higher with nivolumab plus ipilimumab vs. sunitinib across all risk groups. The overall rates of treatment-related AEs of any grade were comparable between nivolumab plus ipilimumab and sunitinib. Interestingly, while most toxicities occurred early in the treatment course, typically within the first year, some grade 3 or greater toxicity events were noted even after an extended treatment period (72 months) with nivolumab plus ipilimumab. This finding underscores the potential for immune-related toxicity to manifest after several years of treatment. Despite the wealth of data presented at ASCO-GU 2024, the available first therapeutic options for aRCC remain unchanged in Canada.

LITESPARK-005, a phase 3 study, compared the efficacy of belzutifan, a HIF-2 $\alpha$  inhibitor, with everolimus, an mTOR inhibitor, in patients with previously treated aRCC. In prior analysis, belzutifan demonstrated superior PFS and ORR compared to everolimus in aRCC patients who had progressed after immune checkpoint and anti-angiogenic therapies.<sup>9</sup> Patient-reported outcomes (PRO) revealed improved disease-specific symptoms and a better quality of life with belzutifan, along with a longer time to deterioration.<sup>10</sup> While belzutifan enhances PFS and appears more tolerable in refractory RCC when compared to everolimus (a relatively toxic drug with limited activity in aRCC), data on OS are still outstanding. Currently, Belzutifan is available in Canada exclusively for the management of von Hippel-Lindau (VHL)-associated RCC.

Finally, CheckMate 67T evaluated subcutaneous vs. intravenous administration of nivolumab in previously treated aRCC patients.<sup>11</sup> The findings indicate that subcutaneous nivolumab is non-inferior to the intravenous in terms of pharmacokinetics, drug concentrations, RR, and safety. This alternative administration method not only maintains efficacy but also presents a new option to alleviate patient treatment burden and enhance healthcare efficiency.

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## BLADDER CANCER

Dr. Nazanin Fallah-Rad outlined updates in bladder cancer, emphasizing treatment advances. In non-muscle-invasive bladder cancer (NMIBC), standard treatment includes transurethral resection of bladder tumor (TURBT) and intravesical therapies; however, for a subgroup of bacillus Calmette-Guérin (BCG)-unresponsive cases, radical cystectomy may be required. With an increasing number of patients interested in bladder preservation, other treatment modalities are needed.

The ongoing ABLE-41 study is a phase 3 trial looking at the early use of nadofaragene firadenovec-vncg in the U.S.<sup>12</sup> Nadofaragene firadenovec-vncg is the first FDA-approved intravesical gene therapy for the treatment of high-risk BCG-unresponsive NMIBC with carcinoma in situ (CIS) ± papillary tumors. CR was achieved in 53.4% of patients with BCG-unresponsive NMIBC three months after the first instillation of nadofaragene firadenovec, with a manageable safety profile.<sup>13</sup> ABLE-41 will assess key early utilization parameters and outcomes of nadofaragene firadenovec use in a real-world setting in the U.S. The primary objective is CR rate, with secondary outcomes including patterns of use, duration of CR, recurrence-free survival (RFS), cystectomy-free survival, PFS, OS, bladder cancer-specific mortality, patient, caregiver and physician experiences, adjunctive use of molecular markers, and safety.

Another study explored the potential of urinary minimal residual disease (uMRD) as a tool for assessing the molecular response of high-grade BCG-refractory NMIBC patients to nadofaragene.<sup>14</sup> This open-label, phase 2 study, comprising 43 patients, employed next-generation sequencing through the UroAMP MRD assay for uMRD testing. The primary endpoint was 12-month high-grade RFS. In both pre- and post-induction collections, uMRD identified patients with high (72%) and low (28%) recurrence risk. Post-induction, the RFS rate was 100% for low-risk and 38% for high-risk patients at 12 months.

Quantitative drug response assessment, categorizing patients into groups such as MRD-negative, MRD-complete responder, MRD-partial responder, MRD-stable, or MRD-refractory, correlated with recurrence patterns. The MRD-negative and complete responder groups showed no recurrence, contrasting with 7/12 patients who recurred in the other groups. uMRD serves as a valuable tool for quantitatively assessing the molecular response to drug treatment. The study suggests that uMRD status, determined post-treatment, holds high predictive value for future recurrence, with MRD-negative patients exhibiting no recurrences after

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“ Enfortumab vedotin plus pembrolizumab demonstrated significant benefit in mUC. ”

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nadofaragene induction. This underscores the potential of uMRD to stratify control and intervention arms in upcoming treatment trials, emphasizing its role in advancing personalized treatment approaches for high-grade BCG-refractory NMIBC patients.

