

Hormone therapy for prostate cancer tied to possible Alzheimer's risk

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But experts caution that study doesn't prove cause-and-effect relationship between the two.

(HealthDay)—Hormone therapy for prostate cancer might dramatically increase a man's risk of developing Alzheimer's disease, a large-scale analysis of health data suggests.

Men who underwent [androgen deprivation therapy](#) (ADT) for their prostate cancer had nearly twice the risk of Alzheimer's, when compared to prostate cancer patients who didn't receive hormone therapy, researchers found.

The risk increased even more if men received hormone therapy for longer than a year, said study lead author Dr. Kevin Nead, a radiation oncology resident at the University of Pennsylvania's Perelman School of Medicine in Philadelphia.

"We found that the people who got androgen deprivation therapy had a higher risk of Alzheimer's disease, and the people who were on ADT the longest had the greatest risk of Alzheimer's," Nead said. "In our study, there was a suggestion that this is a dose-dependent effect."

However, the researchers added that the study didn't prove a link between hormone therapy for prostate cancer and a risk of Alzheimer's disease, and more investigation into a possible connection is needed.

Male sex hormones called androgens have been proven to fuel the growth of [prostate cancer cells](#), according to the U.S. National Cancer Institute.

To slow the growth of prostate tumors, doctors sometimes use drugs to reduce androgen levels in the body or block the action of androgens.

This tactic has been a mainstay of [prostate cancer treatment](#) since the 1940s, and currently about a half-million U.S. men receive ADT as a treatment for prostate cancer, the study authors said in background information.

But doctors have started to suspect that androgen therapy may also have an effect on a patient's brain activity, said Dr. Otis Brawley, chief medical and scientific officer for the American Cancer Society.

"There have been suspicions in the community," Brawley said. "What we hear from patients is, 'I can't concentrate as well, I can't think as well,' but you see that with a number of other drugs."

These thought-and-memory symptoms appear to overlap with the ones seen with Alzheimer's, Nead said. So, the researchers decided to investigate a possible association between androgen deprivation therapy and the degenerative neurological disease.

The researchers scanned the records of about 5.5 million patients from two hospitals—Stanford Health Care in Palo Alto, Calif., and Mount Sinai Hospital in New York City. From this pool, they identified almost 17,000 patients with prostate cancer that hadn't spread elsewhere in their bodies, including almost 2,400 men who had been treated with [androgen deprivation](#) therapy.

The researchers then reviewed the records to see which of these patients had a subsequent diagnosis of Alzheimer's.

Patients who had been treated with ADT had an 88 percent increased risk of an Alzheimer's diagnosis within an average three-year follow-up period, compared to those who didn't receive the hormone therapy, the researchers found.

Even worse, men treated with ADT for longer than 12 months had an Alzheimer's risk more than double that of prostate cancer patients not treated with the [hormone therapy](#), the study authors said.

Experts said there are several ways that male hormones might influence Alzheimer's risk.

For one thing, androgens appear to keep circulating levels of a protein called beta amyloid low in a person's bloodstream, said Keith Fargo, director of scientific programs and outreach for the Alzheimer's Association.

Beta amyloid tends to clump together in the brains of Alzheimer's patients, forming amyloid plaques that are one of the hallmarks of the disease, Fargo said. However, no one is yet sure what role amyloid plaques play in the development of Alzheimer's.

Androgen deprivation therapy might also affect the health of a person's

blood vessels or other important systems, which in turn could affect their brain function, Nead said.

Although the results from this report are dramatic, the experts unanimously said it's much too soon to give any medical advice based on the findings.

Researchers can't prove a direct cause-and-effect link between ADT and Alzheimer's in an observational study like this, Nead said. Some other unknown variable might be influencing the results.

"Given that it's a first-time association in a retrospective analysis, this study helps inform future research but it's not appropriate at this point to make treatment decisions off of it," Nead said.

Fargo agreed. "I don't think any doctors are going to make different decisions based on this single study," he said. "If your doctor has put you on this medication for your [prostate cancer](#) treatment, you should continue it. Consult with your physician, but don't stop taking your medication based on a study like this."

"Does this definitively prove a link? No," Brawley said. "Does this give us some reason to be concerned? Yes. This study tells me that we as a medical community need to be very strict and rigorous in terms of who we treat with hormonal therapy."

The study was published Dec. 7 in the *Journal of Clinical Oncology*.

More information: Visit the [U.S. National Cancer Institute](#) for more on androgen deprivation therapy.

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