Reviewer’s report

Title: Effect of Hyperplasia and Apoptosis in Neural Stem Cells Treated with Sevoflurane

Version: 2 Date: 30 November 2014

Reviewer: Monika Berns

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Major Compulsory Revisions

The authors of the manuscript focused on an important subject of general anesthesia in young patients and their developing brains.

The experiments in the study produced promising results, but the paper suffers from fundamental problems such as many grammatical errors, missing spaces and incomprehensible sentences. The work would benefit from a detailed proofreading by a native speaker.

Materials

NSC culture

There should be a paragraph for the cell isolation from the removed brains. Did they take the whole brains or only specific regions as the hippocampus? Or is the medium they used a selection medium for specific cells?

There should be a paragraph concerning the method used for sevoflurane exposure. Did they use a billups chamber?

The method for the administration of bicuculline is completely unclear. What was the concentration used?

CCK-8 Assay and LDH Assay

What is the CCK-8 assay measuring exactly? Even if an assay is used the reader would like to know briefly how it works? LDH release is measured in the supernatant. Make this clear.

Results

Page 8 “Expression of GAGAA receptor with the treatments of sevoflurane” – What does that mean? Were the cells for this experiment exposed to sevoflurane for 2 days?

Discussion

In general there are unclear statements and conclusions. The assumed conclusion of hyperplasia is poorly explained by the results and/or not discussed. So the title of the paper might be wrong.
The authors conclude that the proliferation of NSCs exposed to sevoflurane decreased, but there is no experiment in their work that examines that. All experiments deal with cell death and apoptosis. Where the cells from the hippocampus?

Many grammatical errors or incomprehensible sentences.
Page 9 line 175: Behide “the study” is missing “of Statmann et al.”
Page 9 line 182: expose “to” sevoflurane
Page 10 line 198: “exposure” instead of “exposed”, “way” is missing behind time-dependent

Conclusion
In my opinion the conclusion has to be formulated more cautiously. Bicuculline is fare away from being a medication in clinical use.

Specific comments
Other grammatical examples
Page 3 line 49: “caused” instead of “causing”
Page 3 line 50: “system” is missing after nervous
Page 3 line 62: insert “the” before central
Page 4 line 69: “lead” not “leading”
There are many more mistakes in the whole text.

Level of interest: An article of importance in its field
Quality of written English: Not suitable for publication unless extensively edited
Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:
'I declare that I have no competing interests'