Reviewer's report

Title: Respiratory mechanics in infants with severe bronchiolitis on controlled mechanical ventilation

Version: 1 Date: 19 Apr 2017

Reviewer: Florent Baudin

Reviewer's report:

Dear Editor,

Thank you for the opportunity to review the new version of the manuscript. First of all, I would like to congratulate the authors for the improvement of their manuscript.

However, as in my previous comment, I am not quiet sure that the use of the "airway pressure" as a surrogate of the "work of breathing" is validated and I am not aware of any study that allows to express each component of WOB as a percentage of airway pressure? I suggest the authors to provide references to use such equivalence. If not, I suggest the authors to remove the term WOB and expressed each component as a percentage of the working pressure.

The analysis of the compliance and resistances was more relevant. I also suggest the authors to compare their values with others studies or with the very few "normal values" available in infants (Papastamelos et al. J App Physiol.1995 / Am Rev Respir Dis Vol 147. pp 474-496, 1993/ Gerhardt J pediatr 1989;114:120-5 / Tepper et al. Am Rev respir dis 1984; 130:461-466 / …). In comparison with reference values, the airway resistances were low in this study (even in comparison with healthy children??) and the compliance was decreased. It reinforces the findings of the authors and their conclusion.

There are probably several presentations of bronchiolitis and the population studied by the authors was only one of them. I appreciate the section added by the authors in the discussion.

Specific:

**Abstract page 3 - line 59 and page 12 line 22. "RawI was higher than RawE in 37.5 % of cases and I/E ratio was 1:1.04 (1:0.59-1.42 ) » What does mean I/E ratio (IT/ET ratio?) In their response, the authors wrote that the ET was 1.44 with RR = 28 => IT/ET ratio = 1/2 ? Please clarify this point.**
**Results: Page 12 - Line 7 and response. In volume control mode the flow is constant and a controlled variable. Therefore, the flow was either set by the physicians either calculated by the ventilator (after the settings of the slope, inspiratory pause, IT,…). Does the authors set the flow rate? If yes how (1L/Kg/min)?

**Table 2:
- Please add the median and IQR in the table
- Please change commas by dots in column 2

** Figure 1 B:
The quality was higher than previously but it remains difficult to read the words (auto PEEP, inspiratory pause, …). Please increase the size of police.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Unable to assess

**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:

Acceptable

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