Reviewer's report

Title: Altered cardiac autonomic nervous function in depression

Version: 2 Date: 5 May 2013

Reviewer: Elisabetta Patron

Reviewer's report:

The manuscript, "Altered cardiac autonomic nervous function in depression" is a valuable addition to the literature on the relationship between depression and heart rate variability. The manuscript is clearly structured. The authors report on an interesting and well-designed study analyzing the relation between depression, reduced heart rate variability and greater risk of arrhythmia.

Minor Essential Revisions

1) On page 10 the authors stated: “the practical clinical outcome of these data showed increased sympathetic nerve and reduced parasympathetic nerve activities, suggesting dysregulation of sympathetic and parasympathetic coordination in depression.”

LF index reflect both parasympathetic AND sympathetic activity, therefore if LF index is elevated it does not mean necessarily that sympathetic activity is increased. Moreover LF activity reflects baroreflex activity and is highly influenced by position of the subject during recording. The same is for LF/HF ratio, if LF reflects both parasympathetic AND sympathetic activity LF/HF ratio may reflect a change in parasympathetic vagus nerve activity, and may be influenced by far more factors.

Therefore the interpretation of the result on these two indices (LF and LF/HF) should be explained with more caution.

2) In Table 2 the authors report Frequency domain indexes (i.e. LF, HF and LF/HF) in ms, but in the text they stated they calculated and reported Frequency domain indexes as absolute values, expressed in ms2. Also the authors stated they calculate normalized indexes, but from the result section and from Table 2 is not clear if the absolutes values or the normalized indexes were used for the analysis, the authors should disambiguate this issue.

3) The authors report correlation between depressive severity index and LF/HF and between depressive severity index and SDNNR. For completeness, the authors should report information on correlations between all HRV indexes (both time and frequency domain) and depression severity index.

Discretionary Revisions

1) In the background and/or discussion session the authors could refer to the wide literature associating depression to reduced HRV in patients with cardiovascular disease (among which: Bigger et al.,1993; Carney et al., 2001;
Rich et al., 1988; Gehi et al., 2005; Stein et al., 2000; Martens et al., 2008; Patron et al., 2012) and refer to the review of Carney and colleagues (2002) on Depression as a risk factor for cardiac mortality and morbidity.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

'I declare that I have no competing interests'