

Risk of COVID-19 Infection During Lung Cancer Treatment in the First Year of the Pandemic in the U.S.

Objective:

To evaluate the likelihood of developing a COVID-19 infection while undergoing treatment for lung cancer during the first year of the pandemic, as well as the additional risk of death associated with COVID-19 infection in this time period.

Methods:

Patients diagnosed with non-small cell lung cancer (NSCLC) in 2020 were evaluated in the National Cancer Database (NCDB). Three data fields were added in 2020 by the NCDB: 1) was a COVID-19 test performed, 2) did the patient test positive for COVID-19, and 3) the date of the patient's first positive COVID-19 test. The 90-day survival (from treatment initiation) for patients with a first COVID-19 diagnosis within 90 days following treatment initiation was assessed by calculating relative risks and by using Kaplan-Meier analysis among 1:2 propensity score-matched cohorts.

Results:

A total of 80,471 patients underwent treatment for NSCLC in 2020, of which 37,599 (46.7%) were tested for COVID-19. Overall, 525 (1.5%) patients tested positive for COVID-19 within the first 90 days of initiating treatment. This included 0.9% (n=89) of surgically managed patients, 1.5% (n=269) of patients who received chemotherapy, and 1.6% (n=327) of patients who received radiotherapy. The relative risk of 90-day mortality (COVID-19 positive vs. negative) was 4.75 (95% CI: 2.66-8.46) after surgery, 2.55 (95% CI: 2.03-3.19) after chemotherapy, and 2.25 (95% CI: 1.86-2.72) after radiotherapy. For each treatment modality, Kaplan-Meier analysis demonstrated significantly worse 90-day survival among patients testing positive for COVID-19 (Figure).

Conclusions:

In the first year of the COVID-19 pandemic, the risk of developing a COVID-19 infection while undergoing surgery, chemotherapy, and radiotherapy for non-small cell lung cancer appeared to be low. However, a COVID-19 infection during the time frame in which patients were undergoing treatment was associated with increased 90-day mortality, particularly in surgically managed patients.

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