

UNDER EMBARGO until
Sunday 16 October 14.00 BST
Sunday 16 October 08.00 CDT
Sunday 16 October 09.00 EDT
Monday 17 October midnight ADST
EANM22 - TOP Trials Session 1: Best International Trials
The Lancet Oncology

A whole body scan can predict which patients will benefit most from a radioactive treatment for people with prostate cancer

The Australian and New Zealand Urogenital and Prostate Cancer Trials Group (ANZUP) reports the results of a biomarker analysis from its TheraP (ANZUP 1603) clinical trial, presented at the 35th Annual Congress of the European Association of Nuclear Medicine (EANM22) in Barcelona on Sunday 16 October and published simultaneously in *The Lancet Oncology*.

TheraP was the first trial comparing Lutetium-177 PSMA-617 (Lu-PSMA), a novel radioactive treatment, to chemotherapy called cabazitaxel, for people with metastatic castration-resistant prostate cancer. TheraP showed that patients receiving Lu-PSMA had better responses than cabazitaxel, with more patients having reduction in PSA (a blood marker of prostate cancer), tumours getting smaller on scans, and longer duration of time of tumour control. There were also fewer and less severe side effects with Lu-PSMA. Results were published last year in *The Lancet*, one of the world's elite medical journals.

This new work looked at whether whole body PET scans performed before treatment could predict patient outcomes. 200 patients recruited into the study at 11 hospitals around Australia had two types of whole body PET scans. These scans show the location of prostate cancer in the body but also give information about how those cancer deposits behave. Patients first had a PSMA PET/CT, measuring the amount of prostate specific membrane antigen (PSMA), a receptor on the surface of cancer cells which is also the target for the Lu-PSMA treatment. Patients also had a FDG PET/CT, which measures the amount of sugar the tumours use and where these faster-growing tumours are.

The results found that with patients with high uptake on the PSMA PET/CT could predict higher likelihood of favourable response Lu-PSMA than cabazitaxel. Study authors conclude that patients with disease like this are more likely to benefit from Lu-PSMA.

The study also found that a high volume of disease on FDG PET was associated with worse prognosis regardless of whether the patients received Lu-PSMA or cabazitaxel.

Dr James Buteau, the first author of this analysis, said, "The PET scans are like a small window into the future. We can peek through and get a good idea of how Lu-PSMA should work for these patients."

“This Australian first study shows that a new era of personalised medicine has arrived. We show that a new whole body scan can be used to identify men with prostate cancer that are much more likely to respond to radioactive Lu-PSMA,” said Professor Michael Hofman from Peter MacCallum Cancer Centre, lead investigator of the ANZUP TheraP study.

Full results of the study will be presented by Dr James Buteau on Sunday 16 October at the 35th Annual Congress of the European Association of Nuclear Medicine (EANM22) in Barcelona. The details will be published simultaneously in The Lancet Oncology. For additional study information, visit: <https://anzup.org.au/clinical-trial/therap-trial/> or <https://clinicaltrials.gov/ct2/show/NCT03392428>.

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About TheraP

TheraP is a partnership between ANZUP Cancer Trials Group and the Prostate Cancer Foundation of Australia (PCFA) with support from the Australian Nuclear Science and Technology Organisation (ANSTO), Novartis, Movember, The Distinguished Gentleman’s Ride, It’s a Bloke Thing and CAN4CANCER.

This study is being conducted by ANZUP in collaboration with the National Health and Medical Research Council (NHMRC) Clinical Trials Centre at the University of Sydney.

About Metastatic Castration-Resistant Prostate Cancer

Metastatic prostate cancer is cancer that has spread from the prostate to other parts of the body, most commonly to bones and lymph nodes. This is treated by suppressing the sex hormone testosterone which can drive tumour growth. Over time, tumours can be resistant to this hormone therapy and the disease is then called castration-resistant. This type of advanced disease is often a lethal condition and novel treatments are needed to improve outcomes.

About ANZUP

ANZUP is the leading cancer-cooperative clinical trials group that brings together all of the professional disciplines and groups involved in researching and treating urogenital cancers and conduct high quality clinical research. ANZUP identifies gaps in evidence and areas of clinical need, collaborates with the best clinicians and researchers in GU cancer and communicates frequently and effectively with the broader community along the way. ANZUP receives valuable infrastructure support from the Australian Government through Cancer Australia.