Review of: "Tocilizumab Plus Corticosteroid in Elderly Patients Hospitalized With COVID-19 Pneumonia: A Retrospective Cohort Study"

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Potential competing interests: No potential competing interests to declare.

Thank you for the opportunity to review this paper. The paper is well written, and the rationale is clear. However, your design has many limitations which makes it difficult to make useful conclusions from these results. As you mention in the discussion, patients were likely assigned treatment based on disease severity, which probably plays a large role in why the treatment group had higher mortality and more frequent adverse events.

From what I can read you make no efforts in mitigating this. I suggest using methods such as statistical adjustment or propensity weighting to minimize baseline differences. Even with that, it may be difficult to answer your hypothesis in an observational setup.

Title and introduction

The title succinctly and sufficiently conveys the contents of the article.

The introduction is brief and clearly lays out the rationale of why tocilizumab could be beneficial in COVID-19 and sums up current evidence.

1: Consider mentioning the doses used in other trials. For example RECOVERY reports that they used 400-800 mg depending on weight. This information would make it easier to consider your intervention in relation to what has already been tried in other trials.

2. Similarly, consider mentioning how big a proportion of patients in other studies received concommitant corticosteroids, if this information is available.

Methods

The population, exposures and outcomes are clearly explained.

3. In your methods section you mention that you assessed normality using histograms and three different statistical tests. I have trouble imagining how this would be done in practice. What would you do in case of conflicting test results? I would suggest choosing one statistical test and relying entirely on that.

4. You also type abbreviations next to the statistical tests but never use them again in the article.

5. Since your study design lends itself heavily to confounding by indication, how come you don't use any methods to account for baseline differences between groups, such as adjustment or matching?

I personally applaud that you decided to move away from the term “statistical significance”, though it creates a new question.

6. How do you decide when something is likely caused by random chance rather than your intervention?

Results

It seems like patients in the tocilizumab group had more severe disease, which is what would be expected.

7. You conclude “In terms of respiratory status improvement, there was no statistical evidence of a difference between the two groups for patients receiving any of the three levels of respiratory support at baseline”. What does this statement mean? How do you define statistical evidence?