Review of: "Role of Covid vaccine in determining ICU admission and death due to Covid-19 in Tamil Nadu"

Vijayaprasad Gopichandran

Potential competing interests: The author(s) declared that no potential competing interests exist.

This is a very important analysis of the role of COVID 19 vaccination on ICU admission and mortality due to COVID 19 in Tamil Nadu. This is a secondary data analysis and it concludes that having two doses of COVID 19 vaccine resulted in significant reduction in severe COVID 19 (ICU admissions) and death due to COVID 19. The strength of the study is that it analyses the effectiveness of the vaccine in reducing severe disease and mortality from real time data. However, some more clarity on some details in the methods, and analysis will help interpret the results better. How was the vaccination status obtained? Was it obtained from the hospital database, which in turn is obtained from self report by the patient or their caregivers? Or was it obtained or confirmed from the Co-Win national COVID 19 vaccination portal? This is important because, self report could be biased (more likely to be overestimate with the various restrictions and penalties sanctioned by the state for not accepting the vaccine). It is important to know whether the researchers confirmed the vaccination status from the CoWin Portal data. Secondly what were the standard criteria recommended by the state for ICU admission? To what extent were these criteria strictly adhered to? What was the ICU bed availability status during this period? Is it likely that some of the severe cases were misclassified due to non-availability of ICU beds? It would have been better to have a more objective criterion for classification of sever disease such as SpO2, PaO2/FiO2 ratio, respiratory rate, arterial blood gases or any such parameters rather than ICU admission rates as the ICU admission rates could be influenced by availability of ICU beds as well as the clinical judgment of the admitting health care provider. Thirdly, conspicuous by its absence in the paper is the odds ratio of admission to health facilities compared to care in CCC or Home Isolation. The data has been captured as described in the methods section, but this analysis is not reported. This is very important data. The researchers themselves start the paper by describing the importance of COVID 19 as a disease which burdened the health system. Prevention of hospitalisation is an important outcome from this perspective. It would be helpful to know this result also. Finally, the researchers should explain why they have limited themselves only to a bivariate analysis and why they have not attempted any multivariable model adjusting for age, sex, comorbidities, time period of admission and other such important variables which are likely to influence the severity of illness as well as mortality. Overall, this is important information. But if given more clarity on these lines, it would add more value to scientific literature on COVID 19 vaccines.