Reviewer’s report

Title: Noninvasive mechanical ventilation with average volume assured pressure support (AVAPS) in patients with chronic obstructive pulmonary disease and hypercapnic encephalopathy

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Reviewer: Sairam Parthasarathy

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Claudett and colleagues report an interesting study on the use of AVAPS in patients with acute hypercapnic respiratory failure and encephalopathy. They found that in a small group of patients, AVAPS facilitated quicker recovery of mentation when compared to bilevel PAP therapy, although there was no difference in NIV days or days in the hospital. This is an interesting study with good study design and important findings. I only have minor comments.

1. Please clarify how tidal volume was set. The formula appears to be that for ideal body weight calculation based upon height. Please clarify as such. Also, provide rationale for the choice of range in tidal volume target. For example, if the range for tidal volume is 9 to 12 ml/kg IBW, then why was 9 instead of 12 ml/kg IBW chosen in a given patient?

2. Please consider combining all 4 figures into one figure.

3. There is no additional information in supplementary file #4.

4. Table 3: Was leak adjusted for mean pressure levels? Consider dividing mean pressure administered by mean leak levels to determine if there is true difference in leak (Sleep 2011; 34(6):801-6).

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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.