Reviewer’s report

Title: Maximal Exercise in Obese Patients with COPD. The role of the Fat Free Mass

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Reviewer: Jordan Guenette

Reviewer’s report:

Aiello et al. examined the effects of obesity, FFM and hyperinflation on exercise performance in obese and normal weight patients with COPD. This is an important and interesting research topic that has gained considerable attention in recent years. This exploratory study found less hyperinflation, greater FFM and better exercise performance in obese COPD patients relative to a group of well-matched normal weight COPD controls.

I enjoyed reading this manuscript but I found it difficult to determine what this study adds to our current understanding of exercise in obese COPD patients. The main findings described above have been shown by others. The authors should elaborate on the novelty of their work in relation to other studies that have examined exercise responses in obese COPD patients.

Major Comments:

The current study design makes it difficult to tease out the independent contribution of FFM vs. hyperinflation as it relates to exercise performance. Groups were stratified based on BMI and IC/TLC. Have the authors considered stratifying groups according to FFM?

I understand the rationale for trying to keep the exercise tests between 8-12 minutes but this can make it difficult to compare groups if the work rate increments are different between groups.

Why were physiological and sensory comparisons only made at rest and peak exercise? Comparisons at submaximal work rates (or VO2 values) are often much more informative. This is especially true for dyspnea.

Why did the authors choose IC/TLC rather than FRC or RV as their measure of resting hyperinflation?

FFM seemed to be an important component of this study but the authors chose a fairly crude measurement technique (bioelectrical impedance). This measure can be quite sensitive to changes in hydration status. How was this controlled? The authors should consider briefly discussing the limitations of bioelectrical impedance in their discussion.

It’s too bad the authors do not have data on body fat distribution as this may shed some light on some of the differences observed in studies comparing
normal weight vs. obese COPD patients.

Minor Comments:

Please confirm when the tests were conducted relative to their pulmonary rehabilitation. Were all tests performed prior to rehab?

I noticed a number of grammatical errors throughout the manuscript. The authors should consider a careful review of the manuscript from a native English speaking colleague.

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 have no competing interests to disclose