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Telephone: +1-925-399-1568
E-mail: bpgoffice@wjgnet.com
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PEER-REVIEW REPORT

Name of journal: World Journal of Clinical Cases

Manuscript NO: 54434

Title: Elevated serum growth differentiation factor 15 in multiple system atrophy patients: A case control study

Reviewer's code: 01219902
Position: Peer Reviewer
Academic degree: MD
Professional title: Doctor
Reviewer's Country/Territory: Japan
Author's Country/Territory: China

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Reviewer chosen by: Ruo-Yu Ma
Reviewer accepted review: 2020-02-25 04:51
Reviewer performed review: 2020-02-26 09:56
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Scientific quality	[ ] Grade A: Excellent [ ] Grade B: Very good [Y] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Language quality	[ ] Grade A: Priority publishing [Y] Grade B: Minor language polishing [ ] Grade C: A great deal of language polishing [ ] Grade D: Rejection
Conclusion	[ ] Accept (High priority) [ ] Accept (General priority) [ ] Minor revision [Y] Major revision [ ] Rejection
Re-review	[ ] Yes [ ] No
Peer-reviewer statements	Peer-Review: [Y] Anonymous [ ] Onymous Conflicts-of-Interest: [ ] Yes [Y] No

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SPECIFIC COMMENTS TO AUTHORS

The authors report on the elevated levels of serum GDF15 in MSA compared with PD and healthy controls. This observation is very interesting. It seems plausible that GDF15 is involved in the pathogenesis of MSA. This study is commendable, and will help clinicians tackle this devastating disorder. I have a few comments to suggest. #According to this study and others, GDF15 seems generally elevated in neurodegenerative diseases, including MSA, PD, DLB, etc. This study deals with serum, while others (ex. ref 18) deal with CSF. Why serum in this study? Are there any other studies dealing with serum GDF15; and if so, in what neurodegenerative diseases? There happens to be data about CSF GDF15 in this study? Are there any data about serum GDF15 vs CSF GDF15 in neurodegenerative diseases, with respect to their superiority or inferiority for the differential diagnosis? #Supplement Table 1 is interesting, which, I guess, is ok by itself. But my bigger concern is as follows. For example, this table says hyper-intense putaminal rim, which is really a good diagnostic tool for MSA, is absent in 23 MSA-P and 14 MSA-C patients. My question is 'how about serum GDF15 levels in these patients (37 MSA patients in all)?' If it is sufficiently elevated (take >1075 pg/ml, for example, according to table 3), serum GDF15 is really a useful tool for the correct diagnosis of MSA. In this Supplement Table 1, we have a good array of items suggestive of MSA, for example, syncope/dizziness, sweating, urinary/sexual dysfunction, orthostatic hypotension, Babinski, hot cross bun sign, etc. I guess it possible to analyze statistically in the same way like, 'hyper-intense putaminal rim: MSA: no yes VERSUS MSA: >1075 pg/ml <1075 pg/ml'. This analysis will enhance the value of this paper as well as serum GDF15 for the diagnosis of MSA. #There are grammatical errors throughout the text: Ex. Discussion, 3rd paragragh: GDF15 may be a biomarker for cognitive impairment no dementia or…: This sentence is difficult to understand.

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Please refine the Ms grammatically again.