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Higher volume radiation facilities associated with better survival rates

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New research finds improvement in overall survival rates among men with aggressive prostate cancer who were treated with radiation at a facility that frequently performs that treatment.

In a new study led by researchers at Brigham and Women's Hospital, investigators looked at men with aggressive prostate cancer who were treated with radiation as well as the case volume of the facility at which they were treated. They found that receiving radiation at a facility that treats a high volume of prostate cancer patients with radiation was associated with improved overall survival.

These findings are published online and appear in the March 15, 2016 issue of the *International Journal of Radiation Oncology, Biology, and Physics*.

While it is well established that hospital volume and surgeon volume are associated with better outcomes for patients who require surgery for their cancer, relatively little is known about whether this positive association is also true for cancer patients who require radiation treatment.

"Our paper shows that experience counts," said Paul Nguyen, MD, a physician researcher in the department of Radiation Oncology at Brigham and Women's Hospital and corresponding author of the new paper. "For men with aggressive prostate cancer, survival is improved if they receive their radiation treatments at a high volume facility as

opposed to a lower volume facility."

Using a large cancer database, researchers analyzed data from 19,565 high-risk prostate cancer patients who were treated with radiation at 1099 facilities. This study focused on high-risk prostate cancer because these patients are much more likely to die from their disease than men with low or intermediate risk disease. After adjusting for stage of the disease, age, race, insurance status and other patient factors, researchers found that patients who received radiation at higher-volume facilities consistently had better survival rates than those treated at lower-volume facilities. For example, patients treated at a facility in the top 20 percent by prostate radiation volume (>43 patients per year) vs. bottom 80 percent achieved a 76 percent vs. 74 percent 7-year overall survival.

"We know that a surgeon who does a high volume of a specific procedure has better outcomes, and now we see that same trend when it comes to radiation therapy," Nguyen said. "At a higher volume facility, not only will the radiation oncologist will have more experience at designing and delivering the appropriate treatment fields, but the multidisciplinary team of pathologists, radiologists, urologists, and medical oncologists will have greater expertise in making accurate diagnoses and tailoring the systemic therapy regimen to ensure the best-possible outcome for the patient."

Researchers note that the study was observational, and while they adjusted for every known patient-related, socioeconomic, and tumor-related factor available in the database, it is still possible that other factors that could not be fully controlled for are contributing to the outcomes observed. Future studies in other datasets are being planned to corroborate the strong effect seen here.

More information: Yu-Wei Chen et al. Association Between Treatment at a High-Volume Facility and Improved Survival for

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Radiation-Treated Men With High-Risk Prostate Cancer, *International Journal of Radiation Oncology*Biology*Physics* (2016). DOI: 10.1016/j.ijrobp.2015.12.008

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