Reviewer's report

Title: Increased dietary alpha-linolenic acid has sex-specific effects upon eicosapentaenoic acid status in humans: re-examination of data from a randomised, placebo-controlled, parallel study

Version: 1
Date: 7 September 2014

Reviewer: Ian Givens

Reviewer's report:

Overall a very useful paper which attempts to better understand gender effects of LC n-3 synthesis from ALA. The work is based on a re-analysis of data from an earlier study but certainly deserves to be published. The paper is short and would benefit from some editing before publication. Suggestions for this are listed below:

Minor Essential Revisions
Title (and elsewhere)
1. Is this strictly a placebo-controlled study? The control was the low dose of ALA which is not a treatment-inactive substance.

Abstract
2. Lines 12, 13 include the length of the intervention period.

Findings

Background
3. Line 6, it would be helpful to indicate overall how much greater was the capacity in females than in males in stable isotope studies.
4. Line 8, confirm if females also had higher circulating levels of EPA. This is relevant to the outcome of the present study.

Methods
5. Line 10 (p4), whilst it is appreciated that this will be in the original paper on the study, it would be helpful to the reader if the numbers and ages of males and females in each of the two groups was given.
6. Line 14, whilst it is true that the main effect being studied was the diet x sex interaction, was the effect of diet not also included in the ANOVA? It would still be useful information.
7. Line 16/17, it is implied but confirm that the independent variable was change in plasma PC EPA concentration from baseline to finish.

Results
8. P5, line 6, the term 'dietary intervention group' has previously been called 'diet'. Best to be consistent.

Discussion and conclusions
9. P6, lines 3-4, it is mentioned that data on menopausal status were not available but since the mean age of the females was 53.5 +/-12.0 years is it not likely that a reasonable number would be within or post menopausal? If that is a reasonable assumption some mention of it would helpful in relation to the key finding of a sex effect.

10. The Discussion does not consider the lack of a sex effect on DHA (or DPA) despite the Introduction highlighting increased circulating DHA in females seen in stable isotope studies. Some discussion of the possible reasons for this would be helpful together with the consequences if there are specific needs for DHA e.g. during pregnancy. This is also worth a mention in the concluding paragraph on p 7.

11. Table 2. 'Intervention group' should be 'Diet' for consistency

12. Table 3. The title should confirm that the data relate to baseline (if true). There should also be confirmation re the +/- values after the means, are they SDs?

Discretionary Revisions

1. Results, Line 2, 'higher increase' is probably better as 'greater increase'

2. Table 1. This also shows a diet x sex effect for 16:0 but is not mentioned. Is this worthy of a mention?

Quality of written English: Acceptable

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

Declaration of competing interests:

I am employed by the same university (Reading) as several of the authors are or were.

No

No

No

No