PIVOT-006, an ongoing randomized, phase 3 trial, is comparing cretostimogene grenadenorepvec and observation for the treatment of intermediate-risk NMIBC following TURBT.<sup>15</sup> Cretostimogene grenadenorepvec, an intravesically delivered adenovirus, functions as a conditionally replicating agent inducing oncolytic immunotherapy. While high-risk NMIBC shows CR rates of 46–85% with cretostimogene, intermediate-risk NMIBC, despite current guidelines favoring intravesical therapy over observation, faces high recurrence rates (30–60%).

Participants will be stratified by receipt of perioperative chemotherapy and tumor grade. Patients will be randomized 1:1 to receive intravesical cretostimogene adjuvant to TURBT or TURBT alone. The primary outcome measure is RFS. Secondary outcome measures include safety, tolerability, PFS, and time to next intervention.

Advances in muscle-invasive bladder cancer (MIBC) and locally advanced urothelial carcinoma (UC) (Ia/mUC) were presented next. MIBC is an aggressive disease with high rates of relapse; current standard of care consists of trimodal therapy in select patients, and radical cystectomy (RC) with or without neoadjuvant cisplatin-based chemotherapy (NAC). Many patients, however, are cisplatin (Cis)-ineligible or have persistent muscle-invasive disease following NAC and surgery. Adjuvant cisplatin-based therapy, although not recommended for patients who received NAC, improves DFS in patients not treated with NAC, despite some associated toxicity.

Pembrolizumab, a PD-1 checkpoint inhibitor, approved as monotherapy and in combination with enfortumab vedotin for the treatment of mUC and for BCG-unresponsive high-risk NMIBC, offers an alternative. AMBASSADOR, a phase 3 randomized trial, evaluated adjuvant pembrolizumab vs. observation in high-risk MIBC and IaUC patients.<sup>16</sup> Eligibility criteria included confirmed MIBC post-surgery (with

or without NAC), and Cis-ineligible or those declining adjuvant Cis-based therapy. At a median followup of 22.3 months, pembrolizumab exhibited a median DFS of 29 months, compared to 14 months with observation (HR 0.69, 95% CI 0.54–0.87,  $p=0.001$ ). Subgroup analysis consistently favored pembrolizumab, excluding patients with upper tract primary tumors. Moreover, PD-L1 status, although prognostic, was not predictive of treatment response.

At the interim analysis, median OS was 50.9 months with pembrolizumab vs. 55.8 months with observation (HR 0.98, 95% CI 0.76–1.26,  $p=0.88$ ). Grade 3 or greater AEs occurred in 48.4% and 31.8% of patients in the pembrolizumab and observation arms, respectively. Adjuvant pembrolizumab significantly improved DFS, irrespective of PD-L1 status, supporting its viability as a therapeutic option for high-risk MIBC patients. This is in contrast to findings from the CheckMate-274 study with nivolumab, where PD-L1 status was predictive of response.<sup>17</sup> The OS endpoint was not met at the interim analysis and may have been impacted by the high number of patients in the observation arm receiving a checkpoint inhibitor. These results support adjuvant pembrolizumab as a new therapeutic option for patients with MIBC with high risk for recurrence.

A summary of adjuvant trials in this space revealed distinct outcomes. Imvigor-010 showed no DFS benefits with atezolizumab, while CheckMate-274 demonstrated a significant DFS benefit with nivolumab, which is now approved for use. The AMBASSADOR trial corroborated the significant DFS benefit of pembrolizumab.

Numerous uncertainties persist in the adjuvant therapy landscape for MIBC: Are all high-risk patients suitable for adjuvant therapy, and can we predict optimal candidates? Is a one-year course of pembrolizumab or nivolumab universally necessary? Is pembrolizumab monotherapy the ultimate solution, or will the combination with enfortumab vedotin become inevitable? In terms of perioperative strategies, two trials, KEYNOTE-B15/EV-304 and KEYNOTE-905/EV-303, are investigating the synergistic potential of enfortumab vedotin and pembrolizumab. Moreover, there is an ongoing need for predictive biomarkers in this space, with circulating DNA showing promise for adjuvant decision-making.

Artificial intelligence (AI) modelling offers another promising avenue for predicting clinical outcomes. Indeed, a multimodal deep-learning model, which integrated histopathology and molecular data, was employed to predict the clinical outcomes of NAC treatment in

the S1314-COXEN trial.<sup>18</sup> This model, incorporating histopathology image analysis, RNA expression, and spatial cell type data, outperformed individual components or dual combinations. Notably, gene expression data played a pivotal role, with the AI model autonomously recognizing the significance of biologically relevant genes, particularly recognizing the crucial role of TP63 expression in predicting pathologic CR.

