Reviewer's report

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

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Reviewer: Shyam S Sharma

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In this paper Garg et. al. have shown neuroprotective efficacy and therapeutic window of curcuma oil in rat embolic stroke model. They have demonstrated the amelioration of ischemia induced changes in the early lesion, neurological functional deficit, and infarct and edema volumes after C. oil treatment. As cerebral ischemia represents an unmet need of therapeutics, so neuroprotection is an interesting area to work but unfortunately very little novelty is achieved in the present manuscript. Though in this manuscript authors have used several techniques but paper is not hypothesis based, it looks like screening of Curcumin oil in embolic stroke model. There are also problem in English writing which makes this paper difficult to read and understand. I have following additional comments:

1. There are several reports showing the neuroprotective activity of curcumin and antioxidants in the different experimental models of cerebral ischemia. Moreover antioxidants are known to reduced nitrosative stress and apoptosis after cerebral ischemia. Even there are reports showing the neuroprotective potential of C. oil in cerebral ischemia. What this study adds to the existing knowledge of literature?

2. Why late stage assessments were not done using MRI? Authors have not shown cerebral blood flow (ml/100g brain tissue) alteration after occlusion and treatment using MRI.

3. Physiological parameters such as blood pressure, heart rate, temperature, blood gaseous concentration etc. are known to alter the severity of the IR insult. Data regarding these parameters must be provided with and without C. oil.

4. Neurological deficit scores should be represent as median + 95%
confidence limit and should be analyzed using Kruskal Wallis One way ANOVA on Ranks.

5. Brain area taken for immunohistochemistry should be mentioned? Mentioned the stereotaxic co-ordinates of it. Quantification of Immunohistochemical estimations will provide the more clear result. Scale bar should be a part in the photographs.

6. Immunoblotting of standard proteins (e.g. α actin) should be carried out to confirm the equal loading. Photographs should be shown in the respective figure.

7. What the possible reason for change in Bax and Bcl-2 expression after C. oil treatment?

8. They have shown the neuroprotective effects of C. oil only at a single dose. What is the rationale behind the selection of dose? To have the clearer picture at least three doses should be studied.

9. Results are not discussed properly hence discussion needs to be rewritten. Even in conclusion authors have discussed the results of some other study.

Paper should only be considered after above mentioned clarifications.