Reviewer’s report

Title: Observations on significant hemodynamic changes caused by high concentration of epidurally administered ropivacaine: Correlation and prediction study of stroke volume variation and central venous pressure in thoracic epidural anesthesia

Version: 0 Date: 23 May 2017

Reviewer: Ya-Jung Cheng

Reviewer’s report:

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The title: dose effect of epidurally administered ropivacaine on hemodynamics....

Please correct the title for there is significant blood pressure change, SVR changes only in the groups with 60mg bupivacaine.

abstract:

conclusion: as the authors controlled the volume injected into epidural space, the dose is dependent on concentration of bupivacaine. I think the authors are suggesting that there is higher risk of hypotension while using 0.75% bupivacaine epidurally. Higher dose means that with a large volume in low concentration (the same dose) may cause the same effects. however, that can not be concluded in this investigation. In addition, both CVP and SVV are weak predictor for hypotension base on the ROC curve.

Methods:

Do all the patients have the similar NPO time? How is the data from Flotrac after initial preoperative fluid loading?

Results:

The second paragraph can be omitted for all the data are fully demonstrated in table 1. it's quite clear.

The 3rd,4th, and 5th paragraph, that is something that should be shown in the discussion section.

The main results are:
0.75% epidural ropivacaine is associated with lower MAP. Bupivacaine in the other concentration is relative less hypotension as well as ephedrine consumption.

The time of decrease of blood pressure will be from 10 to 20 minutes.

All the parameters are weakly correlated.

Discussion:

the 3rd paragraph:

can it be possible to do a subgroup analysis for aged patients? If the aged group is severely affected by lower concentration of ropivacaine, that's could be important in clinical practise. As we know, the aged people are more sensitive to local anesthetics.

For 0.75% ropivacaine, the true hemodynamic effects are lower SVRI, lower HR, lower cardiac index but well maintained SV. There is nothing about myocardial depression. and as demonstrated in your table, the MAP was 69.6 +/- 14.5 mmHg. Do you think it's harmful for patients?

By ROC curve, both SVV and CVP are both weak predictors for hypotension.

**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:

Not suitable for publication unless extensively edited

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