Author’s response to reviews

Title: A new age-related cutoff of medial temporal atrophy scale on MRI improving the diagnostic accuracy of neurodegeneration due to Alzheimer's disease in a Chinese population

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Reply to the editor

Dear editor:

Thank you so much for your kind and patience correction. Here are our point–to point replies to the reviewer’s answers.

Reviewer 1

1. This is a reasonably sized carefully conducted study determining ROC for a variety of clinical MRI measures used in the diagnosis of AD and MCI.
Abstract does not include MCI results, although these should be of most interest, both against controls and Alzheimer patients.
Reply: Thanks for your advice, we have checked in the manuscript and added the sentence "All of the scales showed relatively lower diagnostic values for discriminating aMCI from NC".

2."Total 585 subjects were diagnosed as normal..." should be reworded as: "Out of 585 enrolled subjects, 296 participants were included and diagnosed as normal cognition ....."
Reply: Thanks for your advice, we have revised the sentence "Out of 585 enrolled subjects, 296 participants were included and diagnosed as normal cognition".

3. The authors write in their discussion: "In this study, the MTA showed poor accuracy for discriminating aMCI from NC, and this result indicated that the new age-based cutoff score may be more suitable for the diagnosis and differential diagnosis typical AD phenotype in clinical practice". This is not surprising, as the aMCI group is likely to be less homogenous than AD patients, with some never reaching AD in their lifetime. It does not require great clinical acumen to diagnose dementia, but by placing MCI between controls and demented patients with some discrimination against both, MTA may well play a useful clinical role.
While "all subjects were enrolled from a memory clinic, the subjects identified as normal cognition may not be representative of the normal healthy population", this is also a strength, as the "worried well" require a diagnosis, but the unconcerned well do not! You could argue that using a selected group of super healthy subjects would make the diagnostic task too easy for you.
Reply: Thanks for your kind of patience.

Figure 2 requires revision - it is not easily understood and may be dropped and replaced by a table or in the text?
Reply: Thanks for your advice, we have dropped the figure 2.
Figure 3 is nice, why don't you add the equivalent figures for control vs MCI and MCI vs AD?
Supp Figure can be omitted, there are many examples available now.
Reply: Thanks for your advice, we have added the figures for control vs MCI and MCI vs AD.

Typos:
AUC was 0.0.598
Reply: Thanks for your advice, we have revised it.

Reviewer 2

PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses a testable research question(s) (brief or other article types: is there a clear objective)? Yes - there is a clear objective
DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective? Yes - the approach is appropriate EXECUTION - Are the experiments and analyses performed with technical rigor to allow confidence in the results? Yes - experiments and analyses were performed appropriately Statistics - Is the use of statistics in the manuscript appropriate? Yes - appropriate statistical analyses have been used in the study INTERPRETATION - Is the current
interpretation/discussion of the results reasonable and not overstated? Yes - the author's interpretation is reasonable
OVERALL MANUSCRIPT POTENTIAL - Is the current version of this work technically sound? If not, can revisions be made to make the work technically sound? Probably - with minor revisions
PEER REVIEWER COMMENTS: GENERAL COMMENTS: The study is, in general well-written (there are a few awkward sentences, however). The study has been performed appropriately and executed correctly. No significant changes seem to be needed. ADDITIONAL REQUESTS/SUGGESTIONS: The Discussion could be a bit extended, language could be improved.
Note: This reviewer report can be downloaded - see attached pdf file.
Reply: : Thanks for your kind of patience, we have revised the language.

Best wishes.

Jinzhou Tian