Responding to reviewers

In the manuscript "Association between dairy intake, lipids and vascular structure and function in diabetes", the authors conducted a sub analysis of a previous randomized trial addressing the role of dairy intake on vascular function and blood pressure parameters. They documented a significant relationship between blood pressure and augmentation index and certain lipid parameters. - The study is well conducted with a huge number of parameters analysed and the results are intriguing. Nevertheless, the pathophysiological basis for such findings is missing. In fact, consensus on the cardiovascular effects of dairy fatty acids are still lacking, with studies supporting their benefits and others providing opposite results, therefore suggesting a reduction in dairy fats for CV prevention.

Response

Thank you for reviewing our paper. We agree consensus in this area is lacking. The following has been added to the introduction:

Although uncertainty remains about the vascular effects of dairy fatty acids [10].

In the discussion we have attempted to discuss possible mechanisms behind the findings observed in this study, but have acknowledged that this is an area that should be explored further. The following has been added:

Although it remains unclear what the mechanism behind this finding is and this should be explored in the future.

- More details on diet modification and compliance should be provided: with the generical supplementation of "dairy products" the authors did non mean the introduction in the diet of those low-fat dairy products, that have been associated with an improved endothelial function in several observational studies and meta-analysis. Therefore, it might be expected even an increase in satured fats and cholesterol, with an increase in CV risk.

Response

The following has been added to the methods section:

One serve of dairy was either 250 ml of milk or 200 g of yoghurt and no advice was given regarding the fat content.

There was no change in saturated fat or cholesterol at any of the time points.

- Adherence to diet modification seems low, this may have affected the results

Response

Compliance to the dietary modification was low. We have described this in the methods section and this was the reason we analysed the cohort as a whole and not according to allocation. The study investigated the association between change in dairy intake and serum lipid species and since we had participants who increased consumption (n=57) and participants who decreased consumption (n=51) it was possible to conduct these analyses as reported.

- Study results have already been assessed by previous larger studies. If the novelty of this study is represented by the analysis of a high risk diabetic population, then it would be interesting to perform a separate analysis according to type 1-2 diabetes or treatment (oral/insulin). It is known that certain antidiabetic drugs can affect endothelial function and that insulin can modify lipid profile. - Due to small sample size and large heterogeneity I would suggest to perform subgroup analysis to confirm whether results were consistent across different groups (i.e pt receiving or not antihypertensive drugs, with or without renal failure etc)

Response

The relationship between dairy intake, serum lipid species and vascular health has not been examined before in people with diabetes. However, the sample size is not large enough to perform subgroup analyses by type of diabetes treatment or on antihypertensive treatment. Participants with renal failure were excluded from the study.

- Please consider both absolute values and % variation of significant parameters, for each patient, in order to control for potential confounders

Response

Thank you for this suggestion. We have included the correlation between percent change in dairy associated lipid species and percent change in vascular measures, see Table 5. The results were very similar to when absolute values were used in the analyses.

- I would suggest to include a graph providing details on the flow chart for the study protocol from enrolment, randomization, follow-up

Response

Thank you for this suggestion. A CONSORT diagram has been added.

- Please revise the abstract and reduce the number of abbreviations in order to improve readability

Response

Thank you for this suggestion. The abbreviations used in the abstract are for the lipid species, which are according to the standard nomenclature. Including the lipid species in full every time they are mentioned would lengthen the abstract beyond the accepted word limit.

This manuscript is nicely structured and well written. However, I have several minor comments about this manuscript. If these points are solved, I think this manuscript deserves being considered for publication. Classification of the manuscript: grade B Language evaluation: grade A

Response

Thank you for reviewing our paper.

The grammar must be rechecked.

Response

The grammar has been checked. Thank you for reviewing our paper.