Reviewer’s report

Title: Cardiac Surgical Outcome Prediction by Blood Pressure Variability Indices Poincaré plot and Coefficient of Variation: an Observational Study

Version: 0 Date: 12 Oct 2019

Reviewer: Anthony Absalom

Reviewer's report:

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The authors present the results of a study of the correlations among blood pressure variability and outcome (mortality and renal failure) in patients undergoing cardiac surgery.

The methodology used is novel for anesthesia research, and overall the paper is interesting.

I suggest the following to improve the paper:

1. Explain better the rationale for the study. If it is possible to predict outcome from intra-operative hemodynamic data, how does this help the clinician and the patient?

2. Methods - explain why only patients undergoing CPB were included.

3. Methods - explain briefly who the elliptoid was calculated (how does Matlab do this?), and how the CD1 and CD2 are calculated. Are CD1 and CD2 the cartesian lengths of the short and long axes, or half of the long axis etc.

4. Language review - some rather colloquial or unusual terms are used. E.g. we usually say that patients are transferred (not shifted) and that patients "died" (expired can be about respiration).
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

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

Yes

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

Yes

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 am able to assess the statistics

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

Needs some language corrections before being published

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