Reviewer's report

Title: Decreased plasma neuroactive amino acids and increased nitric oxide levels: a possible trait-marker for melancholic major depressive disorder

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Reviewer: Tianmei Si

Reviewer’s report:

This is an interesting study. To explore the possibility, which neuroactive amino acids changes in patients with naive first episode work as the biomarkers of MDD. The approaches are sound and manuscript well written. I have two major concerns as well as a few minor points.

Major concerns

1. The three groups were not comparable. The key question in this study is “can plasma level of amino acids neurotransmitter equate the CSF level?” The aim of this study is to establish whether changes in the plasma level of amino acids may serve as biomarker for the melancholic subtype of MDD. But the answer from the second control, the 10 non-depressed subjects, was no. There was no significant correlation between the plasma and CSF levels of amino acids. The conclusion can not be drawn, because this control was not suitable as the control, they had the medical conditions, mainly the brain diseases, which may cause the BBB abnormal, the results from this control were no credible.

2. The follow up protocol and process was not clear, only 7 patients were followed up, and the results showed no significant changes before and after treatment (Figure 3). The conclusion was not drawn, because the treatment process was not clear, and the sample size was too small.

Minor points

1. How many item of HAMD was used in this study? Please clarify it.

2. Please introduce the demographic data of subjects? For example, How long the subjects suffered from the MDD?

3. The author mentioned one of the subject actually committed suicide later, what is the later? How long the subjects were followed up? What are these suicide symptoms outcomes?

4. The Table 1 is too complicate to understand well.

5. The Figure 1 is redundant.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable
Statistical review: Yes, and I have assessed the statistics in my report.