Reviewer's report

Title: Free radical scavenger, edaravone, reduces the brain ischemic damage especially in the white matter.

Version: 3 Date: 25 June 2010

Reviewer: Yoshiko Unno

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Minor Essential Revisions

1. (Methods)
The authors should provide details about their measurement method and references. There are many reports about precision and reliability for measurement of MRI lesion volume. Is it appropriate to compare diffusion-weighted images on admission and T2-weighted images on later phase? Are there validation studies on the method which have been already published? The authors should provide references or discuss differences in methodological approach in discussion section.

2. (Methods)
The authors categorized patients according to TOAST criteria, which are based on five categories: (i) large-artery atherosclerosis; (ii) cardioembolism; (iii) small-artery occlusion (lacunae); (iv) stroke of other determined aetiology; and (v) stroke of undetermined aetiology. At results section, the authors showed another subtype of stroke: embolic, atherothrombotic and lacunar, which are similar in Japan. The authors should provide these terms were equated with TOAST category.

3. (Results)
An average infarction volume in each stroke subtype should be included in the table.

4. (Results)
Figure 1 shows there is no difference between edaravone treated group and non-treated group 13 months after the onset of stroke. It means reduction of stroke volume in edaravone treated group progress earlier than edaravone non-treated group.

5. (Results)
Numbers of patients who underwent follow-up MRI in each period should be provided in Figure 2.

6. (Results)
Only few patients were assessed about prognosis at 1 year after stroke. A number of patients were too few to mention tendency.

7. (Discussion)
"Avoiding stroke by specific treatment in acute phase" is different from "a reduction of stroke lesion volume in chronic phase". Cause/meaning of a reduction of stroke lesion volume may be different from acute phase and chronic phase. The authors should state grounds clearly that a reduction of stroke lesion volume in chronic phase is a result of the inhibition of inflammation in acute phase. Therefore the authors may wish to reconsider the conclusion and the title.

8.(Discussion)
Study limitations should be addressed without excuse. (prospective study, limited numbers of patients are included in this analysis, etc.)

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

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**
I declare that I have no competing interests' below