Reviewer’s report

Title: Enhanced catecholamine transporter binding in the locus coeruleus of patients with early Parkinson disease.

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Reviewer: Ahmad Salehi

Reviewer’s report:

Enhanced catecholamine transporter binding in the locus coeruleus of patients with early Parkinson disease by Isaias and colleagues.

This is an interesting study looking at a ligand for dopamine transporters in patients with Parkinson disease and controls in striatum as well as locus coeruleus. The ligand is mainly used for assessing dopamine reuptake transporters. However, the authors used FP-CIT to label NET in locus coeruleus where dopaminergic activity is low.

1) The biggest problem with the conclusion is the use of drugs by the PD patients. In fact it is very difficult to know whether the differences found between the two groups are due to the use of drugs in PD group or PD pathology. The authors have to propose ways to distinguish between the effects of drug treatment and PD pathology.

2) The whole manuscript should be reviewed for English. There are several sentences that must be re-phrased for clarity.

3) Page, 3, para 2, lines 60. Rephrase this sentence.

4) Page 4, para 1, line 2: “Ospedale Maggiore Policlinico” explain where the clinic is located.

5) Page 6, para 5, last 2 lines: Rephrase this sentence.

6) Page 6, para 2. Use actual p values. Please also make sure to use actual p values in Table 2.

7) It is not clear how many PD cases also had depression and whether that had any effects on the results.

Minor comments:

1) Many different fonts have been used in this manuscript.

Page, para 3, line 4, """"###"""" is supposed to be alpha synuclein. (The same for reference #30).

2) Align the rows and lines in Table 1.

Level of interest: An article of importance in its field

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

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I have submitted a U.S. patent application related use of noradrenergic drugs in individuals with Down syndrome and Alzheimer’s disease.