Delaying prostate cancer radiation therapy offers room for flexibility in pandemic peak

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For cancer patients receiving radiation treatment during a surge in COVID-19 cases, adhering to the stay-at-home orders of quarantine is not always an option. The daily hospital trips potentially increase exposure, which is especially dangerous because cancer patients are at high risk for COVID-19 mortality. The option to delay radiation therapy until COVID-19 cases flatten could help cancer patients minimize exposure to the virus by staying home. A new study by investigators from Brigham and Women's Hospital found that for men with unfavorable intermediate-risk or high-risk localized prostate cancer, who are receiving radiation and hormone therapy, delaying radiation while remaining on hormone therapy is unlikely to impact survival. Their results are published in *JAMA Oncology*.

"Using a large database of patients with prostate cancer, we validated that the timing of starting radiation could be flexible," said Vinayak Muralidhar, MD, a resident in the Department of Radiation Oncology at the Brigham. "Our data suggest that patients can wait for COVID-19 cases to go down before starting radiation. Or, if there's a chance a surge is coming, they could consider undergoing radiation a little earlier than planned and complete it before the surge arrives."

"Our hope is that our study helps patients and providers make decisions about the timing of treatment," said Edward Christopher Dee, a fourth-year student at Harvard Medical School who was the first author of the study. "These decisions may allow patients to decrease their risk of exposure to COVID-19. Our findings may also provide reassurance to patients and providers who choose to delay treatment."

Radiation therapy is used for patients with localized prostate cancer and is given with 6-to-36 months of androgen deprivation therapy, or hormone therapy. Based on preclinical data, these two types of therapy are typically timed so that patients receive radiation treatment after two months of hormone therapy. However, two trials looking at this sequence of therapy showed that within a small window, exact timing of starting radiation relative to starting hormone therapy did not affect the outcome. The Brigham investigators wanted to validate the findings of these two relatively small trials in a cohort of over 63,000 cases of localized prostate cancer in the National Cancer Database. With this type of data set, the team recognizes there could be unmeasured differences between the patients that were not accounted for but explain the findings.

The cases were separated into four groups based on when radiation was started relative to hormone therapy. For cases of intermediate and high-risk disease, there was no difference in overall survival among the four groups.

"The findings are reassuring to patients and allow us to come up with a flexible radiation schedule for prostate cancer that ensures their safety," said Muralidhar. "The results have important implications for patients in areas experiencing a

surge in COVID-19 cases who can opt to wait for a safer time to come in and initiate treatment. In the future, we can also look at other types of cancers and treatments and see how delaying therapy has an impact on survival."

More information: Dee, EC et al. "Timing of Radiation and Androgen Deprivation for Prostate Cancer: Implications for Treatment during the COVID-19 Pandemic" *JAMA Oncology* DOI: 10.1001/jamaoncol.2020.3545

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