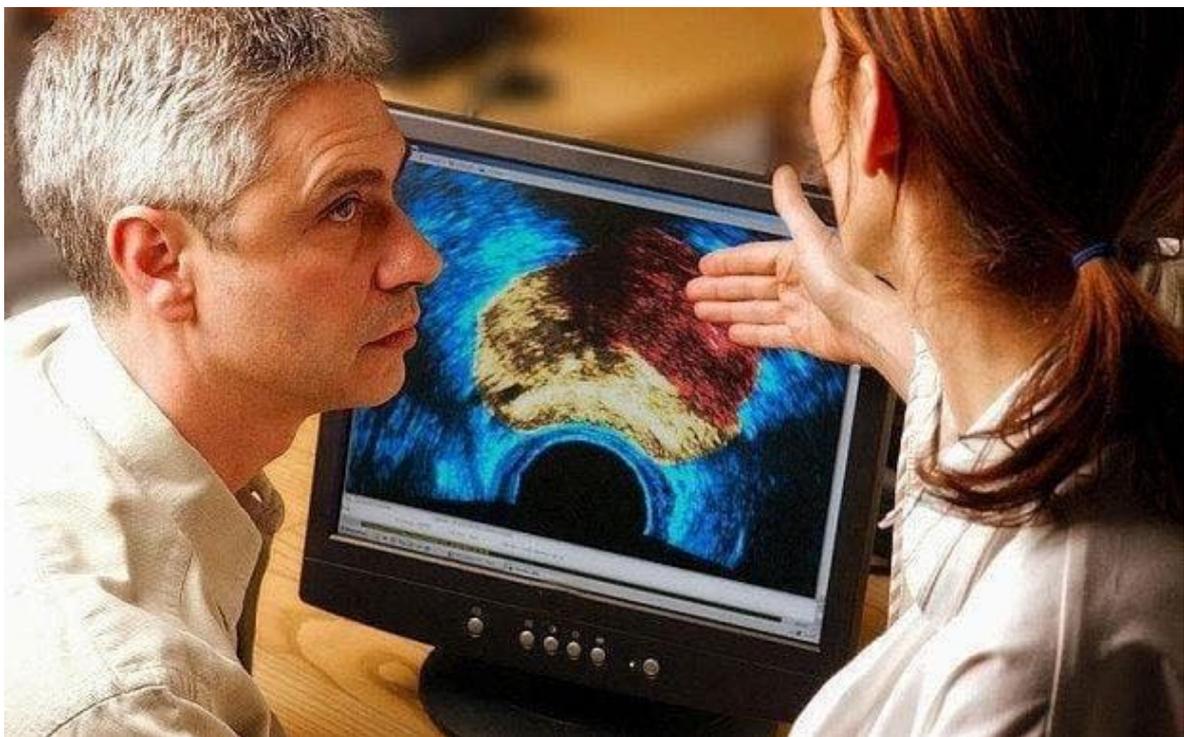


Man 'cured' of prostate cancer after doctors shock tumour to death with testosterone



A man diagnosed with prostate cancer

[Sarah Knapton](#), science editor

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A

man with advanced prostate cancer is believed to be cured after doctors 'shocked' his tumour to death with huge amounts of testosterone.

The result has been described as 'unexpected' and 'exciting' because most prostate cancer therapies work by depriving tumours of testosterone, because cancer uses it as a fuel.

Other seriously ill men taking part in the same trial showed responses that astounded scientists, with tumours shrinking and the progress of their disease halted.

Levels of Prostate Specific Antigen (PSA), a blood marker used to monitor prostate cancer, also fell in the majority of the 47 participants.

One individual whose PSA levels dropped to zero after three months and shows no remaining trace of the disease after 22 cycles of treatment appears

to be cured, said the researchers.

Professor Sam Denmeade, from Johns Hopkins University School of Medicine in Baltimore, US, who led the study, said: ""Our goal is to shock the cancer cells by exposing them rapidly to very high followed by very low levels of testosterone in the blood. The results are unexpected and exciting.

"We are still in the early stages of figuring out how this works and how to incorporate it into the treatment paradigm for prostate cancer.

"Many of the men have stable disease that has not progressed for more than 12 months.

"I think we may have cured one man whose PSA dropped to zero after three months and has remained so now for 22 cycles. His disease has all disappeared."

The facts | Prostate cancer

47,300 men in the UK are diagnosed with prostate cancer each year

It is the most common cancer among UK men

One in eight men will be diagnosed in their lifetime

That likelihood is doubled for black men, with one in

four being affected by the disease

Men whose fathers or brothers have had prostate cancer are more than twice as likely to develop the disease

65–69 is the average age at which men are diagnosed
11,287 men in the UK die from prostate cancer each year - that equates to one every hour

330,000 men are living with or after the disease in the UK

All of the patients had spreading cancer that was resistant to treatment with two of the latest hormone therapy drugs, abiraterone and enzalutamide.

The trial involved three cycles of "bipolar androgen therapy" (BAT) which involves alternately flooding and starving the body of the male hormone testosterone.

The treatment is revolutionary because testosterone is generally assumed to fuel prostate cancer. For decades men with advanced and spreading prostate cancer have been treated by cutting off the supply of testosterone or blocking its effects.

In contrast upping testosterone in a man with prostate cancer is generally considered similar to pouring petrol on a fire.

Yet laboratory experiments had hinted that blasting tumours with high levels of the hormone might suppress or even kill prostate cancer cells.

The men received high dose injections of testosterone once every 28 days. At the same time, they were given a drug that stopped testosterone being produced naturally by the testicles.

Prof Denmeade said it was still not clear how the treatment worked, but it appeared to involve cell signalling and part of the process of cell division. Large doses of testosterone also seemed to cause prostate cancer cells to make breaks in their DNA.

Cancer cells stopped dividing and turned "senescent", meaning they "become like old men who sit around and tell stories but don't make much trouble", said the professor.

Watch | The harrowing

impact of prostate cancer on families

02:41

Each year around 47,000 men are diagnosed with prostate cancer in the UK and 11,000 die from the disease.

Dr Matt Hobbs, deputy director of research at the charity Prostate Cancer UK, said: "Drugs that reduce the levels of testosterone (androgen deprivation therapy) are an effective treatment for thousands of men with advanced prostate cancer.

"However, at some point the cancer evolves and those drugs stop working. This research is intriguing because it offers a hint that - somewhat unexpectedly - for some men whose cancers have reached that 'hormone-resistant' stage it may be possible to kill or stop growth of the cancer cells by actually overloading them with testosterone.

"Many exciting new lines of attack against prostate cancer are emerging of which this is one.

"However, this is early stage research and further studies are needed in order to understand exactly how intriguing developments like this work and to test the findings more robustly in large clinical trials."

The early findings from the on-going study were presented at a symposium on Molecular Targets and Cancer Therapeutics in Munich, Germany.