

Testosterone slows prostate cancer recurrence in low-risk patients

March 17 2019



Micrograph showing prostatic acinar adenocarcinoma (the most common form of prostate cancer) Credit: Wikipedia, [CC BY-SA 3.0](https://creativecommons.org/licenses/by-sa/3.0/)

In the largest such study so far undertaken, US researchers have shown that testosterone replacement slows the recurrence of prostate cancer in low-risk patients. This may call into question the general applicability of Nobel-Prize winning hormonal prostate treatment. The work is presented at the European Association of Urology congress in Barcelona.

Doctors have long regarded [testosterone](#) as a hormone which promotes [prostate](#) cancer. The 1941 work of Huggins and Hodges won Huggins the 1966 Nobel Prize for Medicine, for reporting the dramatic impact of testosterone reduction on prostate cancer. Since then, medicines which reduce levels of the hormone testosterone have become a standard option for many patients.

However, in the late 1990s to 2000s, doctors discovered that although men on long term anti-testosterone treatments were not dying from prostate cancer, they were dying prematurely of cardiovascular disease. It seemed that although anti-testosterone therapies were treating the prostate cancer, the extremely low testosterone levels were significantly worsening metabolic complications such as elevated blood sugar, diabetes, elevated cholesterol, mid-abdomen visceral fat, etc. Low testosterone also caused a loss of sexual function in many men on anti-androgen [treatment](#). This led some doctors to suggest testosterone treatment of some low risk men after radiation or surgical treatment.

What have they done?

Starting in 2008 a team of doctors from the University of California, Irvine, led by Professor Thomas Ahlering, began to carefully select patients for testosterone replacement after primary treatment of prostate cancer with robotic radical prostatectomy, in hopes of improving recovery of sexual function.

The team worked with 834 patients undergoing radical prostatectomy. They treated 152 low-risk patients with no evidence of disease with testosterone replacement therapy. After a median of 3.1 years following surgery, they tested the patients for biochemical recurrence of the cancer, as indicated by measurement of the Prostate Specific Antigen (PSA) levels. They found that the cancer had recurred in only approximately 5% of treated patients, whereas the cancer had recurred

in 15% of the patients who did not receive testosterone. Overall, after accounting for differences between the groups, they found nearly a three-fold reduction by three years.

Importance

Thomas Ahlering commented: "This is not what we set out to prove, so it was a big surprise: not only did [testosterone replacement](#) not increase recurrence, but it actually lowered recurrence rates. While the testosterone is not curing the cancer per se, it is slowing the growth of the cancer, giving an average of an extra 1.5 years before traces of [cancer](#) can be found. We already know that testosterone can help with physiological markers such as muscle mass, better cholesterol and triglyceride levels and increased [sexual activity](#), so this seems to be a win-win".

He continued, "There have been smaller studies which have hinted that testosterone may not be risky for certain patient groups, but this is the largest such study ever conducted. We're not suggesting that treatment methods be changed just yet, but this puts us at the stage where we need to question the taboo against testosterone use in [prostate cancer](#) therapy—especially for low-risk patients after radical prostatectomy. We need the oncology/urology community to begin to review testosterone use".

Commenting, Professor Francesco Montorsi (Milano), European Association of Urology's Adjunct Secretary General for Science said:

"The paper is indeed important, as it stresses the importance of checking testosterone levels as a part of the management of patients with sexual disorders following radical prostatectomy. Obviously selection of the right [patients](#) is vital, but if confirmed, this may have immediate benefits on quality of life; the possibility of reducing mortality would be an

unexpected bonus. We now need bigger studies to support this work".

Professor Montorsi was not involved in this work.

Provided by European Association of Urology

Citation: Testosterone slows prostate cancer recurrence in low-risk patients (2019, March 17)
retrieved 16 April 2024 from

<https://medicalxpress.com/news/2019-03-testosterone-prostate-cancer-recurrence-low-risk.html>

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