Author's response to reviews

Title: Hippocampal volumes are important predictors for memory function in elderly women

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Version: 4 Date: 2 June 2009

Author's response to reviews: see over
Cover letter

Revision of our manuscript entitled "Hippocampal volumes are important predictors for memory function in elderly women" by M. Ystad et al.

(MS: 7558928024877514)

Bergen, 2 June 2009

Dear Prof. William Jagust,

we are grateful for the insightful contribution you have made to our article through your review. The thoroughness of your feedback made our job in revising the article easier and the final product has now hopefully improved. Below you’ll find comments on the issues you addressed in your review as well as references to changes we made in the article text.

1. The assertion of primacy:
   “...this is the only study other than Tupler et al that have combined all these measures to assess the combined predictive value of hippocampal volumes and ApoE genotype on CVLT measures” may be strictly true, but I don’t really think is that important. The exact memory test used to assess episodic memory performance is not very important, and there are very many studies that have examined relationships between these variables, and a few that come to mind that specifically examined both hippocampal volume and ApoE genotype as did the authors (Lind et al, Neuroscience Letters 2006, Adak et al Neurology 2004). A recent meta-analysis that the authors may wish to review (Van Petten Neuropsychologia 2004) reviewed some of these studies.

We agree that the exact memory test used to assess episodic memory is not very important, and that in this respect the present study is not completely unique. We therefore moderated our assertion of primacy and included the above references to the articles that have previously combined all three measures (episodic memory tests, Hippocampal Volumes and ApoE genotype) in the study of healthy elderly people. These changes can be found in section 5 under Background.
2. The subjects in the cohort are not very old. The mean age of the pooled sample is only 62 and while the range includes individuals in their mid to late 70’s the authors state that most subjects were <70. Comparing this group to other aging studies may be questionable since many cognitive and degenerative processes are relatively uncommon in this age group.

It is true that the subjects in the cohort is not very old. This is a result of the inclusion criteria. In particular, we wanted to be sure that no subjects with any kind of neurodegenerative pathology was included in the study. Furthermore, the study is intended as the first wave in a follow up study of healthy elderly people, where investigations are to take place every 3-5 years. Having said this, we agree that we should be cautious when comparing our results to those of other aging studies. We have therefore addressed this issue in section 5 under Discussion.

3. Figures 3-5 are incomprehensible to me. I took the authors’ word for the results but I’m afraid that with no labeling of the axes in these graphs and no explanation of what they mean, I could just not understand them. Perhaps this is a standard way of presenting data, in which case the problem may be mine, but otherwise I don’t think a reader will have any idea of the point the authors are trying to make without better explanation in the figure legends.

This scatterplot matrix depicting the relationship between all pairs of variables is a standard output from the statistical software package R. It is designed to convey information about the distribution of each variable (on the diagonal) and allows for scatterplot comparison between any two variables. It also provides the viewer with the linear regression line and a visual representation of the bivariate covariance (represented as ellipses) between any two variables. In statistical terms, the figure is highly informative, but we agree that without a more extensive explanation, the figure is somewhat incomprehensible. We have therefore included a more comprehensive explanation in the legend of Figure 3.
Editorial remarks:

1. Please include a "Methods" section in your manuscript; at present, it would appear that your manuscript lacks this section:

The "Methods" section had been commented by accident in the original latex-document. This has now been corrected.

1.a. Can you please revise your Abstract accordingly, to take into account your "Methods":

The Abstract has now been revised to include Methods.

Please also ensure that your revised manuscript conforms to the journal style (http://www.biomedcentral.com/info/ifora/medicine_journals). It is important that your files are correctly formatted.

The manuscript has been revised to our best efforts to conform with the journal style, using the LaTeX bmcformat style. Please do not hesitate to inform us of any inconsistencies.

Kind regards,

Martin Ystad and Arvid Lundervold