Reviewer's report

Title: Effects of minocycline alone and in combination with mild hypothermia in embolic stroke

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Reviewer: Prof Jari Koistinaho

Level of interest: A paper of considerable general medical or scientific interest

Advice on publication: Unable to decide on acceptance or rejection until the authors have responded to the compulsory revisions

This study is the first to demonstrate that minocycline antibiotic is neuroprotective against embolic stroke in an animal model. In addition, the study shows that although the beneficial effects of hypothermia and certain NMDA receptor antagonists are synergistic in the same stroke model, hypothermia does not significantly enhance the neuroprotective effect of minocycline.

This referee has the following specific comments:

Compulsory revisions:
1) In the results part, it is stated that the mortality in the control group (3/10) and in minocycline group (1/10) was not significantly different. In the discussion it is stated that hypothermia alone or in combination with minocycline decreased mortality. Even though these statements are most likely correct, the mortality study lacks statistics. Based on the data provided so far it is unclear how the conclusions on the changed mortality were reached.
2) Page 7, the first paragraph: "Second, minocycline affects cortical spreading depression,...[12]" In fact, that particular study cited here shows the opposite, which is that minocycline does not affect cortical spreading depression.

Discretionary revisions:
1) Page 7, the first paragraph. Previous in vivo (PNAS 98:14669-74, 2001) and in vitro (J Neurosci 21:2580-8, 2001) studies have suggested that inhibition of p38 MAPK may be a protective mechanism of minocycline

Competing interests:

None declared.