While the study and application of predictive models are still in their early stages, they have not supplanted established endpoints, such as DFS or OS. Employing deep-learning models or circulating tumor DNA for treatment guidance is premature, but these tools hold immense promise for the future.

In the realm of mUC, a subgroup analysis update from the EV-302 study and updated data from PemCab were presented. EV-302, a randomized, phase 3 trial, compared enfortumab vedotin plus pembrolizumab with platinum-based chemotherapy for first-line treatment of patients with locally advanced/mUC irrespective of cisplatin eligibility or PD-L1 expression. Enfortumab vedotin plus pembrolizumab demonstrated a statistically significant and clinically meaningful benefit compared with platinum-based chemotherapy, with a median PFS of 12.5 months vs. 6.3 months (HR 0.45,  $p<0.00001$ ) and median OS of 31.5 months vs. 16.1 months (HR 0.47,  $p<0.00001$ ) in the overall patient population.<sup>19</sup> Subgroup analysis consistently demonstrated PFS and OS benefits for enfortumab vedotin plus pembrolizumab, regardless of cisplatin eligibility, PD-L1 status, or other patient characteristics.<sup>20</sup> Moreover, a consistent pattern was observed across all subgroups, with ORR of 60% for the treatment arm. These results led to FDA approval for enfortumab vedotin plus pembrolizumab for the treatment of la/mUC, positioning it as the new standard of care. The study's findings also challenge the historic reliance on cisplatin eligibility as a defining criterion for mUC patient treatment.

The anticipated increased use of this combination in clinical practice necessitates vigilant management of treatment-related toxicities, ranging from skin reactions to peripheral neuropathy, ocular disorders, and hyperglycemia. Strategies such as early dose reduction, growth factor support, topical steroids, and strict diabetes management are recommended.

Transitioning from cisplatin to antibody-drug conjugate marks a new era in UC treatment, simplifying decisions for oncologists. EV-302 eliminates the need for next-generation sequencing or specialized testing, allowing mUC patients to be eligible for treatment with enfortumab vedotin plus pembrolizumab; however, the

challenge lies in accessibility, given that the combination is significantly more expensive than traditional chemotherapy, and the durability of CR remains unknown. PemCab, a phase 2, non-randomized study, explored cabozantinib plus pembrolizumab as first-line therapy for Cis-ineligible PD-L1+, Cis-refusing, or platinum-ineligible Ia/mUC patients.<sup>21</sup> Cabozantinib, a multitargeted tyrosine kinase inhibitor, and pembrolizumab, a PD-1 inhibitor, demonstrated encouraging safety and efficacy in preclinical and clinical studies. In the trial, 46% of patients achieved an OR, with 14% experiencing a CR, and 80% demonstrating tumor shrinkage. After a median followup of approximately 14 months, PFS was 7.6 months, while OS was 17.1 months. In terms of toxicity, at least one treatment-related AE was seen in 91.6% of patients, with 83% of patients experiencing immune-related AEs requiring high-dose steroids.

Despite showing encouraging efficacy and manageable toxicity, cabozantinib plus pembrolizumab fell short of the required RR. Negative outcomes in similar trials, such as LEAP-01<sup>22</sup> and MAINCAV, which evaluated the combination of cabozantinib with maintenance avelumab, suggest exploring potentially more tolerable and potent vascular endothelial growth factor receptor tyrosine kinase inhibitors (VEGFR TKIs). The modest activity observed in the PemCab combination implies an unlikely future role for this combination in first-line therapy for advanced UC.

## PROSTATE CANCER

Dr. Michael Kolinsky presented the latest advancements in prostate cancer research. BRCAAway, a randomized, phase 2 trial, compared abiraterone, olaparib, and abiraterone plus olaparib in patients with metastatic castration-resistant prostate cancer (mCRPC) with homologous recombination-repair mutations (HRRm).<sup>23</sup> Olaparib, a PARPI inhibitor recently approved for mCRPC patients with HRRm, demonstrated synergy with androgen receptor (AR)-targeted therapy in preclinical studies, forming the basis for the BRCAAway trial. Indeed, several combination trials in this space demonstrated radiographic PFS benefit in a biomarker-selected population, including PROpel, with olaparib and abiraterone, compared to abiraterone and placebo<sup>24</sup>, MAGNITUDE with abiraterone and niraparib<sup>25</sup>, as well as TALAPRO-2 with talazoparib and enzalutamide;<sup>26</sup> however, it is unclear if the combination is most effective if administered together or sequentially.

