Reviewer's report

Title: Word Reading Threshold and Mild Cognitive Impairment: A Validation Study

Version: 1 Date: 28 June 2011

Reviewer: Lieke Smits

Reviewer's report:

Major Compulsory Revisions

Introduction

1) It is not clear why the authors refer to Cronin-Golomb et al., 1995. It is not in accordance with the statement they come up with.

2) Could the authors add some data on depression in AD? It's mentioned that it could influence cognitive performance and that tests demanding less attention are a major advantage for testing AD, but how big is this advantage?

3) In the third paragraph the authors mention the pilot study conducted by Massoud et al., in 2002 and state that it should be conducted in a larger group. Are there besides the results of Massoud any new insights in this matter, providing supplemental evidence why it would be interesting to do this study? What is the clinical implication of this study?

4) In the last paragraph the goal of the study is described: 'to validate the WRT as a diagnostic tool in MCI', from the abstract I got the feeling that the goal was to validate the WRT as a diagnostic tool in MCI for conversion to AD.

Methods:

5) Not all (cognitive) test used in the study are mentioned in the methods section. For example the GDS and the MMSE.

6) All MCI-subjects had a annual follow-up at the clinic; was it the same evaluation as at baseline? Did it include the WRT?

7) Could the authors mention which tests were used for which cognitive domain?

Results:

8) Had the suggested cut-off of 85 milliseconds the best sensitivity and specificity in your cohort, or was a different cut-off better? And if so, what were the implications on the results?

9) How was the rate of women vs. men in the groups? The effects of gender on neuropsychological performance are apparent, but it remains unclear if gender was entered as a covariate.

10) What was the (mean)time to converting to AD for MCI-subjects? Are there any results on how time to conversion had influence on the WRT at baseline? Where the six subjects correctly classified by the WRT subjects that converted
quickly after baseline, and/or was their duration of complaints longer? The reported information on the converters is very concise.

11) In table 2 N=120, what did happen to 2 subjects? What is the N of the groups?

Discussion:

12) Using subjects with a diagnoses of MCI rises could led to some limitations; it is a very heterogeneous group of subjects and at this moment is not clearly explained if and what the impact on this study was. For example these subjects obtain quite a high score on the Geriatric Depression Scale; where there patients who (at follow-up) did not meet the criteria of MCI anymore due to treatment for their depression and/or did subjects cognitively improve? Did all subjects remain MCI-subjects after follow-up?

13) Do the authors have data on vascular lesions in the MCI and AD-subjects? Where there AD-subjects with mixed pathology? Could they think of possible influence on their results?

14) What are the limitations/strengths of this study?

15) The last sentence of the discussion feels a little bit disappointing, could the authors think of a more striking conclusion, reflecting their study?

Minor Essential Revisions

Abstract:

1) The sentence ‘... over 8 years to monitor who progressed to dementia’ seems confusing, I suppose you mean ‘progressed to Alzheimer’s disease’. Accounts as well for ‘...individuals who progressed to dementia..’

2) Make sure you use the same abbreviations throughout the article. For example ‘normal elderly control’ is abridged to NE and NC.

Introduction

3) I would suggest to leave out ‘such as depression’ from the second sentence of the second paragraph.

4) Be sure that you use abbreviations when appropriate: ‘AD’ is mentioned before ‘Alzheimer’s disease’.

5) Here the confusion of the terms dementia and Alzheimer’s disease comes up again. I assume it is the conversion to Alzheimer’s disease you’re interested in?

6) The reference of Dubois, 2007 is not correctly displayed.

7) Might be clearer to add ‘and those who will not progress to AD’ after the first sentence of the second paragraph.

Methods:

8) Using subheads to divide the methods section would have preference

9) The penultimate sentence of the first paragraph says ‘MCI were followed’ is ‘subjects’ missing?
10) In the same sentence it would be clear if it would be mentioned to what form of dementia subjects converted.

11) In the fourth paragraph and throughout the whole article the Controlled Word Association Test is abridged to COWA, while it should be COWAT.

12) It is not clear which version of the Stroop test was used, table 1 provides some information, but it would be transparent when this would be explained in the text.

Results:

13) I would advise to describe global cognition as measured by MMSE in the results section.

14) Please check spelling (of neuropsychological tests); there are mistakes in the names and their use is not consequent throughout the article.

Discussion:

15) The reference of Massoud, 2002 is not correctly displayed.

16) It is stated in the fourth paragraph that the Trail Making Test A was associated with MCInp, however this does not come forward from the results or table 2. It just did not reach significance.

17) Please add a reference in the last paragraph after the enumeration of subdivisions of MCI.

18) The reference made in the last sentence of the discussion seems to be odd. It feels like the conclusion was drawn by someone else and not based on the current research.

Tables and Figure legends:

19) Table 1: is it possible to use other symbols for significant results? In that way it would be more in line with table 2, and besides that easier to understand.

20) Table 2: dividing the tests into cognitive domains (like table 1) would be better readalbe.

21) Figure 1: are dashes presented or nouns? Nouns is mentioned in the text, dashed in the figure legend.

Discretionary Revisions

It would be very interesting, if data are available, how the converters scored on follow-up WRT, if there is an annual decline in performance on this task. It is clear that at group level the WRT is insufficient to diagnose prodromal AD and this might be due to heterogeneity, but how is it in this specific group who do convert to AD? I got the feeling that converters are at this moment underexposed in the article.

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