Author's response to reviews

Title: Diffusion tensor imaging differences relate to memory deficits in diffuse traumatic brain injury

Authors:

Eva M Palacios (evapalacios@ub.edu)
Davinia Fernandez-Espejo (daviniafernandez@ub.edu)
Carme Junque (cjunque@ub.edu)
Rocio Sanchez-Carrion (rsanchezcarrion@guttmann.com)
Teresa Roig (troig@guttmann.com)
Jose M Tormos (jtormos@guttmann.com)
Nuria Bargallo (bargallo@clinic.ub.es)
Pere Vendrell (pvendrell@ub.edu)

Version: 2 Date: 28 January 2011

Author's response to reviews: see over
Barcelona, 28th January 2010

Dr. Melissa Norton  
Editor-in-Chief  
BMC Neurology

Thank you for providing us the opportunity to resubmit our paper entitled “Diffusion tensor imaging differences relate to memory deficits in diffuse traumatic brain injury.” (MS: 7604001874655860).

Based on the suggestions of the reviewers we have made changes to refine the text. These changes include mainly: rephrasing the title of the manuscript, revising all the manuscript to be more precise in the description and discussion of our results and the conclusions based on them, and the incorporation of the suggestions of the reviewers in tables and figures. Due to the extensive changes, specially in the discussion section, we have decided not to include the removed paragraphs in order to focus on the important points and discuss the results in a more straightforward way, and thus facilitate the reading of the manuscript. If this causes any inconvenience please do not hesitate to let us know.

We hope that we have solved the problems in the original version of the paper and we would be happy to incorporate any new modifications that you or the reviewers consider necessary.

Please find below our responses to the reviewers' comments.

We look forward to hearing from you.  
Sincerely,  

Carme Junqué, Ph D.
Reviewer's report 1

Title: Different neural substrates of memory deficits in diffuse traumatic brain injury: a Diffusion Tensor Study.
Version: 1 Date: 12 November 2010
Reviewer: Sandrine de Ribaupierre
Reviewer's report:
Discretionary Revisions

The aim of the manuscript and the questions posed by the authors are well defined.
The title and the abstracts introduce the subject quite well. The different subsections are well balanced. The manuscript is well written, and is following the basic standards for reporting.
The methods used are appropriate, and could be reproduced. They don’t really state the limitations of their study. One of them being the small sample size.
Good matching of the controls to the patients.
In general it is an interesting article on DTI in traumatic brain injury demonstrating different patterns of FA reduction associated to different deficits. It is supported by recent references

Thank you very much for your comments.
Regarding the limitations of the study, we have now modified the last paragraph of the discussion explaining the main pitfalls.

Level of interest: An article of outstanding merit and interest in its field
Quality of written English: Acceptable
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

Reviewer's report 2

Title: Different neural substrates of memory deficits in diffuse traumatic brain injury: a Diffusion Tensor Study.
Version: 1 Date: 4 January 2011
Reviewer: Ryan D'Arcy

Reviewer's report:
This study examined the relationship between DTI and neuropsychological tests of memory in TBI patients. It is a well-written paper and a pleasure to read. The experiment is tightly presented and there is solid potential as a contribution to the literature. The only major revision concerns the need for a better characterization of significance and the ‘take-home’ message in the Abstract, Introduction, Discussion, and Conclusion sections.
All the mentioned sections have now been revised and modified according to your suggestions. We are very grateful for the reviewer’s comments, which we feel have contributed to making this a more tightly written paper.

This will help to maximize the paper’s impact. A number of minor edits/comments are also provided below:

The term “neural substrates” in the title is meaningless. Suggest a more direct title like:
“Diffusion tensor imaging differences relate to memory deficits in diffuse traumatic brain injury.”

Thank you for the suggestion. We have now changed the title according to your proposal: “Diffusion tensor imaging differences relate to memory deficits in diffuse traumatic brain injury.”

Page 4 (top): Why switch back to DAI after introducing concept of TAI?

The use of both TAI and DAI was the result of trying to maintain the original term used by the authors of the papers cited in the manuscript. However, we have now been consistent in the use of TAI throughout the manuscript in order to improve the coherence of the text.

Page 9/10: “In order to exclude the effect of the wide range in the time of evolution in the TBI group, correlations were covaried for this variable.” Please provide further detail.

We have now added the following in the section ‘Statistical analysis’ in page 10:

As seen in table one, the time of evolution since injury was very heterogeneous. In order to control possible effects of this variable in the correlation results, time of evolution was entered as a non-interest variable in the matrix.

Page 13 (middle paragraph): It appears that there is bilateral involvement of the arcuate fasciculi. So, why implicate only phonological loop and Broca’s/Wernicke’s involvement? A more parsimonious interpretation that addresses verbal/non-verbal WM and both hemispheres is needed.

We agree that the discussion involving only language areas could be considered a bit speculative and, as mentioned by the reviewer, a discussion about both superior longitudinal fasciculi in all their extension and related areas should be included. In the present version of the manuscript the discussion has been redirected to follow this comment and the reference to Broca’s/Wernicke’s involvement has been discarded as a result.

Discussion section in general: Whole text is meandering. This section needs to be shortened and more focused.
We have made extensive changes in the discussion section in order to focus on the important points and discuss the results in a more straightforward way. We have significantly shortened the discussion by removing all the paragraphs not directly related to our results. In order to make the reading of this section easier the discarded paragraphs have not been highlighted in the manuscript. We refer the reviewer to the revised version of the discussion.

Figure Legend

Figure 1: “It can be observed a widespread white matter affectionation.” Please correct grammar.

Figure 1. Results from TBSS analysis of FA maps showing the clusters of significantly reduced FA in TBI patients compared to controls in red (TFCE, p<0.05 FWE-corrected). Widespread white matter affectionation is observed.

Figures 2, 3 and Table 5: Please include correlation coefficients in figures so the reader can evaluate plots against numeric values. Please also provide these values in Table 5.

Correlation coefficients have now been added in Table 5 as well as in figures 2 and 3.

Level of interest: An article of importance in its field
Quality of written English: Acceptable