Reviewer’s report

Title: The impact of high-flow nasal cannula oxygen therapy on exercise capacity in fibrotic interstitial lung disease: a proof-of-concept randomized controlled crossover trial

Version: 0 Date: 17 Oct 2019

Reviewer: Kazuma Nagata

Reviewer's report:

Thank you to give the opportunity to review this article. The authors reported a small randomized crossover trial in FILD patients with exercise-induced hypoxemia, including 20 patients, using VM or HFNC for oxygen delivery. Primary outcome was endurance time and secondary outcome included SpO2, heart rate, Borg scale and patient's comfort. The results showed that HFNC did not exceed VM, although the majority of patients responded to both oxygen delivery compared to the baseline test.

This is quite an interesting study, but I have some major concerns as can be summarized as follows:

- small sample size and the real inclusion size is far away from the estimated sample size which was 20 in each arm

- heterogeneity of FILD; IPF, NSIP, CTD-ILD, and unclassifiable IIP

Other comments;

- There is no comment about the duration between the baseline CWRET and the high-intensity CWRET or randomization. The duration should be addressed.

- The authors state: "Carryover effects were considered negligible, because the washout period was sufficient." I suppose that 1-day is not sufficient to neglect carryover effect. Please clarify this point.

- The authors state: "Although we compared the baseline characteristics between HFNC good responder and non-responder, no significant differences were found." It is so important to identify the differences between good responder and non-responder. Was there any differences of the response to oxygen therapy between those groups? If no, can you discuss the possible factors which make the differences?

- The authors concluded that HFNC was not superior to VM for FILD, but they do not explain the possible reason of this result. HFNC has some additional effects such as positive airway pressure or wash-out effects compared to VM, which is thought to be beneficial for exercise, but the result of this study did not reflect these effects. These effects do not have the positive effects for FILD patients? Or this is just due to the limitation of this study design including sample size? Please address this point.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

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?
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I recommend additional statistical review

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