Reviewer's report

Title: Association of Decreased Early Pregnancy Serum Brain-Derived Neurotrophic Factor (BDNF) Concentrations with Antepartum Depression

Version: 3  Date: 24 January 2015

Reviewer: Hajime Baba

Reviewer's report:

Authors measured serum BDNF concentrations in early pregnancy stage and analyzed association with antepartum depression. They complained that lower serum BDNF concentrations in early pregnancy are associated with antepartum depression.

Although this study is clinically important, there are some logical and methodological limitations that detract from contribution of the research study.

1. The aim of this study is unclear. Authors described an importance of early detection of antepartum depression in the ‘Introduction’ section. Does authors want to explore an association between serum BDNF and depressive state in early pregnancy? Or want to find predictive markers or diagnostic marker for onset of antepartum depression?

2. Timing of collection blood samples for BDNF measurement, and assessment of antepartum depression are not clear. Evaluations of BDNF and depression were same time? Did blood samples collect in the morning?

3. Serum or plasma BDNF has been known as a "state" marker especially in depression. BDNF cannot be a diagnostic marker, because there is a large overlap in BDNF concentrations in depressed patients and healthy subjects. Additionally, BDNF is also difficult to be a predictive marker for depression. Because BDNF concentrations link with "current" mental state. The change of BDNF concentration is closely with the change of mental state by treatment response.

4. Authors mentioned an influence of estrogen to BDNF expression and concentration in the ‘Discussion’ section. They should describe estrogen and progesterone concentrations at the same timing of BDNF measurement. They should consider the influence of these hormones to BDNF concentrations and depression.

5. In the ‘Results’ section of manuscript, authors indicated mean ± standard 'error' of BDNF concentrations, however, in the ‘Table 2’, they indicated mean ± 'SD'. It would be mistyping. They should indicate standard deviation. There are several other mistyping.

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

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.