Reviewer's report

Title: Intraoperative ventilation: incidence and risk factors for receiving large tidal volumes during general anesthesia

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Reviewer: Marcus J Schultz

Reviewer's report:

Fernandez-Bustamante et al conducted a retrospective study evaluating the incidence of and risk factors for applying high tidal volumes (VT > 10 mL/kg) in surgical patients without lung injury. The study does not contain novel insights. Data presentation is poor and sometimes incomplete. The discussion and conclusion could be improved. My comments are summarized below:

Major Compulsory Revisions:

1. Methods: Why is the group VT 8–10 ml/kg left out of the data? I would advise the authors to present either 2 groups (VT > 10 ml/kg and < 10 ml/kg) or 3 groups (VT > 10 ml/kg, VT 8–10 ml/kg, VT > 10 ml/kg).

2. Results: the relationship of PBW and ABW to tidal volumes is shown in figure 1 as scatter plot in the results. To me this representation does not underline de results. Presenting the correlation coefficients in the text would suffice.

3. Results: in Figure 2 the PBW and the heights of the groups are shown. As PBW is a function of the height, the figures of latter could be left out.

4. Also Figure 2 does not clearly portrait the data; box plots would be recommendable for these data.

5. Discussion: The authors conclude that PBW is not routinely considered for intra–operative ventilation. This conclusion will undoubtedly be correct, but it is not easily extracted from the results.

6. Discussion: The authors state that the correlation between clinical worse outcome in the high VT subgroup are difficult to explain. They suggest it might be correlated with obesity and intra-operative fluid management. Maybe the authors could look at the incidence of acute lung injury in these patients; this can be triggered by harmful ventilation with high VT, causing ventilator associated lung injury.

Minor Advised Revisions:

1. Background: the authors quote many references (11) in the first 8 lines. It would be better to choose some major references and leave the less matching articles out.

2. Background: the authors mention that hypercapnia is a potential adverse effect of LPV. However, is this really the case (see ARMA-trial and Hickling et al, 1994)?
3. Methods: Why was there chosen for ventilation > 4 hours?

4. Methods: The reason for the cut-off point of 8 ml/kg in the lower tidal group can be argumented better. There are articles available to support this choice (e.g. ARMA-trial).

5. Methods: Please describe the applied ventilatory modes. Are these all volume controlled?

6. Results/discussion: In the results the authors describe a significant increase of transfusion of blood products in the large VT group. However they do not discuss this result in the discussion. What could be the reason for this finding?

7. Discussion: the authors mention the ventilation with large VT was larger than expected. What did the authors expect? This would be interesting to add to the introduction.

8. Discussion: the authors mention the wide range of VT used (in mL and mL/kg). It would be nice to add these numbers to the results.

9. Discussion: Also they mention “Despite a better correlation of VT with the PBW in the large VT subgroup, the VT values were still excessive”. This conclusion gives the impression that in the large VT group VT of 10 ml/kg were given after calculation of the PBW. I would advise to alter the sentence of leave it out.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.