

MINI REVIEW

# PSMA-Directed Radioligand Therapy for Metastatic Prostate Cancer

Ellen Heitlinger<sup>1a</sup>

<sup>1</sup> Scientific Editorial Office, healthbook TIMES Oncology Hematology

Keywords: Prostate cancer, radioligands, theranostics, PSMA ligands

<https://doi.org/10.36000/HBT.OH.2023.18.130>

---

healthbook TIMES Oncology Hematology

Vol. 18, Issue 4, 2023

---

Prostate cancer is the leading cause of total years of life lost due to cancer in men, despite developments in treatment and technology. Improved outcomes and novel therapy concepts, such as theranostics, are urgently needed. A typical example of theranostics, defined as a combination of therapy and diagnostic, is the use of radiolabeled ligands that bind to a specific target on a cancer cell and emit radiation, allowing treatment planning, dosimetry and imaging using positron emission tomography (PET). Some radioligands, such as <sup>177</sup>Lu-PSMA-617, can also emit  $\beta$ -radiation which leads to apoptosis of tumor cells. At the Swiss Oncology and Hematology Congress (SOHC) 2023, Prof. Dr Wolfgang Fendler from Essen and Prof. Dr Irene Burger from Zurich discussed results from the studies assessing <sup>177</sup>Lu-PSMA-617 and <sup>177</sup>Lu-PSMA-other ligands as a treatment for patients with prostate cancer.

## The evidence for LuPSMA in prostate cancer

Prostate cancer is the leading cause of death due to cancer in men.<sup>1,2</sup> A typical example of theranostics, defined as a combination of therapy and diagnostic, is the use of radiolabeled ligands that bind to a specific target on cancer cells and emit radiation, allowing treatment planning, dosimetry and imaging using positron emission tomography (PET).<sup>3</sup> Prostate-specific membrane antigen (PSMA) is a type II transmembrane-bound glycoprotein highly expressed in prostate cancer, particularly in poorly differentiated primary tumors and metastatic lesions.<sup>4-6</sup> The PSMA-targeted radioligand <sup>177</sup>Lutetium (Lu)-PSMA-617 (LuPSMA) has emerged as a promising therapeutic option for patients with advanced prostate cancer. LuPSMA is a small molecule that delivers high levels of  $\beta$ -radiation to PSMA-expressing cells. It is the first targeted radioligand therapy approved for the treatment of adult patients with PSMA-positive metastatic castration-resistant prostate cancer (mCRPC) who have been treated with androgen receptor (AR) pathway inhibition and taxane-based chemotherapy,<sup>7</sup> following the results from the open-label, phase III VISION trial.<sup>8</sup>

---

<sup>a</sup> Corresponding address:  
Ellen Heitlinger  
healthbook TIMES Oncology Hematology  
Scientific Editorial Office  
Maneggstrasse 45  
CH-8041 Zurich  
Switzerland  
Email: [ellen.heitlinger@healthbook.ch](mailto:ellen.heitlinger@healthbook.ch)

