Reviewer's report

Title: Clinical features and dysfunctions of iron metabolism in Parkinson disease patients with hyper echogenicity in substantia nigra: a cross-sectional study

Version: 0 Date: 29 Jul 2017

Reviewer: Chin-Hsien Lin

Reviewer's report:

The article entitled "Clinical features and dysfunctions of iron metabolism in Parkinson disease patients with hyper echogenicity in substantia nigra: a cross-sectional study" by Yu et al examined the relationship between hyper-echogenicity of substantia nigra and motor/non-motor symptoms of patients with PD. This study is a cross-sectional study design. The authors also compared the levels of iron and related proteins in serum and cerebrospinal fluid (CSF) between hyper-echogenicity group and normal echogenicity group. The total enrolled patient number was 374 in the study. The authors observed that PD patients with hyper echogenicity in substantia nigra were older, at more advanced disease stage, had severer motor symptoms, cognitive impairment and autonomic dysfunction than patients with normal echogenicity. The protein levels of iron metabolism in CSF were also different between hyper-echogenicity group and normal echogenicity group.

The manuscript is clearly written. However, I have some concerns for this study listed as below.

1. Although the grading of hyper-echogenicity was based on the criteria proposed by Bartova P et al (Ultrasound Med 2010, 29(1):37-42.), I would suggest the authors to illustrate the echo photos of each grade to make readers clearer.
2. Is there any correlation between iron levels of CSF or serum and motor symptoms severity?
3. Is there any correlation of the levels of iron metabolism proteins between CSF and serum?
4. The major limitation is there were no age-matched controls in the study. I would suggest the author to list this point as one of the study limitations in the discussion.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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