Dear reviewers:

Thank you for giving us the opportunity to submit a revised draft of the manuscript "**Current status and prospects of basic research and clinical application of mesenchymal stem cells in acute respiratory distress syndrome**" for publication in the *World Journal of Stem Cells*. We appreciate the time and effort that you and the reviewers dedicated to providing feedback on our manuscript and are grateful for the insightful comments on and valuable improvements to our paper. We have incorporated all of the suggestions made by the reviewers. Responses to comments on the manuscript are provided below

Reviewer #1:

Scientific Quality: Grade B (Very good)

Language Quality: Grade A (Priority publishing)

Conclusion: Minor revision

Specific Comments to Authors: The paper by Liang et al is very interesting and detailed, title and abstract reflect the work and the discussion fit the most important points. More in details, the author focused on the immunomodulatory properties of stem cells, but they also explored other mechanisms to explain the MSC potential against acute respiratory distress syndrome, such as fibrosis reduction and tissue repair. Tables help the reader, although very detailed in some cases. I suggest adding a picture to sum up all the potentially involved molecular mechanisms of action of MSCs.

Response: We feel great thanks for your professional review work on our article. As you are concerned, there are several problems that need to be addressed. According to your nice suggestions, we have made extensive corrections to our previous draft, the figure 3 has been added to the draft and was shown as follows.

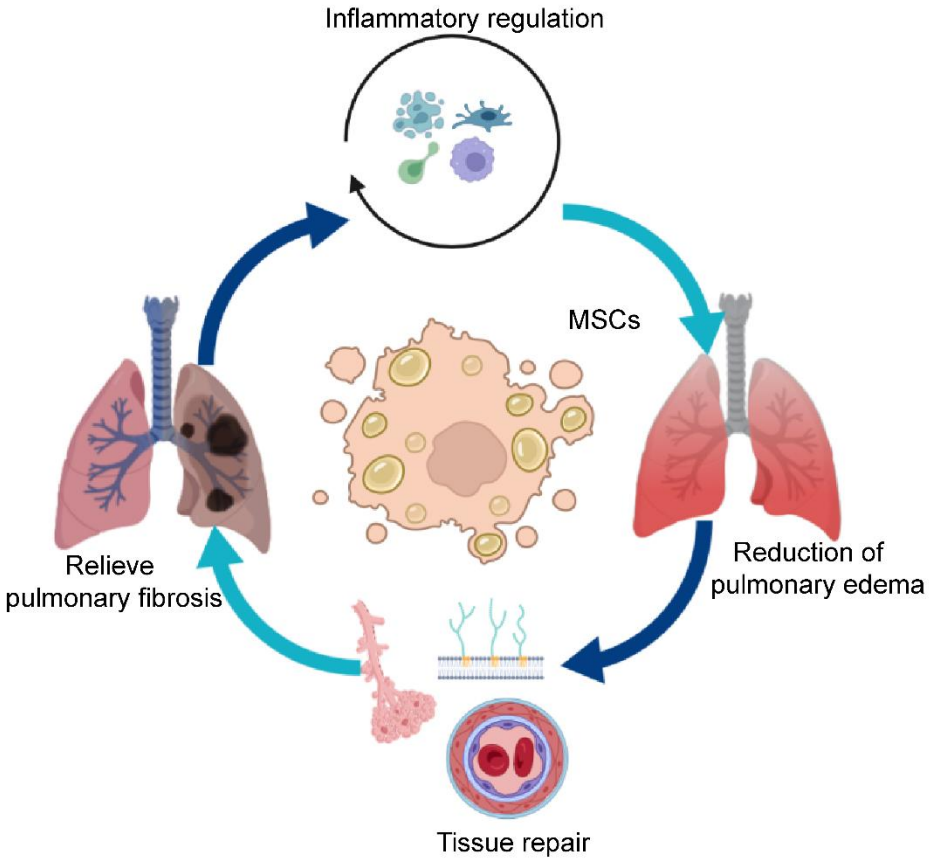

Figure 3 The main mechanism of mesenchymal stem cell therapy for acute respiratory distress syndrome (ARDS). MSC can treat ARDS by regulating inflammatory response, reducing pulmonary edema, alleviating pulmonary fibrosis, and promoting tissue repair.

Reviewer #2:

Scientific Quality: Grade B (Very good)

Language Quality: Grade A (Priority publishing)

Conclusion: Accept (General priority)

Specific Comments to Authors: This is a well-presented and comprehensive review on the application of mesenchymal stem cells in acute respiratory distress syndrome (ARDS). The current knowledge, and the perspectives disclosed by basic science are presented in a balanced way, along the discussion of the currently available clinical studies. Overall, this review article is an easy-to-read and updated work.

Response： We sincerely thank the editor and all reviewers for their valuable feedback that we have

used to improve the quality of our manuscript.

Reviewer #3:

Scientific Quality: Grade C (Good)

Language Quality: Grade A (Priority publishing)

Conclusion: Minor revision

Specific Comments to Authors: I would like to congratulate the authors for the manuscript. It is interesting and can bring new perspective. I have some comments: The manuscript discussed about current status and prospects of basic research and clinical application of MSCs in ARDS. Key points have been discussed by the authors, including immune regulation, tissue repair, and alleviation of fibrosis. Some other authors have discussed this similar topic, with regard to Covid-19. The authors should also discuss the role of EVs and small molecules produced by the MSCs, in relationship to ARDS. References number 94 to 105 and 120 to127 are missing in the text, Table 2 is missing in the text. Please correct these.

Response： Thank you for your sincere advise. Based on these comments and suggestions, we have made careful modifications to the original manuscript, and carefully proof-read the manuscript to minimize typographical and grammatical errors. We believe that the manuscript has been greatly improved and hope it has reached your magazine's standard. Specific improvements are as follows：

1. We have added the related section about the role of EVs and small molecules produced by the MSCs, in relationship to ARDS in the manuscript（Page 8, Line7-16: Additionally, many studies have shown that MSC–extracellular vesicles (EVs) play key roles in the pathogenesis and progression of acute lung injury (ALI)/ARDS[40]. One of the underlying mechanisms may involve the potential impairment of antigen uptake, which may halt DC maturation[41]. MSC–EVs from the human BM may regulate the levels of maturation and activation markers (CD83, CD38, and CD80) and inflammatory cytokines (interleukin (IL)-6, IL-12p70, and TGF-β) in vitro via regulating the CCR7 gene by carrying miR-21-5p[42]. Additionally, the emerging role of MSC–EVs in facilitating pulmonary epithelium repair, rescuing mitochondrial dysfunction, and restoring pulmonary vascular leakage has been shown[43，44]）.

2. The references missing the text were shown in the table1 and table 2, please check.

3. The Table 2 was added in the text(Page 13, Line2).

Thank you again for your positive comments on our manuscript. ***World Journal of Stem Cells*** is an influential journal which aims to improve our understanding of stem cells. From all the papers published in your journal, readers have been learning a lot. Hopefully, we could have our article been considered of publication in your journal. Should there been any other corrections we could make, please feel free to contact us.

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