Reviewer's report

Title: Neurally adjusted positive end-expiratory pressure (PEEP) in rabbits with early experimental lung injury

Version: 2 Date: 14 June 2015

Reviewer: Annop Piriapatsom

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In critically ill patients with respiratory distress, there have been debated whether how to set an appropriate PEEP level. The authors of the present study demonstrated one of the feasible interventions to set the PEEP level with the measurement of electrical activity of diaphragm (EAdi) combined with the use of the Neurally Adjusted Ventilatory Assist (NAVA) ventilation. Though, there are some issues in this study that should be addressed and discussed.

Compulsory revisions

1. Why did the PEEP set in tNAVA be zero? As authors mentioned in the Introduction (Page 4, Line 17-18) that removal of PEEP causes an increased tonic EAdi with a concomitant loss of the cyclic phasic EAdi. This could probably lead to atelectasis and subsequently increased load during inspiratory effort.

2. How was the gain factor or cNAVA level obtained, by titration or use the same one as for the tNAVA? The authors stated that the cNAVA level was used to set the magnitude of expiratory assist, which mean to set the level of PEEP. So, this should be the same value as the predicted or mathematically calculated PEEP for the cNAVA, wasn’t it?

3. In the Discussion, Page 18, Line 12-13; could the authors explain more how did improved PaO2 reduce the inspiratory EAdi?

Minor Essential Revisions

1. In the Abstract, Page 2, Line 9; the sentence should be “...would NOT ONLY offer inspiratory assist for tidal breathing but also may aid ...”.

2. In the Methods, Page 7, Line 9; the word should be “Servo-i”.

3. In the Results, Table 1; the word “blood pressure” should be removed form the table description.

4. In the Discussion, Page 20, Line 18; the word should be (~90% variability).

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

I declare that I have no competing interests.