

# TheraP

*Improving survival for people with prostate cancer*

TheraP showed that Lu-PSMA is an effective alternative with less side effects than cabazitaxel for prostate cancer that has progressed after standard hormonal therapies and docetaxel.

## EXPERTISE

Conceived, designed and conducted in collaboration with ANZUP. CTC brought its expertise in operations and trial management, which included working with Australian Nuclear Science and Technology Organisation (ANSTO), to provide the unique radionuclide Lutetium, which has a very short half life and required real-time planning, ordering and delivery to hospital nuclear medicine units, for synthesis with PSMA-11 for patient administration.

## Trial snapshot

Start date: 2018

End date: 2022



**200**

participants ANZ

Collaborators:

- ANZUP

## BACKGROUND

Prostate cancer is the most commonly diagnosed cancer in Australia, approximately 24,000 Australians were diagnosed with prostate cancer in 2022. The median duration of response to medical castration is only 2 years and patients eventually develop resistance leading to disease progression and metastatic castration-resistant prostate cancer (mCRPC).

## STUDY OVERVIEW

TheraP is the first randomised trial comparing <sup>177</sup>Lu-PSMA-617 (Lu-PSMA), a novel radioactive treatment, to the current standard-of-care chemotherapy called cabazitaxel for people with metastatic castration-resistant prostate cancer. These people had disease that had already progressed after standard chemotherapy.

This unique treatment involved two distinct parts. Firstly, a PET scan is used to 'map' the cancer. This is done by injecting a radioactive molecule called gallium-68 attached to a small molecule that rapidly localises to prostate specific membrane antigen (PSMA) on the surface of prostate cancer cells in the body. The result is the cancer cells 'light up', showing exactly where the disease is and enabling identification of patients that may benefit from this new therapy. The second part is the therapy itself: the Lu-177 radionuclide is attached to a similar molecule used in the scanning process, and LuPSMA is administered to the patient, targeting the tumours and killing the cancer cells while minimising damage to surrounding tissue.

## KEY FINDINGS

Three-year follow-up of the TheraP study provides compelling evidence that Lutetium-177 PSMA-617 is a new treatment option for people with prostate cancer, providing an alternative to cabazitaxel chemotherapy with better patient reported outcomes and lower side effects.