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PEER-REVIEW REPORT

Name of journal: *World Journal of Stem Cells*

Manuscript NO: 79492

Title: Acute liver failure: A systematic review and network meta-analysis of optimal type of stem cells in animal models

Provenance and peer review: Unsolicited manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05395420
Position: Editorial Board
Academic degree: DNB, MS
Professional title: Assistant Professor
Reviewer's Country/Territory: India
Author's Country/Territory: China

Manuscript submission date: 2022-10-13

Reviewer chosen by: AI Technique

Reviewer accepted review: 2022-10-16 13:54

Reviewer performed review: 2022-10-16 14:36

Review time: 1 Hour

Scientific quality	[ ] Grade A: Excellent [ ] Grade B: Very good [Y] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Language quality	[ ] Grade A: Priority publishing [Y] Grade B: Minor language polishing [ ] Grade C: A great deal of language polishing [ ] Grade D: Rejection
Conclusion	[ ] Accept (High priority) [ ] Accept (General priority) [ ] Minor revision [Y] Major revision [ ] Rejection
Re-review	[ ] Yes [Y] No

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Peer-reviewer statements	Peer-Review: [Y] Anonymous [ ] Onymous Conflicts-of-Interest: [ ] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

Dear authors The search strategy presented needs to be even more robust becoz PRISMA standards require minimum 4 database of literature search the study keywords does not account for alternate terms for stem cells such as stromal cells and cellular therapy which might miss some studies with alternative names used for the stem cells although the authors claim the LSC to be the most promising subtype for further analysis, the traditional meta-analytic framework identified the LSC to be no way different from the placebo in terms of all outcomes other than IL-6 and how does the result vary in case of the network analysis Moreover, the title says 9 subtypes and only 6 types were analyzed so it needs to be changed authors did not explain the method of evaluation of the bias in the network assesed using meta-analytic bias assessment approach such as CiNeMA approach which is needed to validate the findings of the individual network assessed

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Reviewer's code: 06338472
Position: Peer Reviewer
Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: Croatia

Author's Country/Territory: China

Manuscript submission date: 2022-10-13

Reviewer chosen by: AI Technique

Reviewer accepted review: 2022-10-31 11:51

Reviewer performed review: 2022-11-08 20:24

Review time: 8 Days and 8 Hours

Scientific quality	[ ] Grade A: Excellent [Y] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Language quality	[Y] Grade A: Priority publishing [ ] Grade B: Minor language polishing [ ] Grade C: A great deal of language polishing [ ] Grade D: Rejection
Conclusion	[ ] Accept (High priority) [ ] Accept (General priority) [Y] Minor revision [ ] Major revision [ ] Rejection
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SPECIFIC COMMENTS TO AUTHORS

1)The original findings of this manuscript is comparision of prevous research of the therapeutic potential of different types of stem cells in the treatment of acute liver failure through subgroup analysis of traditional meta-analysis and network meta-analysis, in order to explore the optimal types of stem cells and provide reference for animal experiments and clinical research in the future. Manuscript meets the all criteria according to the criteria checklist (the title, abstract, key words, etc). In the introduction, I sugest a better and more detailed definition of acute liver failure in accordance with the guidelines. Until today, it is not clear which kind of stem cells has the most therapeutic potential. This meta-analysis, has found that although mesenchymal stem cells are the current research hotspot, liver stem cells have the greatest therapeutic potential among the stem cells included in the analysis, which need to be paid more attention in the future. 2) The quality and importance of this manuscript is very good (grade B) since it is a meta analysis. The new findings of this study (meta-analysis)indicate that liver stem cells have the greatest therapeutic potential among the stem cells included in the analysis. The conclusions appropriately summarize the data that this study provided. Although mesenchymal stem cells are the current research hotspot, liver stem cells have the greatest therapeutic potential among the stem cells included in the analysis, which need to be paid more attention in the future. Authors found that stem cell therapy could significantly reduce the levels of ALT, AST, TNF- and IL-6 in animals with acute liver failure through a comprehensive analysis of 72 studies included. As the first study in the current field, this research is carried out from four aspects of ALT, AST, TNF- alfa and IL-6, and the results are consistent. 3)

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Limitations of the study:1) Due to the small number of studies and the large differences in the treatment strategies of stem cells in different studies, it is difficult for us to further conduct subgroup analysis on the transplantation dose and route of stem cells to obtain more information.2) Search only in English database, which may lead to certain linguistic bias. 3) Failure to search grey literature and conference abstracts may lead to publication bias. The future directions of the topic described in this manuscript: because of the low quality of evidence on the internal and external authenticity of animal studies, more high-quality animal studies are needed in the future to explore the most promising stem cells. This publication should be an incentive for further research and application of stem cells in acute liver failure in the future in the clinical practice.