Reviewer's report

Title: Effect of exercise therapy on lipid profile and oxidative stress indicators in patients with type 2 diabetes

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Reviewer: Jørn Helge

Reviewer's report:

General Comments for authors

I have reviewed the paper “Effect of exercise therapy on lipid profile and oxidative stress indicators in patients with type 2 diabetes” by " Lorenzo Gordon, Errol Y Morrison, Donovan a McGrowder, Ronald Young, Yeiny P Fraser, Eslaen M Zamoraz, Ruby L Alexander-Lindo and Rachael Irving BMC” submitted to Complementary and Alternative Medicine

The authors have performed a large training study in 231 type 2 diabetic patients randomized into three groups, conventional exercise therapy, yoga exercise and control. Authors investigated the effect of 24 weeks of training two hours a day on blood lipid profile and oxidative stress, and found similar positive changes on blood lipid profile and oxidative stress markers after conventional exercise and yoga exercise and no major changes in control. Authors conclude yoga used as exercise may just as well be used as conventional exercise therapy to gain positive effects on blood lipid profile and reduce oxidative stress in type II diabetic patients.

Overall the paper is well written and the major question, in my opinion, if a long time intensive training program of yoga gives the same effects as conventional exercise therapy is interesting and presents some novelty. However, in my opinion the paper is unduly long and not focused on the interesting and novel aspect. I have outlined my major concerns.

Major compulsory revisions

1. How was the type II diabetic patients medicated? Was this changed through the period and was this similar between groups?

2. What was the compliance on the training? Did all subjects go through this rather arduous training program, 2 hours a day for 24 weeks? If there were any dropouts this should be reported!

3. What types of exercise and at what intensity were they performed in both the conventional and the Yoga exercise groups? This is key information looking on an exercise response! How was the training controlled, supervised, home based, etc.?
4. Are there any measurements of conventional training parameters such as VO2max, HRrest, lactate during standard exercise, etc? This would be rather crucial information in order to evaluate the effect of the training on the investigated primary parameters.

5. Why is there a rebound effect of the exercise groups on the TC/HDL ratio? How can this be explained.

6. The beneficial effects of conventional exercise in type II diabetic patients on blood lipid profile and also to some degree oxidative stress have already been studied and the new aspect in this study really is Yoga exercise and oxidative stress parameters. Thus, this reviewer thinks authors should make this their main focus and only briefly mention the well known effects of conventional exercise therapy, particularly in relation to blood lipid profile. Thus, for example expanding on the ideas and thinking in the first four lines of page 16. Thus, refocusing introduction and discussion with this in mind.

Minor essential revisions

1. Page 11. Line 8-9. VLDL concentration was not significantly changed according to table 3, but yet the text indicates here... “VLD changed…”. Please rephrase or change table.

2. Page 14, second Para, 1st sentence. There should be a reference to support this.

3. Page 14 second Para, 2nd sentence. Sentence needs rephrasing.....peroxidation increased.....does not match the later part of the sentence.


5. Page 17. Last three lines. A rather unconventional use of the word antioxidants, please rephrase.

6. Page 18. Last sentence of conclusion. What is meant here? I do not understand this sentence and fail to see how this is seen in relation to the study. Please rephrase. If indeed there is a stringent theory behind this, please elaborate and include, as this would be very interesting.

7. Table 3. I don’t understand the significance explanation for the change in the third column on the TC/HDL ratio? Please reconsider and explain in more detail.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

'I declare that I have no competing interests