Cancer Therapy Advisor

Stereotactic Body Radiation Therapy May Improve Overall Survival in Early-Stage Lung Cancer

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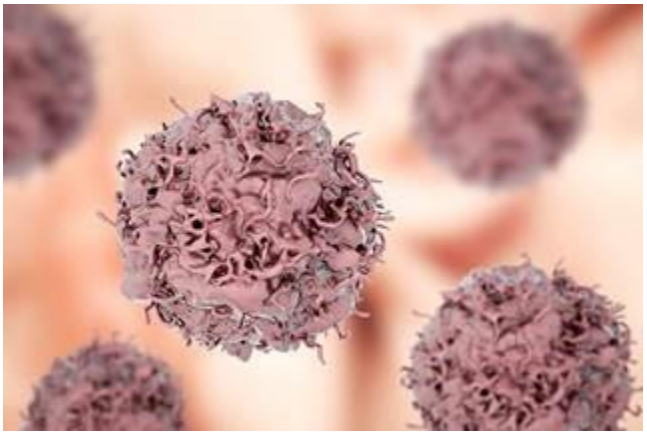
Stereotactic body radiation therapy (SBRT) may lead to improved survival outcomes compared with conventionally fractionated radiotherapy (CFRT) among patients with early-stage non-small cell lung cancer (NSCLC), according to a study published in the *Journal of Clinical Oncology*.[1]SBRT is the current standard of care among patients with inoperable early-stage NSCLC, and has been shown to lead to better control rates, cost-effectiveness, and decreased number of treatments. Phase 3 studies are ongoing, but there is a lack of evidence that definitively supports the superiority of SBRT compared with CFRT

Though phase 3 studies are ongoing, there is a dearth of evidence that definitively supports the superiority of stereotactic body radiation therapy compared with conventionally fractionated radiation



For this retrospective study, researchers accessed the National Cancer Database (NCDB) to review the outcomes of 23,088 patients with cT1-2aN0M0 NSCLC who underwent SBRT or CFRT. Information from the NCDB did not have any patient-specific information on radiation dose; according to National Comprehensive Cancer Network guidelines, CFRT was defined as 60 to 70 Gy in 30 to 35 fractions, and SBRT as 25 to 34 Gy in 1 fraction, 45 to 60 Gy in 3 fractions, 48 to 50 Gy in 4 fractions, 50 to 55 Gy in 5 fractions, or 60 to 70 Gy in 8 to 10 fractions. Additionally, investigators also evaluated patient demographic, clinical, and treatment data.

Overall, 2286 and 20,802 patients underwent CFRT and SBRT, respectively, and an analysis of temporal trends showed that treatment with SBRT rapidly increased from 2004 to 2009. More than 90% of cases in the most recent included decade received SBRT.

Results showed that patients who were African-American, from urban areas, had lower incomes, more comorbidities, larger tumors, squamous histology, and received treatment at non-academic centers were less likely to receive SBRT ($P < .05$ for all).
After a median follow-up of 44.6 months, patients who underwent SBRT had a median overall survival (OS) of 38.8 months versus 28.1 months among those who underwent CFRT ($P < .001$).

Further propensity score matching performed for both cohorts showed that the median OS was 38.2 months compared with 28.1 months among patients treated with SBRT and CFRT, respectively ($P < .001$). Subgroup analyses also showed that OS was improved in specific subcohorts, including those with T2 disease, Charlson Comorbidity Index score of 2 to 3, and squamous histology. A Cox multivariate analysis demonstrated that SBRT was independently associated with improved OS ($P < .001$).

The authors concluded that “this investigation demonstrates the survival benefit to ablative radiotherapy for early-stage NSCLC. Maturation of comparative prospective trials is eagerly awaited."

Reference

Haque W, Verma V, Polamraju P, et al. Stereotactic body radiation therapy versus conventionally fractionated radiation therapy for early stage non-small cell lung cancer[published online July 18, 2018]. *Radiother Oncol*. doi: 10.1016/j.radonc.2018.07.008.