Concurrent chemoradiation treatment at high-volume facilities improves survival for NSCLC

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Patients treated with definitive concurrent chemotherapy and radiation therapy (CCRT) for stage III non-small cell lung cancer (NSCLC) have longer overall survival when treated by highly experienced facilities, whether or not they are academic or community cancer centers.

Lung cancer is the leading cause of cancer related death in the US with 159,000 deaths and 224,000 diagnoses each year, with NSCLC accounting for 85% of the cases. The stage of lung cancer is determined based on the size of the tumor, the extent and location of lymph node involvement, and whether or not the tumor has metastasized to distant regions. Approximately one quarter of NSCLC cases are diagnosed at stage III, with only 25% of those patients surviving at least 5 years. National Comprehensive Cancer Network guidelines support the use of definitive CCRT as a standard-of-care treatment option for patients with locally advanced stage III NSCLC.

Researchers from the Yale University School of Medicine analyzed data from the National Cancer Database (NCDB), a joint project of the Commission on Cancer of the American College of Surgeons and the American Cancer Society, for patients who were treated with definitive CCRT for stage III NSCLC diagnosed and clinically staged between 2004 and 2006. They sought to determine if there was a relationship between treatments at facilities with expertise in treating a large number of CCRT cases and improved overall survival, as well as determine if

any patient characteristics were associated with treatment at high-volume facilities.

The results published in the *Journal of Thoracic Oncology*, the official journal of the *International Association for the Study of Lung Cancer*, show that patients (n=1,207) treated at facilities that handle 12 or greater cases of CCRT per year had longer overall survival (19.7 vs 17.3 months, p=0.02) compared to those treated at low-volume centers (n=8,866). The decreased risk for death was significant (HR=0.93; 95% CI: 0.87-0.99; p=0.03) after adjusting for patient characteristics and whether or not the patient was treated at an academic or non-academic center. Of note, patients treated at a high-volume center had a higher number of other diseases (comorbidities), more advanced lymph node involvement of their lung cancer, and were treated with more advanced radiation techniques.

The authors suggest that "improved multidisciplinary collaboration, more tumor-site specific specialists, higher rates of protocol compliance, and the ability to provide chemotherapy and radiation therapy at the same center may be contributing to the increased survival at high-volume facilities". Dr. Henry S. Park, senior author of the study, says "further research is needed to determine whether or not centralizing chemoradiotherapy at high-volume facilities will improve lung cancer survival while reducing complications and costs."

More information: *Journal of Thoracic Oncology*, journals.lww.com/jto/Abstract/ … oncurrent.98974.aspx

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