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

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Reviewer: Nicole Goh

Reviewer's report:

Suzuki et. al. compared the impact of high flow nasal canula (HFNC) versus conventional oxygen on exercise capacity during CWRET in a group of patients with fibrotic interstitial lung diseases. The results are interesting and I have the following comments:

Major comments:

1) The authors state that the evidence for the use of supplemental oxygen in ILD is scarce. The authors are correct in their statement in that there is no direct evidence for the use of LTOT in ILD - evidence is gathered from COAD - and there is very little evidence for the use of ambulatory oxygen in ILD. However, there are now a number of studies supporting the use of supplemental oxygen in short bursts for field test and the authors should be stating these, as they are relevant in this context.

2) Supplemental oxygen delivered in short bursts are generally delivered by nasal prongs and not generally via Venturi mask - could they authors please comment on this?

3) Was pulmonary hypertension (PHT) accounted for?

4) Could the non - responders be patients with PHT?

5) The exclusion criteria should be made clear in the text.

6) You are assuming that the difference between the 2 delivery systems is PEEP - how could you discount that there is no PEEP with your Venturi system?

7) How did you choose the flow rates? The maximum flow rate for HFNC is 60L/min

8) You postulated that the PEEP with HFNC might decrease physiologic dead space and flush out CO2 - did you measure end tidal C02 (capnography)? The authors have made assumptions about a few things but have not gone to any lengths to prove or disprove a theory.
9) The discussion is merely a summary of the literature and the findings again. A more in-depth discussion about why you think differences were not seen should be attempted. Could this be related to device or different disease (COAD vs ILD)?

10) You mentioned that one test for done on the first day and the second one on the second day - were these consecutive days? This should be made clearer.

11) You stated that HFNC did not exceed the efficacy of VM in endurance time (HFNC: 6.8 ± 4.7min vs VM: 7.6 ± 6.3min). What was the p value?

12) I acknowledge that your numbers are small, but did you analyse the results of just the responders only?

13) I don't think the findings that both HFNC and VM are better than baseline are surprising given what we know already about the benefits of short bursts oxygen in field tests.

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.

No

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

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