

Concerns about Long-term cardiovascular outcomes in COVID-19 survivors among non-vaccinated population: A retrospective cohort study from the TriNetX US collaborative networks

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A recent study of eClinicalMedicine found that COVID-19 survivors, compared with non-COVID-19 controls, had a significantly higher risk of cardiovascular events within 12-month follow-up.¹ This study offered timely information to readers. However, we have several concerns.

First, this study excluded patients who died within 30 days of the index date, a method that could lead to a Neyman bias that tends to distort survival analyses.² Thus, critically ill patients who had new cardiovascular events within 30 days of the diagnosis of COVID-19 were intentionally excluded, which may lead to an underestimation or overestimation of the true risk of cardiovascular events.

Second, this study conducted by the TriNetX EHR database is retrospective and observational, and the authors have mentioned the possibility of residual unmeasured confounders such as smoking, exercise, or family history of cardiovascular disease. We recommend a self-matched study design, which may reduce the interference caused by unmeasured confounders.³

Third, as the investigators recognized, there may be inaccuracies in this study caused by the diagnosis and coding of myocardial injury or myocarditis into myocardial infarction and vice versa. Here, we would like to emphasize the importance of reporting case ascertainment, providing positive predictive rates or performing sensitivity analyses (using a rigorous definition of

cardiovascular outcomes rather than just ICD-10) to make study results more reliable.

Although vaccination and antiviral therapy have produced positive results,⁴ further research is needed to prevent sequelae such as long-term cardiovascular events among COVID-19 survivors.¹

Contributors

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Declaration of interests

None reported.

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