Characteristics and Outcomes of Patients with Metastatic Castration-Resistant Prostate Cancer Treated with Lutetium-177–PSMA-617 in a Real-World Setting

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Background

- The VISION trial demonstrated a survival benefit of Lu-177-PSMA-617-RLT (PSMA-RLT) treatment for patients with PSMA-positive metastatic castration-resistant prostate cancer (mCRPC) (1).
- Outcomes in a real-world setting are unknown.
- PSMA-RLT has been used at University Hospital Essen (UKE) in Germany outside of studies since 2017.
- This retrospective cohort study describes characteristics and real-world median overall survival (mOS) of patients with mCRPC treated with PSMA-RLT.
- Findings are contextualized with results from a US-based mCRPC cohort that did not receive PSMA-RLT as it was not available routinely in the US during this time period.

Methods

- The UKE cohort included mCRPC patients treated with at least 1 cycle of PSMA-RLT from 11/2017 to 10/2022. Data contained structured and unstructured data from UKE's electronic health record (EHR).
- The US cohort from the US nationwide Flatiron Health de-identified database included patients with mCRPC diagnosis from 01/2014 to 09/2021 who received therapy (= index therapy) following at least 1 taxane-based chemotherapy and 1 androgen receptor pathway inhibitor (ARPI).
- For both cohorts EHR-derived unstructured data was curated via technology-enabled abstraction.

Results

Patients from UKE were heavily pretreated and had extensive disease burden.

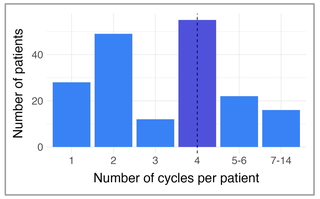
Table 1: Patient baseline characteristics

Baseline characteristics	UKE (N = 219)	US (N = 857)
Median Age at index*, yrs (IQR)	73 (67, 78)	71 (65, 78)
Median Time to index, mos (IQR)		
Median time from initial dx to index	69 (42, 128)	49 (27, 99)
Median time from mCRPC dx to index	23 (13, 40)	16 (10, 25)
Median PSA at index (IQR)	137 (39, 559)	83 (22, 308)
Gleason score at initial dx, %		
8-10	57.6	56.7
Pre-index Sites of Metastases, %		
Bone	95.0	91.5
Liver	12.8	15.1
Lymph nodes (regional + distant)	82.6	51.5
Lung	18.3	9.8
Pre-index treatment, %		
ARPI		
1	37.3	65.0
2+	58.9	35.0
Taxane		
1	55.5	88.9
2+	27.8	11.1

** index UKE: Date of 1st PSMA-RLT cycle; index US: Start of tx following ≥ 1 taxane and ≥ 1 ARPI*

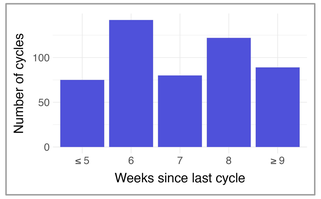
At UKE 727 PSMA-RLT cycles were administered; patients received a median of 4 cycles and time between cycles typically ranged from 6-8 weeks.

Figure 1: Number of RLT cycles received



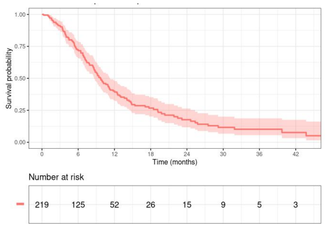
In order to ensure a minimum of 6 month follow up after the first injection this analysis was restricted to patients with an index date not later than April 2022, N=182

Figure 2: Time interval between cycles



Median OS* was 9.8 and 8.5 months from index date in the UKE and US cohort, respectively.

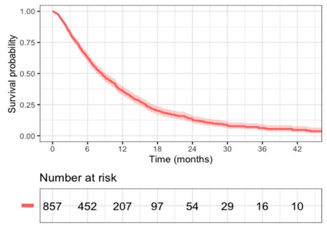
Figure 3: Overall survival in UKE cohort



mOS: 9.86 (CI: 9.76, 11.3)

	6 months	12 months	24 months
Survival probability (CI)	0.72 (0.66, 0.79)	0.40 (0.33, 0.49)	0.17 (0.12, 0.26)

Figure 4: Overall survival in US cohort



mOS: 8.48 (CI: 7.59, 9.13)

	6 months	12 months	24 months
Survival probability (CI)	0.63 (0.60, 0.66)	0.36 (0.33, 0.40)	0.13 (0.11, 0.16)

* K-M survival curves and mOS estimates are not adjusted for covariates

Discussion and Conclusions

- This study provided the unique opportunity to understand characteristics and describe real-world outcomes for patients with refractory mCRPC treated with PSMA-RLT and a similar US population that received standard of care treatment before PSMA-RLT was used in the US.
- UKE patients were heavily pre-treated with extensive disease burden at PSMA RLT start.
- The study design did not allow for a direct comparison between the US and UKE cohorts. Nevertheless the study demonstrated promising real-world outcomes for patients with mCRPC who received PSMA-RLT.

References

1. Sartor O. et al. Lutetium 177-PSMA-617 for Metastatic Castration-Resistant Prostate Cancer. *N Engl J Med.2021; 385(12):1091-1103*

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