

# Prostate cancer cells blitzed with search-and-destroy radiotherapy

**Chris Smyth** Health Editor, Chicago

Thousands of men with incurable prostate cancer are set to benefit from a "search-and-destroy" type of radiotherapy which doctors believe is "the next big thing" in treating the disease.

The method which targets cancer cells with a nuclear payload was hailed as potentially game-changing by experts at the world's biggest cancer conference.

Although results are only now starting to emerge, doctors said that targeting radioactive chemicals precisely to kill tumour cells while avoiding side-effects could be a huge step for men with prostate cancer. Every year 47,000 British men develop the disease.

There is even hope that the method could one day be used earlier as an alternative to standard hormone therapies that effectively castrate patients.

A study of 43 men who had exhausted all other treatments at the Peter Mac Cancer Centre in Melbourne showed that 57 per cent responded to the drug

and of those 82 per cent saw their tumours shrink. Arun Azad, a researcher at the centre who is testing the treatment on 200 men in one of ten trials around the world, said: "If the results are positive it will change the landscape of how we treat prostate cancer."

Results are due next year from a final stage study which hopes to show that the method cuts deaths by a quarter.

At the annual meeting of the American Society of Clinical Oncology in Chicago, Professor Johann de Bono of the Institute of Cancer Research in London, who is joint leader of the trial, said the new form of radiotherapy was "a huge deal". "It is one of the next big things," he said. "There is no doubt it is causing substantially durable remission, and we are optimistic."

A similar approach is used to detect the spread of cancer using scans. Chemicals which show up on the scans target a protein called PSMA, which is found on the surface of prostate tumours. Doctors use the same method of seeking out PSMA to attach radiation-

emitting chemicals to tumour cells. "Essentially what you have is a bullet instead of a light," said Professor Stefano Fanti of the University of Bologna.

Not all tumours have high levels of PSMA so not all men will respond to the treatment but it is estimated that a third to a half of the 10,000 men a year diagnosed with advanced prostate cancer could benefit.

While experts urged caution until results were in, if the trial succeeds it could become an option on the NHS. The treatment costs about £12,000 per cycle privately, with men usually needing several cycles. Because the radiation is targeted at tumour cells it has relatively few side-effects.

Professor Katherine Vallis of Oxford University said: "External beam radiotherapy is only used for one site at a time, either in localised disease, if it is in the lymph nodes, or single bone sites if there are particular painful areas. But with PSMA the radioactive material can get anywhere in the body."

Paul Villanti of the Movember men's

health charity, said: "PSMA from our perspective is one of the most exciting areas in prostate cancer research. I put this among the top few areas which could have a big impact on the lives of men with prostate cancer."

Professor Oliver Sartor of Tulane University in New Orleans is trialling a method that could help men with earlier stage disease. He said that in his most optimistic moments he envisioned it ultimately becoming an alternative to standard testosterone-lowering therapy. "How many men want to be castrated? Men don't like it and they are seeking an alternative," he said.

● A blood test could help to predict whether breast cancer will respond to treatment and if the disease will return. Scientists at the Institute of Cancer Research in London said that the "liquid biopsy" could detect genetic changes in tumours and signs of drug resistance. They looked at cancer DNA in the blood of 310 women. The disease returned after an average 3.7 months for those with changes in gene p53.

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