

AI-driven biomarker predicts optimum length of treatment for prostate cancer

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A biomarker developed with digitalized pathology and artificial intelligence demonstrated it was able to identify which men treated with radiation for high-risk localized prostate cancer could be spared long-

term hormone therapy and its potential side effects.

Presenting their findings June 4 at the American Society of Clinical Oncology ([ASCO](#)) meeting, Duke Cancer Institute researchers reported results from a phase 3 trial involving the National Cancer Institute Cooperative Group NRG/RTOG 9202 of the successful AI-derived digital pathology tool.

The researchers trained the AI-based [biomarker](#) using data from six [clinical trials](#) involving more than 2,600 men with [prostate cancer](#) who had been treated with long-term hormone therapy and radiation.

The AI tool—developed in collaboration with the company ArteraAI—digitally read the patients' biopsies and [clinical data](#) to discern which of the men could be spared long-term androgen deprivation therapy (ADT) with no increased risk of the cancer spreading. After training, the AI-based tool was then validated on another 1,192 patients in a randomized, controlled trial.

The researchers found that the predictive AI biomarker identified 34% of men who could benefit from short-term ADT, avoiding the side effects of prolonged ADT without compromising efficacy. It also identified 43% of intermediate-risk men who would benefit from long-term ADT to reduce their risk of metastases over time.

"Along with radiotherapy, ADT improves survival and reduces risk of metastasis in men with high-risk localized prostate cancer, but not all men need to be on therapy over the long term," said lead author Andrew J. Armstrong, M.D., professor in the departments of Medicine, Surgery and Pharmacology and Cancer Biology at Duke University School of Medicine.

"Having a predictive biomarker that accurately identifies men with high

risk localized prostate cancer to more optimal and personalized care would spare many from undergoing unnecessary treatment, while identifying those men who would benefit most," Armstrong said.

Provided by Duke University

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