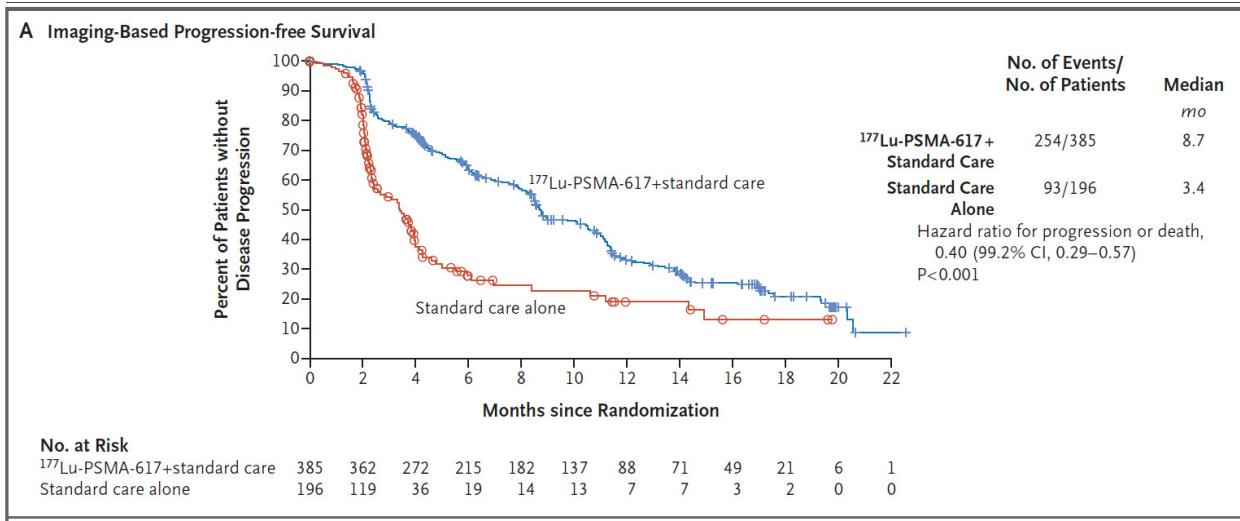


Figure 1. Radiographic progression-free survival in the VISION trial.

Adapted from Sartor et al. 2021.<sup>8</sup>

VISION was designed based on positive data from the randomized phase II TheraP trial that aimed to assess LuPSMA in patients with mCRPC for whom cabazitaxel was considered the next appropriate standard treatment.<sup>9</sup> The study met its primary endpoint of prostate-specific antigen (PSA) response defined as a reduction of at least 50% from baseline, with patients in the LuPSMA arm (n=99) achieving significantly improved rates of PSA response versus those in the cabazitaxel arm (n=101) (66% vs 44%; p=0.0016). After a median follow-up of 3 years, overall survival (OS) was similar in patients assigned to LuPSMA versus cabazitaxel (restricted mean survival time [RMST], 19.1 months vs 19.6 months; HR: 0.97 [95% CI: 0.70–1.40]; p=0.99).<sup>10</sup> However, LuPSMA significantly delayed progression versus cabazitaxel (HR: 0.62 [95% CI: 0.45–0.85]; p=0.0028), with RMST of 7.1 months versus 5.0 months, respectively.

The registrational, open-label VISION trial further investigated LuPSMA in patients with mCRPC previously treated with ≥1 androgen receptor-pathway inhibitor (ARPI) and 1–2 taxane regimens and who had PSMA-positive <sup>68</sup>Ga-PSMA-11 PET/CT scans.<sup>8</sup> In total, 831 patients were randomized 2:1 to receive either LuPSMA (7.4 GBq every 6 weeks for 4–6 cycles) plus protocol-permitted standard of care (SoC) or SoC alone. At a median follow-up of 20.9 months, LuPSMA plus SoC versus SoC alone significantly improved radiographic progression-free survival (PFS) (median: 8.7 months vs 3.4 months; HR: 0.40 [99.2% CI: 0.29–0.57]; p<0.001) (Figure 1) and OS (median: 15.3 months vs 11.3 months; HR: 0.62 [95% CI: 0.52–0.74]; p<0.001). Among patients with measurable target lesions (n=248), 51% achieved a partial response or complete response in the Lu-PSMA plus SoC arm compared with 3% in the SoC alone arm.

Further analyses of VISION showed that LuPSMA plus SoC delayed time to worsening in health-related quality of life (HRQoL) compared with SoC alone.<sup>11</sup> More specifically, time to worsening was delayed with LuPSMA-based treatment versus SoC alone for FACT-P score (HR: 0.54) and subdomains, BPI-SF pain intensity score (HR: 0.52) and EQ-5D-5L utility score (HR: 0.65). LuPSMA was also associated with prolonged time to first skeletal event or death (median, 11.5 months vs 6.8 months with SoC alone; HR: 0.50 [95% CI: 0.40–0.62]).

