Reviewer's report

Title: Neuroprotective Efficacy and Therapeutic Window of Curcuma oil: In Rat Embolic Stroke Model

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Reviewer: Eduardo Candelario-Jalil

Reviewer's report:

Authors found a neuroprotective effect of the Curcuma oil (C. oil) against ischemic brain injury in a model of embolic stroke in terms of reduction of infarction, ischemia-induced neurological deficits, edema, apoptosis and free radical production. Although the manuscript is of interest, there are several points that need the attention of the authors.

Major Compulsory Revisions

1. It would have been very interesting to make a distinction between striatum and cerebral cortex, and the possible different effects of C. oil on the evaluated parameters in these two brain areas. It is possible that C. oil produces a different degree of protection in each brain region.

2. Why authors did not separate ipsilateral side (stroke) from contralateral side? Variables in Fig. 2 should have been studied in both sides.

3. Fig. 3. How did authors normalize for a reduced number of viable neurons in ischemic tissue?

4. How was the dose of C. oil selected?

5. What is the composition of peanut oil used in this study?

6. Was the infarct volume corrected for edema? Since C. oil considerably reduced edema formation, it is important to know if infarct volume presented in Fig. 1h has been corrected for edema.

7. Neurological scores should be presented for each animal in the experimental groups. These data are non-parametric by nature and they should be analyzed using a non-parametric statistical test, and presented as median/range.

8. A major methodological problem was found in the description of the myeloperoxidase assay. Animals should have been perfused with saline to flush out the blood from the vasculature in order to accurately estimate infiltration of polymorphonuclear leukocytes.

9. Dihydrorhodamine 123 is not specific for peroxinitrite. Previous reports have demonstrated that DHR-123 is also oxidized by H2O2.

10. Western blot data should be normalized to actin or tubulin.

11. How do authors envision a clinically relevant administration of C. oil to stroke patients? The oral route is not practical in this clinical condition.
12. There is a large number of typographical errors and several wording and grammar issues. An English-speaking colleague should revise the manuscript.

Minor Essential Revisions
- A list of abbreviations should be included.
- Discussion should be shortened.

Level of interest: An article whose findings are important to those with closely related research interests

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.