Reviewer’s report

Title: Electric vagal nerve stimulation inhibits inflammation and improves early postoperation cognitive dysfunction in aged rats

Version: 0 Date: 17 Mar 2019

Reviewer: Yiying Zhang

Reviewer's report:

In this review, the author attempted to evaluate effects of vagal nerve stimulation on postoperation cognitive dysfunction in aged rats. These observational studies gave a general overview of the association between the Control, splenectomy group, splenectomy + vagal nerve stimulation group in the level of TNF-α protein, mRNA levels of NF-κB, and Morris Water Maze studies. They found that the inflammation caused by the operation and general anesthesia can be partly inhibited by the electric vagal nerve stimulation.

The work presented is overall very important and interesting, however, some issues may need to be addressed before publication.

The author may need to clarify whether vagal nerve stimulation group alone would infect above factors. The author also need to clarify the increase of TNF-a levels in hippocampus brain tissue is due to the increase of blood serum or due to the brain tissue itself. There are some figures missing Y-axis indications.

Are the methods appropriate and well described?  
If not, please specify what is required in your comments to the authors.

Yes

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:

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