The safety profile of LuPSMA was generally manageable.<sup>8</sup> The incidence of hematologic adverse events (AEs) of grade  $\geq 3$  during treatment was higher in the LuPSMA arm than in the control group and most commonly included anemia (12.9% vs 4.9%), thrombocytopenia (7.9% vs 1.0%), lymphopenia (7.8% vs 0.5%) and leukopenia (2.5% vs 0.5%). LuPSMA was also associated with low salivary gland and renal toxicity (grade  $\geq 3$ : 0% and 3.4%). Data further showed that the blood counts and the creatinine levels remained stable over time under LuPSMA treatment.<sup>11</sup>

### **Predictors of response to LuPSMA**

Theranostics can provide more precise and individualized treatment decisions in mCRPC. Prognostic nomograms have been developed to predict outcomes after LuPSMA therapy in patients with mCRPC by using both clinical trial and real-world data.<sup>12</sup> Based on multivariate analysis, various characteristics were identified that predict OS outcomes with LuPSMA, including more traditional characteristics, such as age, time since diagnosis, hemoglobin level and chemotherapy status, and variables relevant in this patient population, including tumor standardized uptake value (SUV), number and site of metastatic lesions. By incorporating these data, patients were stratified into low-risk versus high-risk groups, with a median OS of 24.9 months versus 7.4 months ( $p < 0.0001$ ), respectively, in the validation cohort. Results further showed that patients with a higher PSMA expression had more favorable clinical outcomes, while those with bone involvement were less likely to benefit from LuPSMA therapy.

These results have been confirmed in a VISION substudy which aimed to assess the prognostic value of baseline  $^{68}\text{Ga}$ -PSMA-11 PET imaging in men undergoing LuPSMA therapy.<sup>13</sup> Data from this analysis support the use of quantitative PSMA-PET imaging as a prognostic tool, showing a strong link between higher whole-body  $\text{SUV}_{\text{mean}}$  and improved treatment outcomes with LuPSMA in patients with prostate cancer. Patients in the highest versus lowest  $\text{SUV}_{\text{mean}}$  quartile had a longer radiographic PFS (median, 14.1 months vs 5.8 months) and OS (median, 21.4 months vs 14.5 months). These results suggest that patients with a higher  $\text{SUV}_{\text{mean}}$  identified by  $^{68}\text{Ga}$ -PSMA-11 benefit most from LuPSMA therapy.

Recently, a novel framework called Response Evaluation Criteria In PSMA Imaging (RECIP) has been proposed for treatment response evaluation using PSMA-PET/computed tomography (CT) in patients with metastatic prostate cancer.<sup>14</sup> RECIP 1.0 was developed using the appearance of new lesions and changes in PSMA-positive tumor volume (PSMA-VOL). Median OS by RECIP response was significantly lower in the RECIP-PD group (defined as an increase  $\geq 20\%$  in PSMA-VOL and appearance of new lesions) compared with the RECIP-PR group (decline  $\geq 30\%$  in PSMA-VOL and no appearance of new lesions) and RECIP-SD group (any other condition) (median OS of 8.3 months vs 21.7 months and 13.1 months;  $p < 0.001$ ). These data suggest that PSMA-PET/CT by RECIP 1.0 is prognostic for OS and can be used as a response biomarker to monitor the early efficacy of LuPSMA in mCRPC patients.

### Emerging LuPSMA-based treatment regimens

Further studies have provided evidence that LuPSMA is an effective treatment option for mCRPC, both in earlier lines of therapy (PSMAFour<sup>15</sup> and ENZA-p<sup>16</sup> studies) and after treatment with radium 223 (RALU<sup>17,18</sup>). Ongoing clinical studies are currently assessing LuPSMA also in patients with metastatic hormone-sensitive prostate cancer (mHSPC)<sup>19,20</sup> and as a neoadjuvant treatment.<sup>21</sup> Several trials evaluated the safety and efficacy of LuPSMA in combination with other agents including abiraterone acetate,<sup>22</sup> olaparib,<sup>23</sup> enzalutamide,<sup>24</sup> and pembrolizumab.<sup>25</sup>

