COMMENT & RESPONSE

SARS-CoV-2 Infections, Hospitalizations, and Mortality in Vaccinated Patients With Cancer in the US

To the Editor With great interest, we read the cohort study from Wang et al,1 which showed significantly increased risks for SARS-CoV-2 infection in vaccinated patients with cancer and that infections in patients with cancer were associated with substantial risks for hospitalization and mortality based on large-scale cohort data. The study addressed the importance of special care for vaccinated patients with cancer for preventing unexpected outcomes. We congratulate the authors on the timely and important work. However, some legitimate concerns should be considered for the application.

First, there are some biases from the management of SARS-CoV-2. Vaccination is regarded to be one of the most useful control measures to curb the transmission of SARS-CoV-2 in the community. In the study by Wang et al,1 3 types of vaccines (Pfizer-BioNTech, Moderna, and Johnson & Johnson) were introduced, and the protection against SARS-CoV-2 infection was significantly diverse among these different types of vaccines.2 In addition, the acquired immunity course of these vaccines was substantially varied.2 Beyond standard vaccination, prior use of antiviral drugs, corticosteroids, and other immune-modifying agents was associated with SARS-CoV-2 risk, later hospitalization, and mortality.3 Therefore, the authors1 are suggested to provide clear elaborations on these elements.

Second, there were no detailed illustrations on the types of SARS-CoV-2. The authors included data between December 2020 and November 2021, which was a long period. The enrolled patients potentially were infected with newly emerged SARS-CoV-2 variants such as Delta (B.1.617.2) and Omicron (B.1.1.529) at that time. The infectivity, transmissibility, pathogenicity, and immune invasion characteristics of Delta and Omicron are quite varied.4 Additionally, Omicron exhibits substantial resistance to the neutralizing activity of vaccines, convalescent serum, and most antibody therapies.4 Therefore, all these differences could cause great variability in hospitalization and mortality among patients with cancer. A subgroup analysis on the detailed types of SARS-CoV-2 is clearly recommended.

Finally, as the authors1 stated that cancer treatment, characteristics, and other cancer-related features affect the infection risks and outcomes, the severity of SARS-CoV-2 (asymptomatic vs mild to moderate vs severe) also affects the final outcomes of hospitalization and mortality. We noticed that there was great heterogeneity in the mean age between patients with cancer and patients without cancer (68.7 years vs 51.1 years), and it was suggested that the risk of SARS-CoV-2 infection could be higher in older adults (especially those aged ≥65 years).5 Overall, despite that the authors provided novel results, they should be more cautious in translating their findings because of the retrospective nature of the current study.

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Published Online: August 4, 2022. doi:10.1001/jamaoncol.2022.3048

Conflict of Interest Disclosures: None reported.