In the BRCAAway trial, only patients with *BRCA1*, *BRCA2*, or *ATM* mutations were selected. The trial

compared abiraterone plus prednisone, olaparib alone, and olaparib plus abiraterone/prednisone, allowing for crossover. The combination therapy showed a remarkable median PFS of 39 months, surpassing the individual therapies (8.4 months with abiraterone/prednisone and 14 months with olaparib). While crossover was permitted, only a limited number of patients switched treatments, indicating attrition between lines. Median PFS at crossover was 8.3 months for olaparib and 7.2 months for abiraterone, with a consistent 16-month PFS from randomization for both groups. Front-line combination therapy outperformed sequential or single-agent treatments. The combination of olaparib plus abiraterone/prednisone, as well as niraparib plus abiraterone/prednisone have received approval as a front-line therapy for mCRPC patients with *BRCA1/2* *DDR* alterations in the U.S. and Canada. Although talazoparib plus enzalutamide gained approval in the U.S., this combination is yet to be approved in Canada.

The CONTACT-02 study, a phase 3 trial, investigated cabozantinib plus atezolizumab vs. second-line novel hormonal therapy (NHT) in mCRPC patients with soft tissue metastasis who progressed on a first NHT.<sup>27</sup> Patients with mCRPC who progressed on NHT have poor prognosis, particularly those with visceral metastasis. Following NHT, chemotherapy or a second NHT are the only broadly available non-targeted treatments; however, chemotherapy use is limited due to toxicity and frailty with ADT use and advanced age.

Cabozantinib has demonstrated rPFS and OS benefits in a subgroup of patients with visceral metastasis in the phase 3 COMET-1 study of patients with treatment-refractory mCRPC.<sup>28</sup> Cabozantinib may promote an immune-permissive environment, which may enhance responses to ICIs. The combination of cabozantinib plus atezolizumab showed a significant rPFS benefit compared to NHT (HR 0.65, 95% CI 0.50–0.84,  $p=0.0007$ ), particularly in subgroups with liver metastases and prior docetaxel; however, median PFS was only 6.3 vs. 4.2 months, the ORR was modest, and AEs led to therapy discontinuation in a higher percentage of patients in the combination arm compared to NHT.

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“Front-line combination therapy outperformed sequential or single-agent treatments in mCRPC.”

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The GETUG-AFU 18 trial evaluated dose-escalation radiotherapy (80 vs. 70 Gy) combined with long-term androgen deprivation (ADT) in high-risk localized prostate cancers.<sup>29</sup> Long-term ADT (>18 months) is the standard of care in high-risk prostate cancer, and is superior to short-term ADT (4–6 months) even with high-dose radiotherapy (RT).<sup>30</sup> The study revealed that at the 10-year mark, PFS, cancer-specific survival, and OS (HR 0.61, 95% CI 0.44–0.85,  $p=0.0039$ ) were significantly higher in the 80 Gy arm compared to the 70 Gy arm. The higher dose was not associated with greater toxicities and had no adverse impact on quality of life, accepting that a higher proportion of patients in the 80 Gy arm received intensity-modulated radiotherapy (IMRT) compared to the 70 Gy arm (80.6% vs. 58.6%,  $p<0.001$ ). These findings suggest that even with long-term ADT, a higher dose of radiation (80 Gy) improves outcomes in high-risk prostate cancer without compromising patient well-being. The use of IMRT was crucial to achieving these results.

FORMULA-509, a randomized trial in patients with biochemical recurrence after radical prostatectomy (RP) who received salvage radiotherapy, compared the impact of six months of gonadotropin-releasing hormone (GnRH) agonist with either bicalutamide or abiraterone acetate plus prednisone (AAP) and apalutamide.<sup>31</sup> Previous findings demonstrated a significant benefit in metastasis-free survival (MFS) (HR 0.32) with the addition of AAP and apalutamide compared to bicalutamide in patients with baseline prostate-specific antigen (PSA) >0.5, albeit with higher physician-reported AEs, including rash and hypertension.