Furthermore, other radiolabeled PSMA-targeting small molecules are being investigated as an alternative to <sup>177</sup>LuPSMA-617. PSMA I&T,<sup>26</sup> which contains a DOTAGA chelator (whereas LuPSMA-617 contains a DOTA chelator), demonstrated favorable safety in mCRPC patients<sup>27</sup> and in high-risk localized prostate cancer before robot-assisted radical prostatectomy (RARP).<sup>28</sup> The ongoing phase III SPLASH study<sup>29</sup> evaluates PSMA I&T in mCRPC patients after second-line hormonal treatment. The primary completion of the trial is expected in December 2023. The derivative of LuPSMA-617 labeled with actinium-225 (<sup>225</sup>Ac-PSMA-617) has shown remarkable therapeutic efficacy in patients with mCRPC.<sup>30,31</sup> The phase I/II VIOLET trial is currently recruiting patients to evaluate PSMA I&T labeled with terbium-161 (<sup>161</sup>Tb-PSMA I&T) in mCRPC.<sup>32</sup>

### Conclusions

- LuPSMA therapy has demonstrated prolonged survival in patients with mCRPC in multiple clinical trials, with favorable safety and considerably improved patient-reported outcomes.
- LuPSMA therapy is currently approved for use in the third-line setting, after new hormonal therapy and chemotherapy in patients with mCRPC.

- PSMA imaging can be used for precision oncology to identify patients for LuPSMA therapy and assess their response to treatment.

## CASE REPORT

Prof. Dr Wolfgang Fendler presented a journey of a 71-year-old patient who was diagnosed with prostate cancer in December 2005 (cT2 pN1 [2/7] M0). The patient presented with a Gleason score of 8 (3+5) and an initial prostate-specific antigen (PSA) of 44 ng/mL; the *BRCA* status was unknown. He received luteinizing hormone-releasing hormone (LHRH) therapy, followed by prostatectomy and pelvic lymphadenectomy with resection of nodal metastases in January 2006. Due to a PSA rise, salvage local radiation therapy was performed in September 2009, achieving a good response (PSA nadir: 0.04 ng/mL). In June 2019, an elevated PSA level (1.2 ng/mL) was detected, and the patient switched to bicalutamide. Due to further PSA increase (3.0 ng/mL), apalutamide treatment was initiated in March 2020 but discontinued because of an allergic reaction.

In May 2020, PSMA PET/CT scan revealed progressive local recurrence with infiltration and metastases to the penis, local lymph nodes and os sacrum (miTr N2 M1b [oligo] M1c). Between July and November 2020, the patient received 6 cycles of docetaxel, with a further PSA rise. Therapy with enzalutamide was then prescribed but the PSA level continued to increase. In August 2021, a CT-guided biopsy of an S6 liver lesion showed granulomatous inflammation. A biopsy of the sacral bone metastasis confirmed prostate cancer histologically, as well as *BRCA* wild-type status.

At this point, the patient initiated LuPSMA therapy, with two cycles performed: the first cycle at a dose of 7.6 GBq (September 2021) and the second cycle at a dose of 7.4 GBq (November 2021). A partial response was achieved, with a PSA decrease of more than 50% and a partial response by the RECIP criteria, with decreasing metastasis size.

### *Conflicts of interest*

The author has declared that the article was written in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

### *Funding*

The author has declared that no financial support was received from any organization for the submitted work.

### *Author contributions*

The author has created and approved the final manuscript.

Submitted: November 28, 2023 CET, Accepted: December 07, 2023 CET



This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CCBY-NC-SA-4.0). View this license's legal deed at <https://creativecommons.org/licenses/by-nc-sa/4.0> and legal code at <https://creativecommons.org/licenses/by-nc-sa/4.0/legalcode> for more information.

