

Dear Editors/Reviewers:

On behalf of my co-authors, we thank you very much for giving us an opportunity to revise our manuscript, we appreciate editor and reviewers very much for their positive and constructive comments and suggestions on our manuscript entitled ***“Mortality in patients with COVID-19 requiring extracorporeal membrane oxygenation: a meta-analysis”***. (ID: 70103). We have studied reviewer’s comments carefully and have made revision which marked in red in the paper. Attached please find the revised version, which we would like to submit for your kind consideration.

We would like to express our great appreciation to you and reviewers for comments on our paper. Looking forward to hearing from you.

Thank you and best regards.

Yours sincerely,

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List of Responses

Dear Editors and Reviewers:

Thank you for your letter and the reviewer comments concerning our manuscript entitled *“Mortality in patients with COVID-19 requiring extracorporeal membrane oxygenation: a meta-analysis” (ID: 70103)*. Those comments are all valuable and very helpful for revising and improving our paper, as well as the important guiding significance to our research. We have tried our best to revise our manuscript according to the comments and the language has been polished by native speaker in accordance with the suggestions from the reviewers. Revised portions are marked in red in the paper, and these changes will not influence the content and framework of the paper. The main corrections in the paper and the responses to the reviewer’s comments are as follows:

Responses to the reviewer’s comments:

Reviewer #1 and Science editor:

1. Response to comment: *There are few grammatical and typographical errors noted in the manuscript and it should be corrected throughout the manuscript.*

Response: We are very sorry for our negligence of making these errors and we have corrected this problem in the manuscript.

2. Response to comment: *Check the abbreviations throughout the manuscript and introduce the abbreviation when the full word appears the first time in the text and then use only the abbreviation*

Response: We have made corrections about abbreviations according to the Reviewer’s comments. The corrections have been marked in red.

3. Response to comment: *In the introduction, the authors may be given the recent updates since the authors given the data up to December 2020 only, and the introduction part is presented in very brief*

and still there is a big gap in between the current study and existing literature

Response: Considering the Reviewer's suggestion, we have added "*There are two basic methods can be used in the ECMO treatment: Venovenous ECMO (VV-ECMO) or Venovenous ECMO VA-ECMO. For the vast majority of COVID-19 patients who need ECMO treatment, we adopted VV-ECMO (Li X, Guo Z, Li B, Zhang X, Tian R, Wu W, et al. Extracorporeal membrane oxygenation for Coronavirus disease 2019 in Shanghai, China. ASAIO J. 2020;66(5):475-481)*" "*Research has shown that, although there are still many complications associated with it, but 63% of patients recovered from ARDS and weaned from ECMO (Marina Pieri 1, Vittoria Donatelli 1, Maria Grazia Calabrò. Eleven Years of Venovenous Extracorporeal Membrane Oxygenation for Acute Respiratory Distress Syndrome: From H1N1 to SARS-CoV-2. Experience and Perspectives of a National Referral Center[J], J Cardiothorac Vasc Anesth. 2021 Sep 24; S1053-0770(21)00842-9. doi: 10.1053/j.jvca.2021.09.029. Online ahead of print)*" and "*Venerable age, late ECMO initiation time and multiple complications (diabetes, heart disease, obesity, etc.) are all independent risk factors that increase the 90-day mortality rate (Matthieu Schmidt, Elise Langouet, David Hajage. Evolving outcomes of extracorporeal membrane oxygenation support for severe COVID-19 ARDS in Sorbonne hospitals, Paris. Crit Care. 2021; 25: 355). The role of ECMO in the treatment of diseases caused by this new virus is still uncertain and controversial (Oliveira TF, Rocha CAO, Santos AGGD, Extracorporeal Membrane Oxygenation in COVID-19 Treatment: A Systematic Literature Review.Braz J Cardiovasc Surg. 2021 Jun 1;36(3):388-396)*" to the introduction part.

4. Response to comment: *The term "in vitro" should be italic which is used in the inclusion and exclusion criteria in the materials and methods*

Response: Thank you so much for your careful check and we have made correction already in the

manuscript.

5 Response to comment: *The figure legends should be improved and a proper footnote should be given*

Response: We are very sorry for our incorrect writing. Considering the Reviewer's suggestion, we have re-written this part as follows: The figure legends:

Figure 1 Patients selection flowchart. COVID-19: Coronavirus disease 2019

Figure 2 Forest plot of in-hospital or short-term mortality in patients with COVID-19 requiring ECMO. COVID-19: Coronavirus disease 2019; ECMO: extracorporeal membrane oxygenation

Figure 3 Subgroup forest plot of in-hospital or short-term mortality in patients with COVID-19 requiring ECMO. There were significant differences in mortality between (A) location, (B) study setting, (C) sample size, and (D) NOS score groups respectively. COVID-19: Coronavirus disease 2019; ECMO: extracorporeal membrane oxygenation; NOS: Newcastle-Ottawa Scale

Company editor-in-chief:

1. Response to comment: *Please provide the original figure documents. Please prepare and arrange the figures using PowerPoint to ensure that all graphs or arrows or text portions can be reprocessed by the editor. Authors are required to provide standard three-line tables, that is, only the top line, bottom line, and column line are displayed, while other table lines are hidden. Please upload the approved grant application form(s) or funding agency copy of any approval document(s).*

Response: Thank you for your rigorous advice. We have revised and improved the pictures and tables of this manuscript according to your advice, and provided the original files. Also, we uploaded the approved grant application form and funding agency copy of approval document.

We appreciate for Editors/Reviewers' warm work earnestly, and hope that the correction will meet with approval.

Once again, thank you very much for your comments and suggestions.

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