

Targeted therapies offer new options for prostate cancer treatment

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Lymph node secondary cancer “spots” that will be individually targeted by the stereotactic body radiotherapy

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When treatment for prostate cancer fails, some men appear to enter a transitional phase before their cancer spreads more widely.

In this phase they have just a few secondary “spots” in their bones or lymph nodes.

A new therapy, designed specifically for this kind of patient, is now being trialled in Melbourne.

It directly targets these spots and takes them out. The aim is to get in early and delay the spread of the cancer.

This targeted local therapy is only offered to men with oligometastatic disease, which means they have five or fewer spots.

If these can be eliminated it’s hoped the use of hormone deprivation therapy can be delayed. This would save men from the therapy’s toxic side effects and perhaps extend their survival.

The trial is being conducted through the Royal Melbourne Hospital and the Australian Prostate Cancer Research Centre at Epworth Healthcare.

“Up to now 90 patients have been treated and we’ve had some quite spectacular results,” says Dr Pat Bowden, director of radiation oncology at Epworth.

Millimetre precision

The cancer spots are eradicated with a precise treatment called stereotactic body radiotherapy.

Dr Bowden says it delivers targeted radiation with millimetre precision.

This lessens the likelihood of damage to surrounding healthy tissue or nearby organs.

Dr Bowden says the long-term goal of this and other therapies is to turn prostate cancer into a chronic disease that can be managed over time.

At the same time, new scanning technology is enabling more accurate identification of patients who have oligometastatic disease.

A scan available at Melbourne’s Peter MacCallum Centre using positron emission tomography (PET) is specifically designed to light up spots from prostate cancer.

This scan uses a new type of tracer that travels directly to the cancer spot and settles on the membrane of the cancer cells.

As the tracer is a prostate-specific membrane antigen, the scan is known as a PSMA PET.

“It’s a disruptive technology,” says Dr Michael Hofman, a nuclear medicine physician and associate professor at Peter MacCallum.

“It allows us to see things we haven’t seen before.”

The PET scan identifies the spot and provides chemical information about it. This is combined with a CT scan, which provides structural information about the spot.

“This means rather than working blindly, we can image what we are treating,” Dr Hofman says.

Primary treatment failure

Men know primary treatment of their cancer has failed when the level of PSA in their blood starts rising again.

At this point they often progress to salvage radiation therapy which is applied to the prostate bed.

“This technology has the potential to stop futile salvage radiation to the prostate bed when the disease has spread elsewhere,” says Dr Hofman.

According to a commentary in the *British Journal of Urology International*, the overall toxicity of stereotactic body radiotherapy for prostate cancer is low.

The commentary, written by a group of Melbourne specialists, says imaging and patient selection are key to the potential success of this therapy. There may be “a window of opportunity for meaningful intervention early in the metastatic cascade” in prostate cancer, the commentary says.

This therapy may change the sequence of treatment and “possibly provide durable control in some men after failed primary treatment.”

While Dr Hofman cautions against the overenthusiastic use of new technology, he says there is an even more exciting possibility on the horizon.

In Germany, researchers are now treating patients with radioactive PSMA. This is injected into the veins and is programmed to seek out prostate cancer cells, destroying the target without collateral damage to healthy tissue.

The treatment is still highly experimental but the Peter MacCallum team hopes to run a trial next year, Dr Hofman says.