Reviewer’s report

Title: Cardiotonic pill attenuates white matter and hippocampal damage via decreasing inflammation and microglial activation in chronic cerebral hypoperfused rats

Version: 3 Date: 6 October 2013

Reviewer: zhong-xiang Yao

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Minor Essential Revisions

1. In the title: “via decreasing inflammation and microglial activation”, these two mean the same mechanism? And not mentioned the signal mechanism.

2. In the Abstract, line 1 of Background: “The cardiotonic pill (CP) is an herbal medicine”, the “an” should be “a”?

3. In the Abstract, the Conclusion is not wholly fitting for the results, for example, not mention the propective signal mechanism, the damaged targets (white matter and hippocampus), but expansion to vascular dementia (the proof is not satisfied).

4. In the results, the part of “CP inhibited microglial activation in the white matter and hippocampus induced by chronic BCCAo”, line 1 to 4, “Inflammation plays a key role in white matter lesions induced by chronic cerebral hypoperfusion [17, 18]. Long-term changes in regional cerebral blood flow and glucose utilization have been reported in white matter regions of chronic BCCAo rats, including the corpus callosum, internal capsule, and optic tract [19].” It is best to transfer to the part of discussion.

5. In the results, the part of “CP blocked the hyperphosphorylation of MAPKs in the hippocampus of rats with chronic BCCAo”, line 1 to 3, “MAPK signaling plays a major role in synaptic plasticity and hippocampus-dependent memory [23] and is involved in microglial activation and the production of proinflammatory mediators [24].” It is best to transfer to the part of discussion.

6. In discussion, the last part of the first paragraph, “These findings suggest that CP may exert protective effects against white matter and hippocampal damage induced by chronic cerebral hypoperfusion via an inhibitory action of myelin degradation.” It should also mention the neuronal death.

Level of interest: An article of limited interest

Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.