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652.MULTIPLE MYELOMA: CLINICAL AND EPIDEMIOLOGICAL

When Patients with Plasma Cell Disorders Encountered the Largest Omicron Wave (December 2022) in China: A Real-World Multicenter and Multiregional Study

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Background: An unprecedented nationwide Omicron outbreak hit China in December 2022. Patients with plasma cell disorders have been confirmed to exhibit worse outcomes following COVID-19 infection, although data on the impact of Omicron on this population in China remain scarce. This study aims to report the clinical and epidemiological characteristics of plasma cell disorder patients during this major Omicron outbreak. It also analyzes the association between patient clinical characteristics and clinical course (infection, severity, hospitalization, and time to recovery) of COVID-19.
Methods: We performed a multicenter and multiregional retrospective study primarily involving nine large tertiary hematology centers across nine provinces/cities in China. The study period was limited to December 1 st, 2022 - January 19 th, 2023. A total of 404 plasma cell disorder patients participated in the survey.
Results: During follow-up, 342 patients had a laboratory or clinical diagnosis of COVID-19. The prevalence of COVID-19 within the study population was 76.2%. Among those with COVID-19, the majority were with multiple myeloma (325, 95.0%), and over half (201, 58.8%) were unvaccinated. At the time of COVID-19, 121 (40.1%) patients were undergoing maintenance therapy. Ninety (31.3%) patients had prior exposure to anti-CD38 monoclonal antibody, while 25 (8.7%) to CAR-T. The rates of severe illness and hospitalization were 16.4% and 20.5%, respectively. Four (5.7%) patients required ICU support and only two (2/277, 0.7%) deaths were reported. As of the data cutoff date (January 19 th, 2023), 231 (231/277, 83.4%) patients had recovered from COVID-19, with a median time to recovery of 14 days (95% CI: 13-15 days). Multivariate analysis identified age > 65 (OR 1.47, 95% CI 1.05-2.05, $P = 0.02$) and anti-CD38 monoclonal antibody within six months of COVID-19 (OR 1.47, 95% CI 1.03-2.09, $P = 0.03$) as independent risk factors for severe COVID-19 illness. Prior CAR-T therapy within six months was correlated with an increased risk of hospitalization (OR 3.49, 95% CI 1.07-11.4, $P = 0.04$) and prolonged time to recovery (HR 0.38, 95% CI 0.16-0.93, $P = 0.03$). Compared to maintenance therapy, patients at the induction or consolidation therapy stage had an elevated risk of hospitalization following COVID-19 (OR 1.55, 95% CI 1.04-2.33, $P = 0.03$). Notably, no significant protective effect of COVID-19 vaccination on infection or severe infection rates was observed ($P > 0.05$).

Conclusions: Although the impact of Omicron appears attenuated in plasma cell disorder patients, this vulnerable population still exhibits higher rates of severe illness and poorer outcomes compared to the general population. Apart from known risk factor (i.e. older age), certain treatment-related factors, including induction/consolidation therapy stage, recent anti-CD38 monoclonal antibody exposure, and prior CAR-T therapy, are associated with increased risks of severe COVID-19, hospitalization, and prolonged time to recovery. However, the protective effect of vaccination against COVID-19 is not identified. The findings from this work provide implications for the clinical management of PCD patients during the pandemic under the likely scenario of future resurgences of COVID-19.

Disclosures No relevant conflicts of interest to declare.

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