

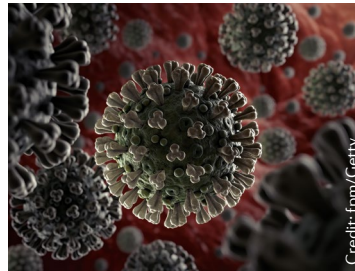
 EPIDEMIOLOGY

COVID-19 and cancer: what we know so far

Infection with SARS-CoV-2, resulting in coronavirus disease (COVID-19), can lead to acute respiratory distress syndrome (ARDS) requiring admission to an intensive care unit (ICU), and sometimes death, in a subset of patients. So far, we know that individuals ≥ 60 years of age and/or those with a suppressed immune system are particularly vulnerable to COVID-19, although how these risks apply to patients with cancer remains unclear. Several reports are beginning to emerge.

First, patients with cancer seem to be more likely to be diagnosed with COVID-19. Among 1,524 patients admitted to the Department of Radiation and Medical Oncology of Zhongnan Hospital of Wuhan University, 12 (0.79%) had COVID-19, versus 0.37% of the general population of Wuhan during the same period of time (OR 2.31, 95% CI 1.89–3.02). In the same study, patients with non-small-cell lung cancer (NSCLC) seemed to have a higher incidence of COVID-19, especially those >60 years of age (4.3% versus 1.8% in those aged ≤ 60 years with NSCLC).

Second, patients with cancer seem to have more severe COVID-19 symptoms than those without. In a retrospective analysis, the outcomes of 28 patients with cancer and COVID-19 admitted to one of three hospitals in Wuhan for quarantine and treatment of COVID-19 have been described. Of these patients, 10 (35.7%) had stage IV disease at the time of admission; lung cancer was the most common cancer type, in 7 patients (25%). As of February 26th, 15 patients (53.6%) had developed severe clinical events (those requiring mechanical ventilation or ICU admission), 10 patients (35.7%) had life-threatening complications and 8 (28.6%) had died. Most deaths (5) were caused by ARDS; other causes of death included pulmonary embolism, septic shock, and acute myocardial infarction. By comparison, among the general



population with confirmed COVID-19, 4.7% had severe clinical events and 2.3% of patients died. Receiving the most recent cancer treatment within 14 days (HR 4.1, 95% CI 1.09–15.32; $P = 0.037$) and patchy consolidation on chest CT (HR 5.44, 95% CI 1.50–19.75; $P = 0.010$) were both associated with severe clinical events among those with cancer.

These findings are supported by a nationwide analysis of data from 2,007 cases of COVID-19 from 575 hospitals across China. In this cohort, the 18 patients with COVID-19 and cancer had a higher incidence of severe events (39% vs 8%; $P = 0.0003$), and receiving chemotherapy or surgery in the past month was found to further increase this risk following adjustment for other variables (OR 5.34, 95% CI 1.80–16.18; $P = 0.0026$).

Despite many limitations, including low numbers of patients, the retrospective nature of the evidence and the limited follow-up durations, these data provide early insights into how the management of patients with cancer might be affected by the COVID-19 pandemic. Notably, patients with cancer seem to be both more likely to be diagnosed with COVID-19 and have more severe symptoms. In this scenario, oncologists need to weigh up the balance of risks versus benefits carefully when planning normally routine cancer treatments and follow-up appointments.

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ORIGINAL ARTICLES Yu, J. et al. *JAMA Oncol* <https://doi.org/10.1001/jamaoncol.2020.0980> (2020) | Zheng, L. et al. *Ann. Oncol.* <https://doi.org/10.1016/j.annonc.2020.03.296> (2020) | Liang, W. et al. *Lancet Oncol.* **21**, 335–337 (2020)