Reviewer’s report

Title: Dietary inflammatory index: a potent association with cardiovascular risk factors among patients candidate for coronary artery bypass grafting (CABG) surgery

Version: 0 Date: 05 Nov 2017

Reviewer: Joanna Hodges

Reviewer’s report:

The authors of this manuscript attempt to demonstrate that the dietary inflammatory index (DII) can be used to predict presence of cardiovascular disease (CVD) risk factors among patients awaiting coronary artery bypass grafting (CABG). The unique contribution of this study lies in its sample population: patients awaiting CABG whose heart failure severity is most likely routinely evaluated prior to the surgery. However, this study showed a significant correlation between DII and only 1 of the 3 analyzed heart failure scores - the EuroSCORE. Moreover, the manuscript has numerous other shortcomings, which have to be addressed prior to publication. The main limitations include:

1) The power of DII to predict CVD risk factors cannot be inferred from a cross-sectional study, especially in a patient population with pre-existing CVD and multiple other comorbidities. A cross-sectional study can only demonstrate presence of an association. The power of DII to predict CVD would have to be demonstrated with a prospective cohort study. Hence, the manuscript tile and conclusion have to be revised.

2) Abstract:
   a. Missing information about statistical methods
   b. No mention of the heart failure risk scores (NYHA, EuroSCORE, etc.) in methods
   c. Multiple acronyms without definitions (e.g.: MI, HCT)

3) Introduction:
   a. The first sentence is outright wrong. Iran has only 1% of the world's population. How can 50% of all CVD deaths occur in Iran?
   b. The sentence on l. 13 starts with a reference to a "mechanism", but no description of any mechanism follows. Instead, the authors list a number of loosely related associations between C-reactive protein, cytokines, adipose tissue, and insulin.
   c. Missing a clearly stated hypothesis
d. Could be strengthened by a discussion of the practical application of DII in CABG patients (e.g.: counseling, post-operative risk assessment)

4) Methods:
   a. Missing explanation of the heart failure risk scores (EuroSCORE, NYHA, etc.)
   b. The description of statistical analysis is unclear. The authors mention conducting three tests (t-test, Mann-Whitney, logistical regression), but do not specify which test was applied to which variables. Also, were the statistical tests corrected for multiple comparisons?

5) Discussion:
   a. Fails to follow a clear logic. The authors support their findings with similar studies pointing to an association between inflammation and CVD comorbidities (impaired kidney function, diabetes), but fail to address the question of causality: is inflammation a cause or an effect of these conditions?
   b. The entire section on the impact of BMI on post-operative survival is irrelevant.
   c. Missing description of study strengths and limitations

6) Throughout the manuscript:
   a. Wrong use of punctuation, poor word choice, numerous grammatical and syntactic errors
   b. Line numbers are not aligned with the lines. It is very difficult to make line-specific comments.
   c. Missing references (e.g.: ll. 25, 29)

7) Figures:
   a. Missing indices of statistical significance
   b. Perfunctory figure legends

**Level of interest**
Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests

**Quality of written English**
Please indicate the quality of language in the manuscript:
Not suitable for publication unless extensively edited

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