Reviewer's report

Title: Inflammation biomarker discovery in Parkinson's disease and atypical parkinsonisms

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Reviewer: Hidetomo Murakami

Reviewer's report:

Clinical diagnosis of MSA and PD is sometimes difficult and useful biomarkers are required. This article shows possible usefulness of such CSF biomarkers. However I have some concerns.

1. Pathophysiology of PD and MSA begin before the onset of motor symptoms, and prognosis of both disorders differ. Authors should describe the disease duration from symptom onset at baseline assessments.

2. It is known that mean survival duration of MSA is shorter than that of PD. Were all MSA patients alive after 12 years of follow up? If so, patients included in this study could be considered as "milder MSA". I think there is a possibility that pathology of such patients differ from that in typical MSA patients with worse outcome. Were all PD patients in life after the 12 years follow up? Authors should clarify the outcome of patients if patients died within the 12 years. Were there difference in the CSF level of biomarkers according to the survival duration?

3. Authors evaluated ataxia using ICARS score. Authors should mention number of MSA-C and MSA-P patients respectively.

4. Is a red blood cell count of 200/μl enough to rule out blood contamination? Do red blood cell include inflammatory proteins?

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.

Yes

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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