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: 1 Date: 29 Jul 2017

Reviewer: Ya-Jung Cheng

Reviewer’s report:

In general, the article is more clear, specific, and much easier to follow. However, it would be better if the manuscript can be written in a concise way. English editing is strongly recommended.

The following are my comments:

Abstract:

Results: 109 patients were analyzed. MAP and systemic vascular resistance index were significantly decreased and SVV was significantly increased after epidural loading only in 0.75% ropivacaine group. Significantly profound hypotension was found in aged patients.

Methods:

The first and second paragraphs should be written by a more concise, non-repeated way.

Results: please rewrite and organize the results.

The first paragraph: The consort flow diagram was shown as in figure 1. 109 patients were included for analyze. The demographic data and anesthetic data were shown in Table 1 and there were non-significantly differences among three groups. You do not have to repeat the data in the manuscript.

The second paragraph: In 0.75% ropivacaine group, there were significantly decreased MAP, SVRI, and significantly increased SVV than those in 0.375% and 0.2%.

The 4th paragraph: just show your results, for example, the time course of hemodynamic and parametric changes was shown as in figure 2. Significant changes were observed at T10 (10 minutes after loading).

The 5th paragraph: we also analyze the differences on hemodynamic changes in young (<60 y/o) and old (>60 y/o) patients in each group as in table 2. I do not think "interesting" is optimal in the results.
The 6th paragraph: correlation between parameters was shown as in table 3.

The 7th paragraph: as in previous paragraph, it is not necessary to repeat results in the manuscript.

Discussion:

The first paragraph: I suggest the authors to start with a simple way such as

The main results in our study are: 1) Significantly decreased MAP after epidural administration of ropivacain was observed only with 0.75% but not with 0.375% and 0.2% ropivacain. 2) Reduction of SVR, increase of SVV, but not changes on CVP, were significantly correlated with decrease of MAP. 3) Hypotension in the high concentration group was more prevalent in aged patients, and the accompanying SVV changes were more pronounced. 4) Despite significantly correlated with MAP changes, SVV was found to be a weak predictor of hypotension following TEA.

How about to rewrite the discussion based on the authors’ results in a concise and precise way? I suggest the authors to have a brief conclusion with clinical impact on each paragraph.

Firstly, I think the results agree with that "hypotension after TEA is mainly associated with deeper sympathetic blocks but not decreased stroke volume" by the changes of MAP, SVRI and SV. Please give the readers a conclusion with clinical impacts, such as 0.75%, but not concentrations below 0.375% ropivacain, administered epidurally with general anesthesia may associated with significant hypotension, especial on patients aged more than 60. The increase of SVV, but not changes in CVP, is significantly correlated with development of hypotension. Though SVV is found not a strong enough predictor of hypotension after TEA, we still recommend the cutoff value of 9.5%.

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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