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: 1 Date: 31 Dec 2018

Reviewer: Jessica Elia

Reviewer's report:

1. Several of the reviewers as well as the editor asked for an in-depth review of MICT and HIIT in the IBD population. There is sound reasoning for this that must be considered in order for this manuscript to move forward to publication.

This feasibility study steps into a challenging area. Feasibility studies do not generally address issues of safety. However, HIIT in the IBD population raises concerns, as extreme caution with high intensity cardiovascular training is well documented in the IBD literature. This is compounded by the number of subjects who experienced adverse "symptoms" (we will call them) during the feasibility study. This is why the following are crucial:

a. The introduction, including a through explanation of MICT v. HIIT in the IBD population is so important. (see specific notes below)

b. Describe type of HIIT chosen and why it was chosen

2. The methodology also raised many questions. How was it determined based upon your HITT, MICT, and IBD research and how did you decide to amend it so drastically?

i. How was everyone who administered the trial across 3 facilities trained?

ii. Did the subjects perform cardiovascular testing prior to the first training session to determine baseline or was that the first session? Is that when anthropomorphic and other data was collected? This is how you figured out your feasibility…so what did you do and what did you decide worked? Write so it could be replicated.

iii. Perhaps test patients at several points throughout the trial to catch a CDAI moving toward >400?

iv. Specific instructions regarding eating and hydration behaviors?

v. Consider only adult subjects? Over 18?
vi. Page 23, Line 386: Is not comparing the MICT and HIIT exercise programmes the goal of this protocol? Essentially you are abandoning your protocol and creating a completely new study with new interventions. How does this make your feasibility study a success? Would this not require a new feasibility study? I would suggest staying with the original protocol as MICT and HIIT studies are needed and you do not yet have any data to compare the two or determine safety, outcomes, etc.

3. Please name all tables/figures in manuscript as they will appear in the published article ex. (Figure 1) NOT (AdditionalFile2). Please indicate which tables/figures are supplementary ex. (SupplementaryFigure1).

Abstract:

1. Page 10, Line 41: The "overall attendance rate..." The trial looked at two different groups. HIIT and MICT, 62 and 78% participation respectively. Those numbers should be reported separately. Not taken as an average.

Introduction

2. An adequate rationale for this study has not been presented. IBD subjects suffer from a myriad of extra-intestinal symptoms and complications. These disease-specific items must be addressed within the context of cardiovascular training to reassure readers (1) subject safety was well understood, considered, and addressed, (2) methodology was given proper consideration, (3) suitable outcomes and appropriate objective measures were chosen, and (4) [in a feasibility study] is this protocol feasible.

3. Page 11, Line 66: The references listed are not from IBD or IBD-similar subjects. Please address:

a. Why MICT has been the aerobic exercise of choice for IBD subjects both for physiologic and functional outcomes.

b. Why you believe HIIT is a good cardiovascular exercise choice for IBD subjects and discuss the disease specific physiologic benefits and risks.
c. What the functional subject outcomes/benefits are for utilizing HIIT in terms of exercise specificity. How will this improve the subject's quality of life?

d. Physiologic similarities/differences between adult and pediatric IBD

4. Page 11, Line 73: How did you draw the conclusion that HIIT would be safe for adult IBD subjects?

a. How did you determine the proper HIIT protocol for adult subjects with quiescent or mild-active CD?

b. Even if you have published this elsewhere, a brief description is warranted.

Interventions

5. Page 14, Line 136: Feeling Scale Data should be published with exercise data

a. Given the questions surrounding the best way to measure exertion in IBD subjects due to autonomic dysfunction, HR, Feeling Scale, and Borg CR-10 data should be published together.

6. Page 14, Line 146: Please name the standardized questionnaire used.

7. Page 15, Line 173: Please change "generic health status" to "quality of life"

8. Page 16, Line 193: Please include CONSORT diagram figure number.

Results

9. Page 17, Line 212: Please include figure number

10. Page 19 Line 261-263: Again, report HIIT and MICT figures separately. Two separate groups were studies, two separate groups should be reported.
11. Page 19 Line 267: What does the literature say about 2 v. 3x per week aerobic exercise for MICT and HIIT why did you choose 3x per week? This should be addressed in the Introduction.


13. Line 300-308: Please distinguish interviewee groups HIIT v. MICT.

14. Page 22, Line 359: IBD population & moderate intensity exercise choice is very clear in the literature and should be addressed in the introduction and discussion.
   a. Again, what are the physiologic & functional goals.
   b. How does the specificity of MICT and HIIT address each differently?

15. Page 22, Line 361: A feasibility trial does not present clinical findings, it cannot say if an intervention works, just if a project can be done. You did no analysis to justify that HIIT concerns are not supported.

16. Line 384 I would not remove the HIIT v. MICT component, this has yet to be settled and is worthy of further study.

17. For data being published elsewhere, it is appropriate to provide a brief paragraph explaining relevant results and how they informed your conclusions.

Recommendations for future trials:

1. Objectively quantify pre-trial exercise habits: average METS, etc.


4. Clearly define exercise goal: intervention group to participate x/wk, total x/session/xweeks

5. Basic patient safety exercise instruction:
   a. stop if you develop a headache, feel faint, dizzy, etc.
   b. brief patient interview prior to each exercise session: change in status->back to MD for clearance (stomach feels funny)

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

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.

No

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.

I recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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