General Comments

This well written study evaluated the usage of 4 different exercises that induce breathlessness in a range of individuals with advanced cancer. The paper was well constructed and easy to read and the authors are to be congratulated on a well-prepared manuscript.

The results of the study are not surprising, however as the authors point out, important to be defined in order to evaluate the degree of exertion required to induce breathlessness in this population. Whilst it was not the primary purpose of the study, as a reader I was keen to see the data on the intensity and unpleasantness induced by each of the tests. Was there a difference between the individual tests? If the authors are not reporting these results, perhaps the aim of the study could be changed from 'assess the use of four evidence based exercises that induce breathlessness' to 'define/establish the functional cutoff points for these assessments' (as mentioned in the next sentence).

What was the order of the tests, were they randomised or ordered from the most (6MWT) to the least (reading numbers) demanding? If so, can the authors account for the effect of order?

Is breathlessness always the limiting factor for those that complete the tests or are there other factors that may contribute the cessation of the test. The reading tests appears to be limited by breathlessness, however the 6MWT/2MWT and the isometric arm exercise may be limited by limb fatigue. Of those that completed the tests, were some of them not limited by breathlessness? It might be that some participants that have good functionality are not limited by breathlessness during walking, but report higher intensity of breathlessness during the arm exercise or reading numbers exercise.

The authors allude to using the tests longitudinally to evaluate breathlessness over time. The performance of a test (eg distance covered or number of arm contractions) may decline over time and, as such, the ventilatory requirement to perform the test also decreases. The lower ventilatory requirement may result in a lower intensity of breathlessness. For example if initially a 2 minute walk test of 110 m elicits a 7/10 intensity of breathlessness. If over time the participant were still able to perform the test, however the distance walked decreased to 80m and intensity of breathlessness also decreased to say 5/10, would you conclude the individual is less
breathless on exertion compared to the previous test? Similarly if over time the rate of arm contractions decreased over time or the rate at which words were read over time were less, and the person was less breathless would the individual be considered less breathless no exertion? The only real way to check is to get the person to perform the same 'absolute' challenge over time which should elicit the same ventilatory challenge. Whilst this is not always possible, would the authors consider this a limitation in the assessment of exertional breathlessness. Perhaps this is outside the scope of the manuscript, however is it worth considering? Could this be a potential limitation in evaluating exertional breathlessness?

Specific Comments

The authors included the Eastern Cooperative Oncology Group Performance Status Scale (ECOG) as well as the AKPS, are the results the same for the ECOG? There does not appear to be any mention of the ECOG in the results.

For completeness, would the authors consider including another Figure for the six minute walk test (similar to that for the 2MWT, arm exercise and reading aloud)

Would it be worthwhile considering putting Figures 1-3 (and one for the 6MWT as per the comment above) into a single Figure with four panels, that way the reader can easily compare across tests?

Reference 1, depending on when the authors completed the study, however the most recent field test guidelines for the six minute walk test published by the American Thoracic Society are Holland et al., Eur Resp J. 2014 44(6). 1428-46.

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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