## REFERENCES

1. Kocarnik JM, Compton K, Dean FE, et al. Cancer Incidence, Mortality, Years of Life Lost, Years Lived With Disability, and Disability-Adjusted Life Years for 29 Cancer Groups From 2010 to 2019: A Systematic Analysis for the Global Burden of Disease Study 2019. *JAMA Oncol.* 2022;8(3):420-444. doi:10.1001/jamaoncol.2021.6987
2. Roth GA, Abate D, Abate KH, et al. Global, regional, and national age-sex-specific mortality for 282 causes of death in 195 countries and territories, 1980–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The Lancet.* 2018;392(10159):1736-1788. doi:10.1016/s0140-6736(18)32203-7
3. Perera M, Papa N, Christidis D, et al. Sensitivity, Specificity, and Predictors of Positive 68 Ga–Prostate-specific Membrane Antigen Positron Emission Tomography in Advanced Prostate Cancer: A Systematic Review and Meta-analysis. *European Urology.* 2016;70(6):926-937. doi:10.1016/j.eururo.2016.06.021
4. Silver DA, Pellicer I, Fair WR, et al. Prostate-specific membrane antigen expression in normal and malignant human tissues. *Clin Cancer Res.* 1997;3(1):81-85.
5. Wright GL Jr, Haley C, Beckett ML, Schellhammer PF. Expression of prostate-specific membrane antigen in normal, benign, and malignant prostate tissues. *Urol Oncol.* 1995;1(1):18-28. doi:10.1016/1078-1439(95)00002-y
6. Paschalis A, Sheehan B, Riisnaes R, et al. Prostate-specific Membrane Antigen Heterogeneity and DNA Repair Defects in Prostate Cancer. *Eur Urol.* 2019;76(4):469-478. doi:10.1016/j.eururo.2019.06.030
7. PLUVICTO® (Lutetium(177Lu)-Vipivotid-Tetraxetan). Information for healthcare professionals. Swissmedic; 2022. Accessed November 2023. <http://www.swissmedicinfo.ch>
8. Sartor O, de Bono J, Chi KN, et al. Lutetium-177–PSMA-617 for Metastatic Castration-Resistant Prostate Cancer. *N Engl J Med.* 2021;385(12):1091-1103. doi:10.1056/nejmoa2107322
9. Hofman MS, Emmett L, Sandhu S, et al. [(177)Lu]Lu-PSMA-617 versus cabazitaxel in patients with metastatic castration-resistant prostate cancer (TheraP): a randomised, open-label, phase 2 trial. *Lancet.* 2021;397(10276):797-804. doi:10.1016/s0140-6736(21)00237-3
10. Hofman MS, Emmett L, Sandhu S, et al. TheraP: <sup>177</sup>Lu-PSMA-617 (LuPSMA) versus cabazitaxel in metastatic castration-resistant prostate cancer (mCRPC) progressing after docetaxel—Overall survival after median follow-up of 3 years (ANZUP 1603). *Journal of Clinical Oncology.* 2022;40(16\_suppl):5000-5000. doi:10.1200/jco.2022.40.16\_suppl.5000
11. Fizazi K, Herrmann K, Krause BJ, et al. Health-related quality of life and pain outcomes with [(177)Lu]Lu-PSMA-617 plus standard of care versus standard of care in patients with metastatic castration-resistant prostate cancer (VISION): a multicentre, open-label, randomised, phase 3 trial. *Lancet Oncol.* 2023;24(6):597-610. doi:10.1016/s1470-2045(23)00158-4
12. Gafita A, Calais J, Grogan TR, et al. Nomograms to predict outcomes after (177)Lu-PSMA therapy in men with metastatic castration-resistant prostate cancer: an international, multicentre, retrospective study. *Lancet Oncol.* 2021;22(8):1115-1125. doi:10.1016/s1470-2045(21)00274-6
13. Kuo P, Hesterman J, Rahbar K, et al. [<sup>68</sup>Ga]Ga-PSMA-11 PET baseline imaging as a prognostic tool for clinical outcomes to [<sup>177</sup>Lu]Lu-PSMA-617 in patients with mCRPC: A VISION substudy. *Journal of Clinical Oncology.* 2022;40(16\_suppl):5002-5002. doi:10.1200/jco.2022.40.16\_suppl.5002
14. Gafita A, Djaileb L, Rauscher I, et al. Response Evaluation Criteria in PSMA PET/CT (RECIP 1.0) in Metastatic Castration-resistant Prostate Cancer. *Radiology.* 2023;308(1):e222148. doi:10.1148/radiol.222148

