Reviewer’s report

Title: High-fat diet aggravates postoperative cognitive dysfunction in aged mice

Version: 0 Date: 18 Dec 2017

Reviewer: Tugba Karaman

Reviewer's report:

This study is well written and has a new perspective to postoperative cognitive dysfunction. But I do some issue about the study.

1) In the background (50) you wrote 35% fat. is it the 35% of the calories?

2) In the background (56) you have to put some references for the "as well as for various forms of accelerated cognitive dysfunction"

3) In the materials and methods (12) the age of the rats is unclear.

4) The approved number of ethics committee have to written.

5) In the materials method section, the numbers of the groups (ALS,ALC,HFC, HFS) is not clear

6) In the materials method section (animal model -4/23); the name of the anesthesia machine and monitoring equipment have to written.

7) The arterial tension of the rats and the temperature also have to monitored. Did you monitored or else, please clarify.

8) In the materials method section (Morris water maze test-3-5) the name of the system and analyzed software have to written.

9) In the result section, -23, the explanation of the fig. 2c, is HFC group true or is it HFS groups.
10) In the discussion part, (56); "develop into Alzheimer's disease (19)". It can be more suitable to cite the author that present this study. In this review(19) there is no another knowledge about relationship and POCD.

11) The other limitation of the study is one group (surgery group) had pain and the other had no surgery and pain. The analgesic drug might not be effective (only emla?) and after 48 hours pain might be persistant. Pain is one of the important factor of the POCD.

**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:

Acceptable
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