Reviewer’s report

Title: Dietary Fiber Intake and Glycemic Control: Coronary Artery Calcification in Type 1 Diabetes (CACTI) Study

Version: 0 Date: 20 Dec 2018

Reviewer: Lauren Blekkenhorst

Reviewer's report:

20-12-2018
NUTJ-D-18-00335
Dietary Fiber Intake and Glycemic Control: Coronary Artery Calcification in Type 1 Diabetes (CACTI) Study

The authors present a concise and well-written manuscript investigating the cross-sectional and prospective associations between dietary fibre intake and HbA1c in type 1 diabetics. This is an important study as there is little evidence on the association between dietary fibre intake and glycaemic control in type 1 diabetic populations. The authors reported a cross-sectional association between dietary fibre intake and HbA1c, but did not show an association prospectively. Please see comments below.

Abstract/Introduction
Major
* No major issues
Minor
* Line 18: CACTI needs defining
* Line 19: What years were the 6-year follow-up data collected?
* Line 20-21: Did dietary fibre intake change from baseline to 6-year follow-up? Was any change taken into account in prospective analyses?
* Line 21-22: Why was physical activity not included as an adjustment? Was information on physical activity levels available in the CACTI study?
* Line 21: Is the screening visit, the baseline visit? In the abstract, screening visit and baseline are both stated. Usually a screening visit is to screen participants for eligibility to participate in a study.
* Line 49: EURODIAB needs defining
  • Line 52: What are the participant characteristics that may play an important role?

Methods
Major
* No major issues.
Minor
* More information would be useful on the collection of dietary data without going back through references. Is the FFQ validated for fibre intake? How many items does the FFQ have? Is it quantitative/semi-quantitative?
* The numbers in this study do not match the numbers in the referenced study (Snell-Bergeon et al 2009). For example, Snell-Bergeon et al report n=571 for T1D and n=696 for controls, and the current study report n=568 for T1D and n=689 for controls. Why are these numbers different if the inclusion and exclusion criteria are the same as reported in line 61?
* Line 67: Details on the blood pressure monitor should be included.
* Lines 70-72: Details on what methods used to collect lipids etc. need to be included. Were they assessed on fresh samples or frozen samples?
* Line 73: What statistical methodology was used to assess normality? What variables were log-transformed?
* Line 77: What were the dietary macronutrients and cardiovascular risk factors? Need to be specific.
* Line 81: Were dietary carbohydrates, fats and proteins adjusted for as a percentage of energy or grams per day? Which serum lipids?
* Line 83: What was the rationale for examining the associations of total dietary fibre in quintiles? What were the results for total dietary fibre as a continuous variable?

Results
Major
* No major issues

Minor
* Line 98: 'a' should be capitalised in 'Hba1c'
* Line 100: insert 'an' before 'inverse'
* Line 101: was dietary fibre log-transformed for all other analyses?
* Line 103: insert 'the' before 'model'
* Line 112: P value for the interaction test need reporting.

Discussion/Conclusions
Major
* No major issues.

Minor
* The authors do not thorough discuss why there was a cross-sectional association between fibre intake and HbA1c, but not prospective.
* The authors also do not discuss possible reasons why the cross-sectional association attenuated in Model's 2 and 3.
* Line 125: The statement 'few adults with T1D meet current glycaemic control targets' needs to be supported by a reference.
* Lines 130-133: This sentence is quite long. Consider shortening this sentence.
* Lines 137-139: Stating actual sample sizes of each study would be helpful.
* Line 140: What are the new diabetes technologies?
* Lines 140-142: This sentence is out of place here.
* Line 151: Need to elaborate. What selected nutrients etc.?
* Line 154: What type of error? Although not traditionally thought of as fibre, resistant starch acts similar to fibre and has health benefits. Consider how resistant starch may effect glycemic control.
**Level of interest**
Please indicate how interesting you found the manuscript:

An article of importance in its field

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

Needs some language corrections before being published

**Declaration of competing interests**
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not
be published.

I agree to the open peer review policy of the journal