Reviewer's report

Title: Usefulness of intra-operative neuromuscular blockade monitoring and reversal agents for postoperative residual neuromuscular blockade: a retrospective observational study

Version: 0 Date: 04 Jun 2019

Reviewer: Anthony Kovac

Reviewer's report:

The authors report a study evaluating the occurrence of residual NMB when neuromuscular monitoring is or is not used. They also report any associated outcomes.

Abstract: The authors repeat their primary and secondary outcomes in the Methods that was also previously stated in the background section of the abstract. Please be more succinct and brief and delete the primary and second outcomes in the methods section.

page 4, line 40: Please explain or site references for the authors statement of the "high incidence of RNMB."

page 5, line 9-11: how much did sugammadex lower the incidence of RNMB?

Page 5, line 30-33: Have the authors published their results of 20-30% RNMB in their hospital?

page 5, lines 55-57: Please explain potentially related variables?

Page 11, lines 33-36: Why was sugammadex unsuccessful to reverse blockade. 16% faiulure rate seems far too high. Was the incorrect dose of sugammadex used?

Page 12, line 53 Please explain why the rate of quantitative NMB monitoring so low in their hospital, a major hospital in Argentina and that the availability of monitors was so high?
Page 13, lines 16-19: Why such a low use of reversal agents in your hospital?

Page 13, lines 43-46: Because this is a retrospective study, a major weakness and flaw in this reviewers opinion is that the authors did not have access about the depth of paralysis at which a reversal agent such as neostigmine was administered.

Page 14, lines 28-58: There are major study limitations of which are very evident and that the authors themselves state.

Page 14, line 45: Why were two different types of monitors used?

Page 15, line 9: Did the patients experience any pain if they were conscious at the time the measurements were evaluated. This in spite that the authors state < 50 mA i9s acceptable in terms of patient comfort. Were that patients comfortable?

Conclusions, page 15: The authors seem biased in favor of the use of sugammadex. Are the authors mainly evaluating the use of NMB monitoring or the use of neostigmine and sugammadex. Some may argue that if neostigmine is given early enough the TOF ratio will still reach a level of 90%.

Table 1; There were unequal numbers of females and males in the unmonitored group while the smaller monitored group had similar numbers of males and females. Could the difference of muscle mass between males and females have been a factor in the non-monitored group?

Another confusing fact is the use of different types of NMB agents. Were all of the atracurium patients reversed with neostigmine? I would hope that none of the atracurium patients were reversed with sugammadex. As sugammadex is only effective for reversal of rocuronium and vecuronium.
Why were sugammadex doses larger than 2 mg/kgm used? Table 1 shows sugammadex doses of 3.22 and 3.9 mg/kgm for the non-monitored and monitored groups, respectively.

Table 3: It still confuses me why sugammadex was not successful in 3 of 19 patients who did not receive NMB monitoring. Please explain in your discussion section.

**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

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Please indicate the quality of language in the manuscript:

Acceptable
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If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I have been and am a speaker for Merck (the maker of Sugammadex) on their Speakers Bureau.

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