Reviewer's report

Title: Increased respiratory rate and decreased thoracic movement are simple methods to assess respiratory insufficiency in amyotrophic lateral sclerosis

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Reviewer: Paul H Gordon

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The investigators examined clinical measures and pulmonary function tests in 42 patients with ALS, retrospectively dividing them into 2 groups based on the timing of non-invasive ventilation – within 6 months of diagnosis or after 6 months from diagnosis. They found that high respiratory rate and low thoracic movement at the time of diagnosis significantly predicted timing of NIV. The paper is overall interesting and clearly written, though there are some areas of poor English usage. Some suggestions follow:

Major Compulsory Revisions:
Suggest obtaining assistance with English language usage.

Results: last paragraph – no mention is made of thoracic movement.

Methods: please state clearly when the group assignment was made in relation to pulmonary measurement. Were the groups already defined at the time of measurement for some patients? Or were all patients measured, and the groups truly assigned retrospectively? If the former, how was blinding maintained? If examiners were not blind to hypotheses or group assigned, this fact should be mentioned in the limitations section in the Discussion.

In Discussion and Conclusions, suggest add a statement saying that while these findings are novel, they were obtained in a retrospective analysis of non-randomized patients, and as such, must be considered preliminary (exploratory), and that future prospective studies are needed to confirm the findings before recommendations can be made for clinical practice. Perhaps adding a level of evidence would provide context for the reader.

Minor Essential Revisions:
Methods: The detail given for ventilatory support and O2 use does not seem necessary and could be condensed.

Background: hospitalization is not required for diagnosis of hypoventilation in all countries. In the US, for example, monitoring can be done at home. Suggest making this comment more general, or being clear that is applies to patients living in Finland.

Discretionary Revisions:
Methods: The word ‘data’ is plural.
Level of interest: An article whose findings are important to those with closely related research interests

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