Reviewer’s report

Title: A 7-day high-PUFA diet reduces angiopoietin-like protein 3 and 8 responses and postprandial triglyceride levels in healthy females but not males: a randomized control trial.

Version: 0 Date: 25 Jun 2018

Reviewer: Ling Zhao

Reviewer's report:

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The manuscript by Kavian S. et al entitled "A 7-day high-PUFA diet reduces angiopoietin-like protein 3 and 8 responses and postprandial triglyceride levels in healthy females but not males: a randomized control trial" studied the effects of 7-day PUFA rich diet on plasma TG levels and Angiopoietin-like proteins, ANGPTL3, 4, and 8 in the plasma and found that 7-day PUFA diet decreased TG levels in both male and female subjects, but only decreased plasma levels of ANGPTL3 and 8 in the female subjects. This is an interesting paper, has provided good amount of details for the experiment designs and procedures, However, a few concerns/issues were noted and need to be addressed.

(1) On page 6, were two SFA-rich meals provided to all subjects as well in the post-diet visit? The languages at the end of the Pre=and post-diet visit on Page 6 need more clarity. Therefore, the figure legends of "…response to SFA-rich meals" would not have confused this reviewer. The reviewer thinks that to avoid confusions, please revise to make it clearer. Also, please make the figure legends clearer. For example, revise the Figure 1 legend to "Plasma TG response to SFA-rich meals before and after the PUFA diet".

(2) Please confirm how data were presented. On page 8, under Statistical analyses, it was written as mean ± SE, but in the Results, it were written (SD 18.7) (SD 6.5)… on Page 9.

(3) The statistical analysis results (i.e., asterisks □) should be marked on the Figure 1, in addition to the description in the Results section, similar to the way it was presented in Figure 2. Otherwise, it will be confusing. The same things can be said for Figure 3, 5, and 7.

(4) It is not clear why the males' data were not considered significant. Since "there was a significant main effects of time and visit (p=0.02)…. The visit effect was for lower TG following the 7 day diets for the combined diet (Figure 1B)". Also, on Table 1, TG were
66.4±24.9 in pre-diet group, 48.3±28.4 in post-diet group of males and they were marked with a statistical significance.

Did males significantly respond to PUFA, but just to a less extend?

(5) Another interesting finding is noted at the TG levels in the pre-diet group between the males and females in Table 1. It looks like that males tend to have lower TG in respond to SFA meals than the females do. After PUFA diet, both genders have similar TG levels. So could the conclusions be that male vs female respond to SFA differently, but they respond to PUFA in a similar way?

(6) It is helpful if the authors provide more explanations/interpretation of why the changes of ANGPTL3, 4, and 8 were different. There was only 1-2 sentence on ANGPTL8, what about ANGPTL3 and 4? Now since the authors mentioned cleaved vs N-terminal forms of ANGPTL4, did you measure cleaved form or the N-terminal, or you could not differentiate with your assay? Please be clear. Although it may not be statistical significant, ANGPTL4 levels seemed increased, rather than decreased (seen for ANGPTL3 and 8) by PUFA diet. Further discussion on this may be helpful.

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.

I recommend additional statistical review

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None

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