Medical Xpress
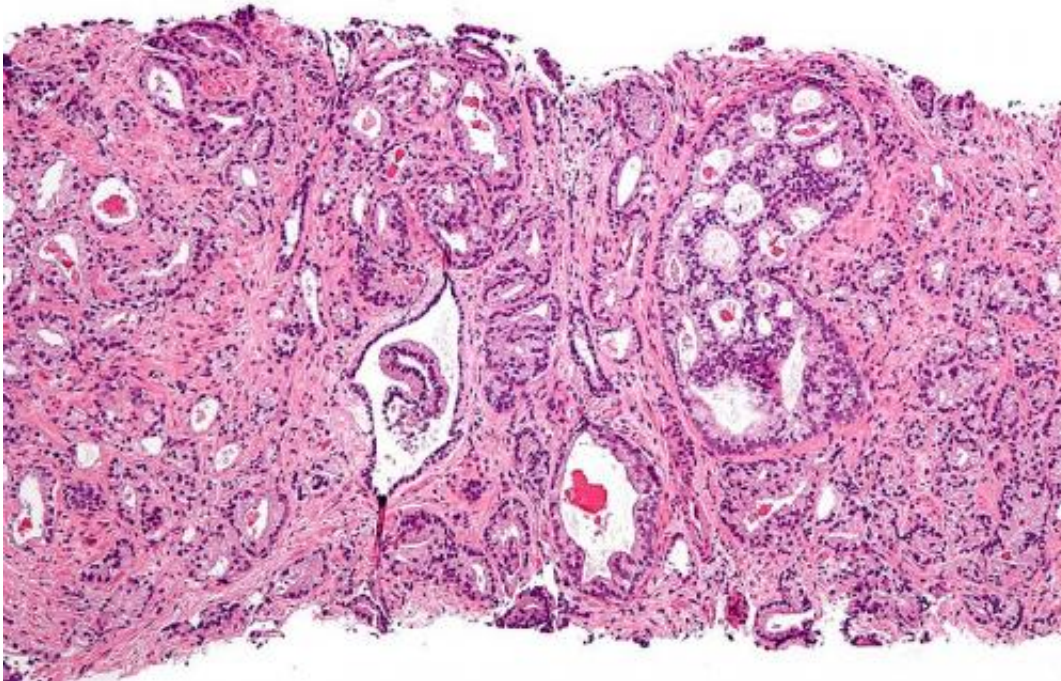
Statin drugs can delay prostate cancer progression in patients, study shows

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Micrograph showing prostatic acinar adenocarcinoma (the most common form of prostate cancer) Credit: Wikipedia, CC BY-SA 3.0

Men who went on cholesterol-lowering statin drugs when they began androgen deprivation therapy for prostate cancer had a longer time in which their disease was under control than did men who didn't take statins, a clinical trial led by Dana-Farber Cancer Institute investigators shows.

In a study published online today by *JAMA Oncology*, the researchers report that men who had been taking statins since the start of androgen deprivation therapy (ADT) went a median of 27.5 months before their disease began to worsen, compared to 17.4 months for men who didn't take statins. The trial involved 926 patients, 70 percent of whom had their disease progress during a six-year period.

"This median 10-month benefit in delaying disease progression suggests that statins could be a valuable addition to our current therapies for prostate cancer," says the study's first author, Lauren Harshman, MD, medical oncologist at the Lank Center for Genitourinary Oncology at Dana-Farber. "These results are supported by multiple prior epidemiologic studies demonstrating that statin use may be associated with improved outcomes in prostate cancer, but require validation."

The trial grew out of laboratory studies that suggested statins could delay prostate cancer growth in patients receiving ADT. (ADT reduces the amount of androgen in the body, preventing prostate cancer cells from using it to fuel their growth. For many years, it has been the frontline treatment for patients with hormone-sensitive prostate cancer that has spread beyond the prostate gland.)

The laboratory phase of the research focused on a protein called SLCO2B1, which helps a variety of drugs and hormones enter cells. One of these immigrants to the cell is dehydroepiandrosterone sulfate (DHEAS), a precursor of testosterone, the hormone that spurs prostate cancer cell growth. Statin drugs, too, rely on SLCO2B1 to gain entry to cells.

In a series of experiments, the researchers showed that statins could interfere with DHEAS uptake in lab-grown prostate cancer cell lines. By monopolizing the available pool of SLCO2B1 within a prostate tumor, statins essentially deny DHEAS a passkey to the cancer cells. The

clinical study results suggest this approach could be effective in patients.

"We present a plausible mechanism by which statins may work in prostate cancer by decreasing the tumor's available androgen pool and thus improving patient outcomes, says the study's senior author, Philip Kantoff, MD, leader of the Lank Center for Genitourinary Oncology and chief of solid tumor oncology at Dana-Farber. "Further study is required to validate our findings."

Provided by Dana-Farber Cancer Institute