

Real-world treatment patterns and outcomes in patients with metastatic androgen pathway modulation-resistant prostate cancer (mAPMR) who have previously received androgen receptor pathway inhibitor (ARPI), taxane, and ¹⁷⁷Lu-PSMA-617 therapy: a PRECISION data platform analysis

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Background

ARPIs, taxane chemotherapy, and ¹⁷⁷Lu-PSMA-617 have each been shown to prolong survival in patients with mAPMR (previously termed metastatic castration-resistant prostate cancer), yet disease progression remains common and subsequent treatment options are limited. The aim of this study was to evaluate treatment patterns and outcomes in real-world US clinical practice among patients previously treated with ARPI, taxane, and ¹⁷⁷Lu-PSMA-617.

Methods

This retrospective, non-interventional study leveraged the PRECISION data platform, a harmonized dataset of patients with advanced prostate cancer across diverse US clinical settings. Adult men diagnosed with mAPMR and with evidence of prior treatment with ≥ 1 ARPI, ≥ 1 taxane, and ¹⁷⁷Lu-PSMA-617 were identified. The index date was the last administration of the most recently received of these treatments and had to fall between 01/01/2021 and 12/31/2025. Descriptive statistics were used to evaluate patient characteristics at index and treatment patterns pre- and post-index. Kaplan–Meier methods were used to estimate progression-free (PFS) and overall survival (OS).

Results

In total, 943 patients were included. The median age was 73 years; 73% were White and 13% Black; 80% were treated in community settings and 87% by oncologists. Overall, 59% of patients had Gleason scores ≥ 8 and 44% had metastases at initial prostate cancer diagnosis. Pre-index, 55% of patients had received ≥ 2 ARPIs and 32% had received 2 taxanes; nearly half (47%) of patients had also received other systemic treatments for metastatic prostate cancer, with a median of 5 lines of therapy (interquartile range [IQR] 3–8) from mAPMR diagnosis to index. The median number of ¹⁷⁷Lu-PSMA-617 cycles pre-index was 4 (IQR 2–6). 27% of patients (n=254) had evidence of initiating another treatment post-index. Among post-index treatments, ARPIs were most common (60%), followed by poly (ADP-ribose) polymerase inhibitors (PARPi; 9%), non-taxane chemotherapies (7%), ARPI + PARPi (7%), and pembrolizumab (4%). Rechallenge with ¹⁷⁷Lu-PSMA-617 (defined as reinitiation of ¹⁷⁷Lu-PSMA-617 post-index, with ≥ 1 other non-ARPI treatment administered between pre-index ¹⁷⁷Lu-PSMA-617 and reinitiation) was also observed (3%). In the entire cohort, the median PFS was 3.3 months (95% confidence interval [CI] 3.0–3.8 months) and median OS was 7.7 months (95% CI 6.8–8.7 months).

Conclusions

In this large real-world study of patients with mAPMR previously treated with ≥ 1 ARPI, ≥ 1 taxane, and ^{177}Lu -PSMA-617, most were heavily pretreated, with a median of 5 lines of therapy from mAPMR diagnosis to index. Over 70% had no evidence of initiating a subsequent therapy post-index; among those who did, ARPI was the most common treatment. Survival outcomes were poor, highlighting a substantial unmet need for effective treatments for late-line mAPMR, particularly following ^{177}Lu -PSMA-617.

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Conflicts of interest disclosure statement

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