Reviewer's report

Title: Automatic volumetry on MR brain images can support diagnostic decision making

Version: 1 Date: 2 April 2008

Reviewer: Ricardo Insausti

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Confidential comments to editors
Please use this only for comments that relate to ethical or policy issues. Do not use it to repeat all or part of the comments in your review for the authors. These comments will not be included in the report passed to the authors or posted on the site. Reviewer's report
Please number your comments and divide them into:

Major Compulsory Revisions

The author must respond to these before a decision on publication can be reached. For example, additional necessary experiments or controls, statistical mistakes, errors in interpretation.

Minor Essential Revisions

The author can be trusted to make these. For example, missing labels on figures, the wrong use of a term, spelling mistakes.

Discretionary Revisions

These are recommendations for improvement which the author can choose to ignore. For example clarifications, data that would be useful but not essential. Please note that both the comments entered here and answers to the questions below constitute the report, bearing your name, that will be forwarded to the authors and published on the site if the article is accepted.

Minor essential revisions
The manuscript aims at examining the usefulness of a colour overlay presenting the size rank in the segmentation used, as complement of pattern recognition and visual judgement of the pathological state of individual cases so it can help in decision making. The usefulness of elaborating raw data is particularly highlighted in this manuscript. The methodology is sound, although not devoid of limitations, and the results are self-explanatory. However, one might think that the cases presented in figure 1 allow more interpretations than that provided in the figure legend. In row b, authors should comment on color overlay showing a blue hue (decreased volume) over the entorhinal cortex on the left hand side of the axial section, and in the medial thalamus (mediodorsal nucleus perhaps) in the coronal section. Likewise, it would be very interesting the comment on, the red hue that seems to be coincident with the hippocampus on the left hand side in row d, the AD case; the asymmetry is even more accentuated in the coronal section of the AD case.

The journal details in
reference 10 should be completed to volume 33, and pages, 115-126.

What next?
Based on your assessment of the validity of the manuscript, what do you advise should be the next step?
Accept without revision
Accept after discretionary revisions (which the authors can choose to ignore)
X Accept after minor essential revisions (which the authors can be trusted to make)
Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions
Reject because scientifically unsound
Reject because too small an advance to publish (note that BMC Medical Imaging will publish all sound studies including sound negative studies)

Level of interest
BMC Medical Imaging has a policy of publishing all scientifically sound research whatever its level of interest. However if you choose one of the first three categories below, we may ask the authors if they would like the manuscript considered instead for the more selective journal BMC Medicine. An exceptional article (of the kind that might have warranted publication in such journals as Nature, Cell, Science, New England Journal of Medicine, British Medical Journal)
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Not suitable for publication unless extensively edited
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Statistical review
Is it essential that this manuscript be seen by an expert statistician? If you feel that the manuscript needs to be seen by a statistician, but are unable to assess it yourself then please could you suggest alternative
experts in your confidential comments to the editors.
Yes, and I have assessed the statistics in my report.
Yes, but I do not feel adequately qualified to assess the statistics.
X No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.