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Risk of COVID-19 for patients with cancer

We read the excellent Comment by Wenhua Liang and colleagues[1] in *The Lancet Oncology* with great interest. Of 1590 cases with confirmed coronavirus disease 2019 (COVID-19), 18 patients had a history of cancer. The authors concluded that patients with cancer had a higher risk of COVID-19 and with a poorer prognosis than those without cancer.

First, the data in the Comment by Liang and colleagues[1] showed a higher percentage of patients with cancer in the COVID-19 cohort than in the overall population. However, this observation is not sufficient to conclude that patients with cancer had a higher risk of COVID-19. The incidence of COVID-19 in patients with cancer would be more informative in assessing whether or not patients with cancer have an increased risk of COVID-19. Second, we reviewed the cancer history of the 18 individuals discussed in Liang and colleagues' Comment.[1] We are concerned that such a small sample size with a large amount of heterogeneity, presenting as various cancer types with different biological behaviours, highly variable disease courses (from 0–16 years), and diverse treatment strategies, might be filled with contingency and thus not ideally representative of the whole population with cancer. Notably, half of the patients with cancer had a disease course of more than 4 years, indicating that a substantial proportion of these patients might be clinically cured. Therefore, any conclusions that generalise to all patients with cancer should be interpreted with caution. Third, 13 (72%) of 18 patients with cancer had a history of surgical resection; the prolonged effects induced by surgery including immunosuppression should not be neglected. Comparison of patients with COVID-19 and surgical history with and without cancer would be of interest.

Additionally, the authors reported that patients with cancer were prone to severe events (admission to the intensive care unit requiring invasive ventilation, or death) from COVID-19. Evidence indicates that overwhelming inflammation and cytokine-associated lung injury could be important in instigating these severe events in patients with COVID-19.[2] However, accumulated evidence has shown that development of cancer is usually associated with a blunted immune status[3] characterised by overexpressed immunosuppressive cytokines, suppressed induction of proinflammatory danger signals, impaired dendritic cell maturation, and enhanced functional immunosuppressive leukocyte populations, which is contradictory to the events believed to result in severe events in patients with COVID-19. Indeed, one of the potential explanations for differing susceptibility and prognosis is the higher rate of smoking history in the 18 patients with cancer. Data have shown that tobacco use significantly increases the gene expression of angiotensin-converting enzyme 2, the binding receptor for severe acute respiratory syndrome coronavirus 2, which could explain the elevated susceptibility to COVID-19 in smokers.[4] Furthermore, cigarette smoking is the leading cause of chronic obstructive pulmonary disease, which has been identified as an independent risk factor in severe COVID-19 cases.[5]

Overall, current evidence remains insufficient to explain a conclusive association between cancer and COVID-19.

We declare no competing interests.

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