Reviewer’s report

Title: High-frequency power of heart rate variability can predict the outcome of thoracic surgical patients with acute respiratory distress syndrome on admission to the intensive care unit: a prospective, single-centric, case-controlled study

Version: 1 Date: 21 Nov 2017

Reviewer: Tobias Kammerer

Reviewer's report:

I appreciate the substantial amount of work that the authors have done in providing a significant revision. The manuscript is improved. Unfortunately, some issues remain, and some new one has been introduced. Attention to these will improve the manuscript further.

The main critics are still the missing information about the patients included in the trial and missing perioperative data.

In detail I have the following general questions and comments:

1. There is still a lack of information about the intraoperative procedure and the anesthesia management. Although this was a case-control study, you should be able to provide these data retrospectively. As a minimum you should give the following information: How many patients received thoracic surgery in your hospital during the trial duration and how many (n/%) developed ARDS? How was the ASA classification and comorbidities ("Thoracic Revised cardiac Risk index" Salati et al. Curr Surg Res (2016); 4:37)? What was the primary diagnosis in these patients? What kind of surgery was used (VATS vs open surgery)? How long was the duration of surgery and one-lung ventilation? What about transfusion rate? How was the airway management (double-lumen tube, bronchus blocker)? Was volatile or intravenous anesthesia used? What about regional anesthesia? How was the respirator setting in the OR?

2. The same applies to intensive care data: As a minimum you should provide for ARDS patients: length of ventilator support, ICU stay, hospital stay, ventilator free days, fluid balances and transfusion rates, vasopressors and catecholamines, re-thoracotomy rate, rate of postoperative pulmonary complications (re-intubation rate etc.), antibiotics, SAPS and TISS score, incidence and kind of major cardiovascular events, cause of deaths.

3. Please add the exact time period of patient recruitment.
4. P12, L36: was fentanyl only given to ARDS patients? If yes: what was used as a pain killer in the non-ARDS group? What about regional anesthesia?

5. Generally, please add relevant information you gave me in your comments (for example the target MBP of > 60 mmHg) into the text.

6. If you provide perioperative data, you should do a multivariate analysis with further variables. For example smoker status, thoracic revised cardiac risk index, ASA classification, preoperative inflammatory lab parameters etc.

7. Your comment No.33: please add this explanation into the main text.

8. P4, L20: This conclusion cannot be done due to the fact, that you did not calculate further variables with multivariate regression. HFP is a predictor, but maybe not the best of all.

9. P15, L39: To support this hypothesis you should add a multivariate analysis with these parameters too.

10. P18, L4ff: This is one reason, why you should give these informations in the tables!

Additionally you can find some minor corrections in the revised pdf-file attached.

**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 recommend additional statistical review

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