Reviewer's report

Title: Cardiorespiratory responses to 6-minute walk test in interstitial lung disease: not always a submaximal test

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Reviewer: Sally S Singh

Reviewer's report:

This is a well written paper looking at the response to both the 6MWT and a cycle based cardio-pulmonary exercise test in patients with interstitial lung disease.

The paper has been submitted from a well-respected group in the field and complements the existing literature. The authors identify that there is some debate defining the precise challenge that the 6MWT presents, i.e. either sub maximal or maximal.

Major comments

There is increasing interest in IPF as an important sub group of ILD. I would like to see the data presented separately for the IPF and other ILD groups. The group have described an important rehabilitation paper for ILD and took this approach of identifying the response in sub groups. The responses were different and you might speculate that this is in fact the case at baseline too.

A difference is alluded to on p8 para 2 and in table 2. However table 1 and 2 should be set out as the 2 sub-groups and a comparison described – acknowledging that this comparison is now underpowered. It would be helpful on figure 2 and 3 to identify with different legends the IPF and non IPF patients.

The authors need to report on why these patients stopped exercising, there is some literature suggesting that the reason for termination may be different with different modes of exercise testing and this warrants description and discussion.

The conduct of the 6MWT needs further description, was this encouraged test, with a view to achieve a maximal performance? Were patients allowed to stop and rest – if so can this be reported?

The power calculation looks a little contrived, can the authors describe their hypothesis and provide more data to allow the reader to understand the sample size calculation. It is unclear which test was associated with ‘superiority’. What is the clinical importance of this difference? (if any?) It would be helpful to overlay the response of the CPET on figure 1..

I am curious about the description of a sub maximal exercise test, the trajectory of the metabolic response is an important factor in describing the nature of the test, it was not a conventional sub-maximal test that has a constant work rate protocol. Were all 47 tests similar in profile or did the 6MWT result in different
profiles.
Minor – none