15. Sartor O, Castellano Gauna DE, Herrmann K, et al. Phase III trial of [<sup>177</sup>Lu]Lu-PSMA-617 in taxane-naïve patients with metastatic castration-resistant prostate cancer (PSMAfore). Presented at: ESMO Congress 2023; 20–24 October 2023. Madrid, Spain. Oral presentation LBA13.
16. Emmett L, Subramaniam S, Crumbaker M, et al. LBA84 Enzalutamide and <sup>177</sup>Lu-PSMA-617 in poor-risk, metastatic, castration-resistant prostate cancer (mCRPC): A randomised, phase II trial: ENZA-p (ANZUP 1901). *Annals of Oncology*. 2023;34:S1325. doi:10.1016/j.annonc.2023.10.086
17. Rahbar K, Essler M, Eiber M, et al. Safety and survival outcomes in patients (pts) with metastatic castration-resistant prostate cancer (mCRPC) treated with lutetium-177–prostate-specific membrane antigen (<sup>177</sup>Lu-PSMA) after radium-223 (<sup>223</sup>Ra): Interim analysis of the RALU study. *Journal of Clinical Oncology*. 2022;40(16\_suppl):5040-5040. doi:10.1200/jco.2022.40.16\_suppl.5040
18. Rahbar K, Essler M, Eiber M, et al. (<sup>177</sup>Lu)-Prostate-Specific Membrane Antigen Therapy in Patients with Metastatic Castration-Resistant Prostate Cancer and Prior(<sup>223</sup>Ra) (RALU Study). *J Nucl Med*. 2023;64(12):1925-1931. doi:10.2967/jnumed.123.266125
19. Azad A, Dhiantravan N, Emmett L, et al. UpFrontPSMA: A randomized phase II study of sequential <sup>177</sup>Lu-PSMA617 and docetaxel versus docetaxel in metastatic hormone-naïve prostate cancer (mHNPC). *Journal of Clinical Oncology*. 2021;39(6\_suppl):TPS180-TPS180. doi:10.1200/jco.2021.39.6\_suppl.tps180
20. Sartor AO, Tagawa ST, Saad F, et al. PSMAddition: A phase 3 trial to compare treatment with <sup>177</sup>Lu-PSMA-617 plus standard of care (SOC) versus SOC alone in patients with metastatic hormone-sensitive prostate cancer. *Journal of Clinical Oncology*. 2022;40(6\_suppl):TPS210-TPS210. doi:10.1200/jco.2022.40.6\_suppl.tps210
21. Eapen RS, Buteau JP, Jackson P, et al. Administering [<sup>177</sup>Lu]Lu-PSMA-617 Prior to Radical Prostatectomy in Men with High-risk Localised Prostate Cancer (LuTectomy): A Single-centre, Single-arm, Phase 1/2 Study. *European Urology*. doi:10.1016/j.eururo.2023.08.026
22. Suman S, Parghane RV, Joshi A, Prabhash K, Talole S, Basu S. Combined (<sup>177</sup>Lu)-PSMA-617 PRLT and abiraterone acetate versus (<sup>177</sup>Lu)-PSMA-617 PRLT monotherapy in metastatic castration-resistant prostate cancer: An observational study comparing the response and durability. *Prostate*. 2021;81(15):1225-1234. doi:10.1002/pros.24219
23. Sandhu S, Joshua AM, Emmett L, et al. LuPARP: Phase 1 trial of <sup>177</sup>Lu-PSMA-617 and olaparib in patients with metastatic castration resistant prostate cancer (mCRPC). *Journal of Clinical Oncology*. 2023;41(16\_suppl):5005-5005. doi:10.1200/jco.2023.41.16\_suppl.5005
24. Emmett L, Subramaniam S, Crumbaker M, et al. Enzalutamide and <sup>177</sup>Lu-PSMA-617 in poor-risk, metastatic, castration-resistant prostate cancer (mCRPC): A randomised, phase II trial: ENZA-p (ANZUP 1901). Presented at: the European Society of Medical Oncology (ESMO) Congress. October 20-24, 2023. Madrid, Spain. Abstract LBA84.
25. Aggarwal R, Starzinski S, de Kouchkovsky I, et al. Single-dose (<sup>177</sup>Lu)-PSMA-617 followed by maintenance pembrolizumab in patients with metastatic castration-resistant prostate cancer: an open-label, dose-expansion, phase 1 trial. *Lancet Oncol*. 2023;24(11):1266-1276. doi:10.1016/s1473-0245(23)00451-5
26. Weineisen M, Schottelius M, Simecek J, et al. <sup>68</sup>Ga- and <sup>177</sup>Lu-Labeled PSMA I&T: Optimization of a PSMA-Targeted Theranostic Concept and First Proof-of-Concept Human Studies. *J Nucl Med*. 2015;56(8):1169-1176. doi:10.2967/jnumed.115.158550

