Reviewer's report

Title: The association between BDNF Val66Met polymorphism and emotional symptoms after mild traumatic brain injury

Version: 0 Date: 02 Oct 2017

Reviewer: Leigh Christopher

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The association between BDNF Val66Met polymorphism and emotional symptoms after mild traumatic brain injury

Wang et al. show an interesting effect of genotype on BDI scores post TBI whereby TT genotypes show higher scores compared to CC and CT genotypes (recessive effect). This is an interesting study, but there some methodological concerns. The lack of covariate inclusion to remove potential confounding effects is concerning, especially given that the p value is marginally significant. Analyses including covariates mentioned below would need to be carried out to draw conclusions from this study. The statistical section of methods is unclear/ too brief and tests used need to be clarified.

Grammar

Abstract:

* "But BAI scores show no significant associations.."

Introduction

* What is the rationale for the investigation of BDNF in emotional symptoms of TBA? Are there any studies that show that BDNF may be associated with emotional disorders/problems. These should be cited to strengthen the rationale of this study

Results

* What was the goal of assessing patients at 1 and 6 weeks? This should be explained
* Was the goal to test for a recessive effect of genotype? The BDI scores were higher in the TT genotype group but it is not clear what test was used. There are 3 p values reported in the table,
however, this should be clarified in the methods section as well as the results text. Was it a regression using an additive dosage effect for genotype and t tests for recessive and dominant tests? This needs to be clearly stated. In week 6 were the BDI scores still significantly higher? This should also be stated along with the p value in the text.

* What covariates were controlled for? This is not clear. Sex, education, age and severity of TBI should all be controlled for in these analyses to remove confounding effects.

* Was a history of previous anxiety or depression considered?

Discussion

* The conclusion of this study is overstated given that there is an unclear understanding of the methods and covariates used in the analysis. Although the ideas are interesting, a stronger methodological approach is needed as include all comments for the authors in this box rather than uploading your report as an attachment. Please only upload as attachments annotated versions of manuscripts, graphs, supporting materials or other aspects of your report which cannot be included in a text format.

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Are the methods appropriate and well described?
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No

Does the work include the necessary controls?
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No

Are the conclusions drawn adequately supported by the data shown?
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