Perioperative Apalutamide Reduces Risk of Metastasis and Death for Patients With High-Risk Prostate Cancer

Treatment with Erleada before and after surgery helped delay subsequent therapy by 33 months.

May 31, 2026 By Dana-Farber Cancer Institute

Perioperative Apalutamide in High-Risk Localized or Locally Advanced Prostate Cancer Reduces Risk of Metastasis and Death

High-risk localized and locally advanced prostate cancer patients treated with apalutamide [Erleada] — a next generation neoadjuvant androgen-receptor pathway inhibitor (ARPI) — plus hormone therapy before and after prostate cancer surgery resulted in more major pathologic responses and reduced the risk of metastasis or death, meeting both primary endpoints, in an international Phase III clinical trial led by principal investigator Mary-Ellen Taplin, MD, medical oncologist at Dana-Farber Cancer Institute, and Adam Kibel, MD, chair of the Department of Urology at Mass General Brigham.

These potentially practice-changing findings will be presented [May 31] by Taplin in a plenary session at the American Society for Clinical Oncology (ASCO) Annual Meeting in Chicago and published in the New England Journal of Medicine.

More than 330,000 people are diagnosed with prostate cancer annually, and up to 20% have an aggressive form of the disease that is considered high-risk for relapse after primary therapy. Current standard treatment includes radical prostatectomy and/or radiotherapy with androgen-deprivation hormone therapy (ADT). While this treatment works well for some, up to 50% of patients relapse within five years. This highlights the need for an improved regimen that acts earlier and more intensively to improve outcomes.

“Reducing the risk of prostate cancer recurrence and death with improved initial treatment regimens has been a longstanding unmet need for men with localized high-risk prostate cancer,” said Taplin.

“The PROTEUS study was designed to help men whose cancer is still considered curable but has a high chance of recurring or spreading.”

PROTEUS is a randomized, double-blind, placebo-controlled Phase III study that included 2,109 patients with newly diagnosed high-risk localized or locally advanced prostate cancer designed to evaluate the addition of apalutamide therapy before and after surgery. Apalutamide is approved for use in metastatic castration-sensitive prostate cancer and for nonmetastatic castration-resistant prostate cancer. Prior Dana-Farber research led by Taplin also found that intensive ADT prior to surgery showed promise for patients with high-risk localized prostate cancer. These findings supported exploration of apalutamide before and after surgery, or perioperatively, for this patient population.

Participating patients orally received apalutamide plus ADT or a placebo plus ADT for six months before and after radical prostatectomy with pelvic lymph-node dissection. The study’s two primary endpoints included measuring the participant’s pathologic response and metastasis-free survival using both conventional imaging (bone scan and cat scan) and PSMA-PET imaging, a novel approach to measuring disease status.

After a median follow-up of 61.7 months, the combination of apalutamide plus ADT resulted in a 20% reduced risk of metastasis or death with a five-year metastasis-free survival probability of 78.2% compared to 73.5% with hormone therapy alone. Patients treated with the apalutamide plus hormone therapy regimen were nine times more likely to have little to no cancer present at surgery and 8.9 percent experienced a pathologic complete response or minimal residual disease, compared to 1.0% of patients who received hormone therapy alone. Strikingly, the study helped delay subsequent therapy by 33 months.

“As a urologic surgeon who cares for patients with advanced prostate cancer, I am thrilled by the significant improvements in pathology and metastasis-free survival we observed in the PROTEUS trial,” said Kibel, who is senior author on the ASCO presentation and New England Journal of Medicine manuscript. “The outcomes of this trial have the potential to reshape the standard of care for our patients with high-risk prostate cancer.”

Side effects were consistent with data from previously reported studies.

“We have a paradigm-changing Phase III clinical trial,” said Taplin. “This type of treatment regimen that combines systemic therapy with surgery is standard in other aggressive cancers and now has proven benefit for patients with high-risk localized or locally advanced prostate cancer.”

Funding: Johnson & Johnson

This news release was published by Dana-Farber Cancer Institute on May 31, 2026.

Click here for more news from ASCO 2026.