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PEER-REVIEW REPORT

Name of journal: *World Journal of Gastroenterology*

Manuscript NO: 67639

Title: Ultrastructural changes in porcine liver sinusoidal endothelial cells of machine perfused liver donated after cardiac death

Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05433027
Position: Peer Reviewer
Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: China

Author's Country/Territory: Japan

Manuscript submission date: 2021-05-19

Reviewer chosen by: AI Technique

Reviewer accepted review: 2021-05-24 12:43

Reviewer performed review: 2021-05-30 08:11

Review time: 5 Days and 19 Hours

Scientific quality	[ ] Grade A: Excellent [Y] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish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) [Y] Accept (General priority) [ ] Minor revision [ ] 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

The superiority of the machine perfusion preservation (MP) to simple cold storage was reported in kidney and liver preservation donated after cardiac death(DCD), the MP of the DCD grafts has been discussed about the optimal conditions including perfusion temperature, oxygenation, flow rate and pressure, steady or pulsatile flow,oxygen and nutrition-containing solution have also been reported to have numerous advantages to liver transplantation,but there are few reports about fusion temperature,especially midthermic machine perfusion (MMP). The authors comparatively analyzed the ultrastructural changes in the LSEC and sinusoids around them at four hours after HMP or MMP by using OM-SEM. MP alleviated the ER damage of LSEC caused by warm ischemia, MMP temperature conditions restore the metabolism of LSEC via the normalization of cristae of mitochondria and prevent the damage of the liver graft. The findings of the authors are very interesting. It is suggested that MMP is more effective than HMP in alleviating graft injury after DCD; However, there is still a long way for clinical application, which is also the direction of the author's efforts today In the abstract, the author only describes how to group, but does not describe the use of electron microscopy to evaluate the ultrastructures. In pictures 2-5, there are groups A, B, C, and D. can you put A, B, C, and D together, so that you can see the differences visually through horizontal comparison in one picture. The ultrastructural damage of liver was confirmed by electron microscope. Can the activity of hepatocyte be reevaluated by deepening method.

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Reviewer's code: 03660289
Position: Peer Reviewer
Academic degree: MD
Professional title: Doctor, Surgeon
Reviewer's Country/Territory: Italy
Author's Country/Territory: Japan

Manuscript submission date: 2021-05-19

Reviewer chosen by: AI Technique

Reviewer accepted review: 2021-05-20 09:08

Reviewer performed review: 2021-05-30 14:33

Review time: 10 Days and 5 Hours

Scientific quality	[ ] Grade A: Excellent [Y] Grade B: Very good [ ] 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) [Y] Minor revision [ ] Major revision [ ] Rejection
Re-review	[Y] Yes [ ] No

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

SPECIFIC COMMENTS TO AUTHORS

The manuscript is well written and interesting and provides insight into ultrastructural changes of DCD livers after machine perfusion. I have only a few issues: 1. The HMP used in group A is similar to dual-HOPE except for the portal line, which is not oxygenated. Can the authors comment on this? 2. Euro-collins solution was used for cold flush, while UW solution was used for HMP/MMP. Can the authors comment on the change of perfusion solution? 3. The authors say that they used an unpaired two-tailed t-test to compare groups A and B, but I cannot find any p-value in the text and figures.