Peer Review File

Article information: https://dx.doi.org/10.21037/jtd-2025-1606

Reviewer A

Overall Assessment

This review manuscript addresses an important an underexplored aspect of lung transplantation: the role of precise temperature management in static lung preservation. The authors introduce the "thermoregulation concept" and argue that a nuanced, degree-by-degree understanding of preservation temperatures may be critical for improving outcomes, particularly in the era of DCD and evolving machine perfusion technology.

The topic is timely and relevant. However, the manuscript in its current form is difficult to read and requires substantial revision to improve clarity, concision and logical flow. The proposed concept is undermined by the writing quality, including long, hard to follow and redundant sentences.

Response) We wish to thank the editor and the reviewers for their comments and questions, which we addressed point by point. Our responses to the reviewers are highlighted in red.

Strengths

The review brings together the framing of thermoregulation window as central to static lung preservation and appropriately situates this within broader trends of transplantation including DCD expansion, use of machine perfusion and its success in abdominal organs and EVLP. Disucssion of emerging devices adds practical relevance.

Major Comments

Writing and readability

- The extremely long sentences are difficulty to read and make the concepts difficult to understand.

Response) We edited throughout a manuscript with our professional editing colleague to improve while we believe that the revised manuscript is much improved.

Definition of concept

- Thermoregulation concept is mentioned but not clearly defined. A succinct definition should be included in the introduction and reinforced in the conclusion.

Response) According to the reviewer's suggestion, we revised the Keypoint 2 paragraph delineating the concept of thermoregulation. In line with these revised statements, the statements in the Introduction as well as the conclusion have been *also duly revised.*

Evidence presented

- Numerous studies are cited but there is no differentiation between animal, pre-clinical and clinical evidence. This would assist readers in examining and balancing the evidence presented.

Response) According to the reviewer's suggestion, we revised Table 1 which now distinguishes between animal/pre-clinical studies and clinical trials for many of the cited studies.

Clinical relevance and translation

- The paper would be better serviced by clearer recommendations about how they should or should not adopt these concepts, how should future studies be designed.

Response) According to the reviewer's suggestion, we revised the manuscript to stress the importance of future studies focusing on small temperature differences between 0 and 10°C and careful monitoring is stressed in the edited revision.

Relationship to machine perfusion

- Static preservation and machine perfusion seem to be presented as competing approaches. Are they really? Would it be better to consider them as complementary, each having a role in lung transplantation?

Response) We totally agreed with the reviewer that the static preservation and machine perfusion in the context of lung preservation are not competing but each having a distinct role while their synergistic effects may be expected through a unique, lung-specific approach.

Minor Comments

The abstract is too brief. It does not adequate describe the paper, nor define the thermoregulation concept.

Response) According to the reviewer's suggestion, the abstract has been rewritten.

The introduction is difficult to understand.

Response) According to the reviewer's suggestion, we revised the entire introduction while we believe that the revised introduction is improved for better understanding.

Rewriting these sections for clarity will significantly improve the paper.

Response) We edited throughout a manuscript with our professional editing *colleague to improve and clarify while we believe that the revised manuscript is much improved.*

Reviewer B

1. We have made some revisions to the manuscript content. Please confirm the changes made.
2. Please first define ALL abbreviations shown in the Main Text of your article. You should also check Table 1, as well as legends, for this matter. An abbreviation list should be provided along with your revision.

Response) According to your instructions, I attach the final version of the manuscript where all the suggestions were incorporate.