27. Schuchardt C, Zhang J, Kulkarni HR, Chen X, Müller D, Baum RP. Prostate-Specific Membrane Antigen Radioligand Therapy Using (177)Lu-PSMA I&T and (177)Lu-PSMA-617 in Patients with Metastatic Castration-Resistant Prostate Cancer: Comparison of Safety, Biodistribution, and Dosimetry. *J Nucl Med*. 2022;63(8):1199-1207. [doi:10.2967/jnumed.121.262713](https://doi.org/10.2967/jnumed.121.262713)
28. Golan S, Frumer M, Zohar Y, et al. Neoadjuvant 177Lu-PSMA-I&T Radionuclide Treatment in Patients with High-risk Prostate Cancer Before Radical Prostatectomy: A Single-arm Phase 1 Trial. *European Urology Oncology*. 2023;6(2):151-159. [doi:10.1016/j.euo.2022.09.002](https://doi.org/10.1016/j.euo.2022.09.002)
29. Chi KN, Metser U, Czernin J, et al. Study evaluating metastatic castrate resistant prostate cancer (mCRPC) treatment using <sup>177</sup>Lu-PNT2002 PSMA therapy after second-line hormonal treatment (SPLASH). *Journal of Clinical Oncology*. 2021;39(15\_suppl):TPS5087-TPS5087. [doi:10.1200/jco.2021.39.15\\_suppl.tps5087](https://doi.org/10.1200/jco.2021.39.15_suppl.tps5087)
30. Sathekge M, Bruchertseifer F, Vorster M, et al. mCRPC Patients Receiving <sup>225</sup>Ac-PSMA-617 Therapy in the Post-Androgen Deprivation Therapy Setting: Response to Treatment and Survival Analysis. *Journal of Nuclear Medicine*. 2022;63(10):1496-1502. [doi:10.2967/jnumed.121.263618](https://doi.org/10.2967/jnumed.121.263618)
31. Sathekge M, Bruchertseifer F, Knoesen O, et al. (225)Ac-PSMA-617 in chemotherapy-naive patients with advanced prostate cancer: a pilot study. *Eur J Nucl Med Mol Imaging*. 2019;46(1):129-138. [doi:10.1007/s00259-018-4167-0](https://doi.org/10.1007/s00259-018-4167-0)
32. Buteau JP, Kostos LK, Alipour R, et al. VIOLET: A phase I/II trial evaluation of radioligand treatment in men with metastatic castration-resistant prostate cancer with [<sup>161</sup>Tb]Tb-PSMA-I&T. *Journal of Clinical Oncology*. 2023;41(6\_suppl):TPS281-TPS281. [doi:10.1200/jco.2023.41.6\\_suppl.tps281](https://doi.org/10.1200/jco.2023.41.6_suppl.tps281)