Reviewer's report

**Title:** Specificity of Transcranial Sonography in Parkinson Spectrum Disorders in Comparison to Degenerative Cognitive Syndromes

**Version:** 1  **Date:** 16 September 2011

**Reviewer:** Marek Belohlavek

**Reviewer's report:**

I have spent extensive time and efforts to provide constructively critical comments. They are not intended to be discouraging but, rather, represent my well-meant intention to give the authors suggestions for improvement.

Major compulsory revision:

1) The Background section is too long, with various redundancies (including unusual and unnecessary information about authors' accepted abstract). References to Figure 1, which is a very difficult-to-comprehend ultrasound image, do not provide adequate interpretations as to what is in the image. Various statements, such as, for example, "...as it is summarized in Figure 1, it was observed and published pretty high frequency of SN signal changes in Parkinson spectrum..." or "...high sensitivity of the test is little of doubts, but in general if the higher sensitivity of the test, the lower the specificity...", make little or no sense, or are redundant.

2) Methods need to be restructured into sections on approaches and individual methods to properly guide a prospective reader. Parameters of ultrasound analysis are mentioned by not clearly explained (page 7). Hyperechogenicity is mentioned later in the Methods section, but no adequate examples are given although this is the key method in this study. There is a reference made to Prof. Berg and colleagues with regard to their advice, but this should be presented, if at all necessary, as personal communication or, better, a reference to a relevant peer reviewed publication by Prof. Berg and colleagues should be given.

3) Results are provided by means of poorly formatted and overwhelmingly complex tables, and by difficult-to-understand descriptions.

4) The Discussion section starts with an irrelevant reference to Prof. Berg's review, while this section should start with a clear summary of novel findings. Confusing statements, such as "...the values of the diagnostic accuracy were counted exceptionally on SN measurements, and integration of the other TCS features proved helpful..." make a very little sense. The entire Discussion would have to be substantially rewritten and restructures to be a clear digest of the key findings and their relation to current knowledge. Limitations of transcranial sonography should be discussed in this section.

5) Conclusions - there aren't really clear conclusions. Long statements like...
"...Despite it was detected the lower specificity for PD, when compared to parkinsonian syndromes and dementia, TCS proved its sufficient diagnostic value based even on isolated measurements of SN hyperintensive signal (qualitatively and quantitatively), taking into account early stages of PD, heterogeneous sample of the patients, different ultrasound system being used and correlation between some clinical symptoms..." do not provide adequate summary of what has been found.

The overall workmanship of the manuscript is very poor. In addition, a thorough revision from a view point of English grammar is necessary. The pronoun “it” is used excessively and confusingly.

**Level of interest:** An article of limited interest

**Quality of written English:** Not suitable for publication unless extensively edited

**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.