Reviewer's report

Title: Association of plasma endothelial lipase levels on cognitive impairment

Version: 2 Date: 25 Mar 2019

Reviewer: Katrina Davis

Reviewer's report:

Thank you to the authors for their response. I understand the point about not being able to reconstruct the flow-chart. However, the reader is entitled to know how this group was sampled as per comment 101 and 202. Even a convenience sample will have been chosen on some characteristic (e.g. the first 20 to reply to an advert, or those people who received both an MRI and PET scan during the nine months of recruitment, or those with enough spoken English to understand the instruction sheet seen in the consultant clinic on a Wednesday). The authors need to state how both cases and controls were recruited, and it needs to be in the manuscript (not just in response to reviewers) under methods and included in the discussion under limitations, so that the reader can evaluate whether the results could be due to sampling bias.

I offer a completely hypothetical example of how this could be done -- (E.G. We recruited volunteers from the community for a number of studies into ageing by placing posters in community centres, offering a free health check in recompense for research time, and received 122 replies. Of these, 51 met inclusion criteria for this study, and 63 were excluded due to age, medical condition, inability to tolerate MRI scanner and lack of availability (numbers for each unavailable). One of the doctors in the clinic recruited cases of MCI and dementia that were suitable for the study sequentially from those attending a geriatric clinic. Testing took place as part of routine clinic assessment for cases, and at the research centre for controls; limitations: recruiting non-systematically, and via different methods for cases and controls could have led to bias due to measured confounders (e.g. age and ApoE status) and unmeasured confounders (e.g. frailty, socioeconomic status and diet))

I would definitely wish to see this article in print, but I feel that describing the sampling methods is such a key part of scientific reporting that the authors must address this better before this manuscript is published.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

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 am able to assess the statistics

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

Acceptable

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