Reviewer’s report

Title: High-intensity interval training and moderate-intensity continuous training in adults with Crohn’s disease: a pilot randomised controlled trial

Version: 0 Date: 05 Nov 2018

Reviewer: Whitney Duff

Reviewer's report:

Overall Comments:

Exercise trials are desperately needed in individuals with IBD. It is interesting that the authors chose HIIT, considering the general recommendation for those with IBD to avoid high-intensity exercise (due to potential for adverse gastrointestinal effects). However, without trials we have no evidence for or against these potential effects.

It would be more acceptable to publish blood markers of inflammation in a separate manuscript if there were many significant differences found within that data. However, since no hypothesis testing was completed, and data is only represented as means (SD), this is obviously not the case. This data should be included in the current manuscript.

Specific Comments:

Line 62: This reference is about exercise for rheumatoid arthritis. Yes, an inflammatory disease - however, is otherwise not applicable as it is not an inflammatory disease that effects the gastrointestinal system. What are the most current guidelines/recommendations for IBD?

Line 78: Why did you choose to exclude individuals with ulcerative colitis?

Line 91: Please state with certification/designation of the individual's in charge of supervising/training
Line 128: I see that RPE and %HRmax are reported and appear to be in line with 'moderate-intensity', but I am having a hard time believing that 35% Wpeak (50-54W) elicited a 'moderate-intensity' effort.

Line 157: This seems like a contrived way of defining success. If I'm understanding this correctly, success was 67% of the participants completed 67% of the sessions. What was this decision based on? Wouldn't 80% be typically more acceptable?

Line 170: Although somewhat redundant with questionnaire name, list the outcomes measured via these questionnaires (i.e. QOL, fatigue, depression, anxiety), like how you did for disease status (via CDAI) above in Line 166.

Line 182: Were participants blinded to the hypothesis (i.e. that the HIIT would be superior to MICT exercise on outcomes)? If so, please state here. If not, please consider doing so for future trial.

Line 224: Was the participant that started aerobic/strength training 3-4d/wk excluded from outcome assessment?

Line 234: Why were those with RA excluded, but not this participant with ankylosing spondylitis?

Line 259: Please clarify what percentage of the 'illness' category was disease related illness.

Line 332: Valuable feedback! Emphasize this when seeking funding for future studies.

Line 356-363: I am slightly confused by the planned future trial intervention. It appears you wanted to do a combo intervention of HIIT/MCIT for a well-rounded aerobic intervention and then a control exercise group (i.e. flexibility). But then it's mentioned the intervention would include a combination of aerobic, resistance, balance and flexibility exercises in a 2-arm trial
(also discussed in Additional File 3). So, what is the other arm in the 2-arm trial if flexibility is included in the intervention? Regardless, I would suggest doing a 3-arm trial: Arm 1 = Aerobic combo of HIIT and MCIT (e.g. 2 days of HIIT and 1 of MCIT); Arm 2 = Strength combo of HIIT and lower intensity circuit (e.g. 2 days of HIIT strength and 1 lower intensity circuit); Arm 3 = Flexibility and balance (e.g. combo of both 3 days per week, as control/sham exercise group). Then expand inclusion criteria to include patients with CD and ulcerative colitis to assist with fulfilling the greater recruitment needs.

Line 381-382: Here is sounds as though the flexibility exercise is placebo, but previous statement it does not. Please clarify.

Line 383: Consider including individuals with UC, which would increase recruitment potential.

**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/](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