Reviewer’s report

Title: A moderate 500-m treadmill walk for estimating peak oxygen uptake in men with NYHA class I-II heart failure and mid-range ventricular dysfunction

Version: 1  Date: 18 Nov 2017

Reviewer: Raquel Britto

Reviewer's report:

Manuscript Number: BCAR-D-17-00601R1
Title: A moderate 500-m treadmill walk for estimating peak oxygen uptake in men with NYHA class I-II heart failure and mid-range ventricular dysfunction

Review

The manuscript addresses the validation of a 500-m moderate treadmill-walking test for estimating peak oxygen consumption (VO2peak) in community-dwelling old men with chronic heart failure (HF) and reduced left ventricular ejection fraction (LVEF). Basically, considering the limitation of these patients to do the 1-km treadmill walk test (#ref 12, published previously by the same research group), they proposed to use, for this population, half of the distance and evaluate responses and agreement with the VO2peak direct measured.

It is really an important manuscript, presenting a simple and practical tool that could be used in cardiac rehabilitation services to monitoring evaluation of patients with HF and LVEF as well as to prescribe exercise intensity, particularly in low-resource settings. Recently, a statement on cardiac rehabilitation emphasised the need of using simpler exercise tests to improve the admission on cardiac rehabilitation (Grace et al., 2016).

Comments

Introduction
Please, include how this kind of tool is important for low-resource settings. Suggestion of reference - Grace SL et al., 2016 (see above).

Methods
Any kind of exclusion criteria? For example: patients with peripheral arterial disease.
1st page of Methods: Lines 53 to 58: please, provide reference for "..... and by the attainment of at least two of the three following criteria: heart rate value ≥ 85% of the age-predicted maximum, VO2 plateau approaching maximal exertion, and a respiratory exchange ratio ≥ 1.05."
2nd page of Methods: Lines 23 to 25: Who adjusted the walking speed? (patient or researcher?). Was the researcher blinded about the VO2peak direct measured?
Lines 32-34 : equation - mean walking speed in m/min? Please inform.
3rd page of Methods: Lines 24-26: Please include figure of Bland Altmann analysis. It could be also as Fig. 1B.
As HR on ventilatory threshold (VT) on CPX has been used to prescribe exercise intensity, I would suggest including the correlation of HR on 500m test and HR on VT. I think it is important for practical implementation on cardiac rehabilitation as very well discussed on 2nd page lines 30-33.

Discussion
1st page of discussion - Lines 56-58 - after "using sub-maximal walking protocols" INCLUDE ", the majority in healthy subjects" - To emphasizes that one of this is on HF but not with reduced FEV.
Discussion 2nd page line 18/19 - there is an extra "s" after "tools"
Include on discussion the application for low-resource settings.

Reference
Please check ref #12 and #17 is the same. Also correct the citation in the main text.
Other

Please check the use of abbreviation (LVEF) and the term left ventricular dysfunction as well as the abbreviation HFrEF and respective term in regard to the first or subsequent appearance. For example - introduction line 50, first appearance (need to use complete term even though it was cited on abstract). Discussion 2nd page line 2, etc.

I would suggest instead of using HFrEF substitute to "HF with reduced LVEF".

Congratulations on such a practical and important manuscript with easy clinical application.

Raquel Rodrigues Britto
PhD, PT, Federal University of Minas Gerais, Brazil

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?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.
Not relevant to this manuscript

Quality of written English
Please indicate the quality of language in the manuscript:
Acceptable
Declaration of competing interests

Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?
2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?
3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?
4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?
5. Do you have any other financial competing interests?
6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal