Reviewer’s report

Title: Associations of the metabolic syndrome and its components with cognitive impairment in older adults

Version: 0 Date: 08 Jan 2019

Reviewer: Reviewer 2

Reviewer's report:

PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses a testable research question(s) (brief or other article types: is there a clear objective)?
Yes - there is a clear objective

DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective?
No - there are minor issues

EXECUTION - Are the experiments and analyses performed with technical rigor to allow confidence in the results?
No - there are minor issues

Statistics - Is the use of statistics in the manuscript appropriate?
Yes - appropriate statistical analyses have been used in the study

INTERPRETATION - Is the current interpretation/discussion of the results reasonable and not overstated?
No - there are minor issues

OVERALL MANUSCRIPT POTENTIAL - Is the current version of this work technically sound? If not, can revisions be made to make the work technically sound?
Probably - with minor revisions

PEER REVIEWER COMMENTS:

GENERAL COMMENTS: The study adds to the growing body of literature on the issue of metabolic risk factors, inflammation and cognitive impairment. The authors have clearly described the aims of their study and have outlined their methods in a clear and concise manner. They have mentioned a few limitations such as the small sample size and the use of BMI as a surrogate for obesity. I feel that they have not controlled for enough confounding factors. These should include lifestyle factors such as smoking, physical inactivity and diet, as well as education level, mental illness (especially depression),
medications, previous stroke or myocardial infarction, etc. Furthermore, it would be important to discuss the possible confounding influence of the use of preoperative subjects rather than healthy community-dwelling subjects.

REQUESTED REVISIONS:
In addition to the above comments, I would suggest that the authors consider the effects of long term illness such as longstanding hypertension and hypertension-related illnesses (e.g. nephropathy, retinopathy, CVA) rather than a single measurement of blood pressure which may not reflect their usual state.
I would also like to see a comment on the practical utility of the authors' findings in the discussion. Perhaps the findings can be used to create a screening tool to identify patients at risk of future cognitive impairment. Would they need to use other markers such as serum inflammatory markers?
Ultimately, the best way to assess this correlation would be with a prospective cohort study, in which the authors would measure their subjects' cognitive decline over a period of time. This may not be feasible but should at least be mentioned in the discussion.

Note: This reviewer report can be downloaded - see attached pdf file.

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.
No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.
No

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

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