This benefit was less pronounced in the overall study population (HR for MFS 0.57, 90% CI 0.33–1.01,  $p=0.05$ ).<sup>32</sup> In this context, the study delved into patient-reported health-related quality of life (HRQoL) outcomes using the EPIC-26 (symptom assessment tool), PROMIS (fatigue), and SLUMS (mental status) tools at various time points. Interestingly, no discernible differences in any EPIC-26 domains, patient-reported fatigue, or mental status were identified between the two treatment groups, indicating that the incorporation of AAP and apalutamide into salvage radiotherapy with six months of ADT enhanced oncologic outcomes without perceptible impacts on patient-reported HRQoL up to one year post-treatment compared to bicalutamide.

The ACE study, a prospective evaluation of cognitive function in patients with mCRPC treated with abiraterone acetate (AA) or enzalutamide, used CANTAB and FACT questionnaires to assess cognitive function at baseline, 3–4 months, six months, and 12 months

on treatment.<sup>33</sup> Despite no significant differences in mean composite cognitive outcomes or individual components between treatments, the enzalutamide group exhibited a notable deterioration in the reaction time task. Additionally, patients on enzalutamide reported higher rates of fatigue and depression compared to both baseline and the AA group. While composite cognitive outcomes were comparable, the study highlights the importance of considering patient-reported factors, such as fatigue, depression, and perceived cognitive ability, as well as reaction time, for treatment optimization and supportive strategies.

In another investigation, the usage patterns of prostate-specific membrane antigen positron emission tomography/computed tomography (PSMA-PET/CT) scans for initial staging and recurrence in a multicentered hospital system were examined.<sup>34</sup> Following the implementation of PSMA-PET/CT imaging, it became the modality of choice for initial staging in 80% of patients, leading to a decrease in the use of conventional imaging. For biochemical recurrence, PSMA-PET was consistently the preferred imaging modality, chosen for 98% of patients.

Furthermore, a multicenter, retrospective study aimed to identify the staging outcomes (low- vs high-volume disease) in patients who underwent conventional imaging followed by PSMA-PET.<sup>35</sup> The study revealed that based on PSMA-PET, 43.9% of patients had PSMA-high-volume disease (HVD), 33.3% had PSMA-low-volume disease (LVD), and 22.8% had no PSMA-positive lesions or only local/NI-disease. Stage migration occurred in 38.6% of patients, with 22.0% being upstaged and 22.8% being downstaged by PSMA-PET. It is noteworthy that stage migration between LVD and HVD from conventional imaging to PSMA-PET occurs both by up- and downstaging, emphasizing the need to redefine HVD/LVD based on PSMA-PET/CT for a more accurate representation of patients' outcomes.

## CONCLUSIONS

ASCO-GU 2024 unveiled state-of-the-art treatment options and diagnostic breakthroughs, showcasing the latest advancements in kidney, prostate, and bladder cancers.

In kidney cancer, the KEYNOTE-564 study demonstrated promising OS benefits with adjuvant pembrolizumab in ccRCC. Despite challenges in adjuvant therapy, this presents a significant milestone. In aRCC, studies like CheckMate 9ER and CheckMate 214 highlighted the efficacy of nivolumab plus cabozantinib and nivolumab plus ipilimumab as first-line treatments.

Bladder cancer advances include the ABLE-41 trial, evaluating nadofaragene firadenovec-vncg for BCG-unresponsive NMIBC. Additionally, PIVOT-006 explored cretostimogene grenadenorepvec for intermediate-risk NMIBC, while the AMBASSADOR trial supported adjuvant pembrolizumab as a new therapeutic option for high-risk MIBC patients.

Metastatic urothelial cancer sees significant progress with enfortumab vedotin plus pembrolizumab in EV-302, challenging conventional norms; however, challenges in accessibility and toxicity management persist. The integration of AI and predictive biomarkers, such as circulating DNA, heralds a personalized approach, emphasizing the ongoing evolution in bladder cancer therapeutics.

In prostate cancer, the BRCAAway trial highlighted the superiority of olaparib plus abiraterone/prednisone as a front-line therapy for mCRPC patients with BRCA1/2 DDR alterations. CONTACT-02 explored cabozantinib plus atezolizumab in mCRPC, showing potential benefits, particularly in subgroups with liver metastases. The GETUG-AFU 18 trial demonstrated improved outcomes with dose-escalated radiotherapy in high-risk localized prostate cancers. FORMULA-509 indicated that AAP and apalutamide in salvage radiotherapy improved oncologic outcomes without affecting patient-reported HRQoL. The ACE study further emphasized considering patient-reported factors in mCRPC treatment. PSMA-PET/CT emerged as the preferred imaging modality for staging and recurrence.

Overall, these advances contribute to the evolving landscape of GU cancers, offering new treatment options and refining strategies for better patient outcomes.

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