Reviewer’s report

Title: Reliability of pleth variability index in predicting preload responsiveness of mechanically ventilated patients under various conditions: a systematic review and meta-analysis

Version: 0 Date: 15 Feb 2019

Reviewer: Tsuneo Tatara

Reviewer’s report:

The authors evaluated reliability of pleth variability index (PVI) in predicting preload responsiveness of mechanically ventilated patients in various conditions by meta-analysis. The issue is important for optimal fluid therapy in critically ill patients. This reviewer raises several major concerns especially on design of the study.

<Major comments>

1. Design of the study

As the authors commented in the Introduction, a lot of study on reliability of PVI in predicting fluid responsiveness has been reported. Indeed it is a good idea that the results are analyzed according to patient population, patient background such as vascular tone might be largely different within each patient population. Therefore, conclusion according to meta-analysis in this study may not be valid.

2. Purpose and conclusion

The purpose of this study was the comparison of reliability of PVI to predict preload responsiveness between (i) undergoing operation or without operation, (ii) undergoing cardiac surgery or noncardiac surgery, (iii) adults or children, (iv) different types of volume expansion (in the Introduction). However, the conclusion in the Abstract was "PVI can play an important role in bedside monitoring for mechanically ventilated patients who are not undergoing surgery." This corresponds to (i) above. How about other comparisons?

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess
Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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