Reviewer’s report

Title: Electro-acupuncture decreases 5-HT, CGRP and increases NPY in the brain-gut axis in two rat models of Diarrhea-predominant irritable bowel syndrome (D-IBS)

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Reviewer: Jianliang Zhang

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Comments to the authors

This article describes the modulation of some neurotransmitters (5-HT, CGRP and NPY) in the hypothalamus, lumbar spinal cord and distal colon of two model rats with diarrhea-predominant irritable bowel syndrome (D-IBS) by electroacupuncture (EA).

The INTRODUCTION is too short, failing to provide sufficient information concerning benefits of acupuncture on IBS, role of abovementioned neurotransmitters in IBS process particularly in the mediation of acupuncture induced therapeutic efficacy.

The authors gave a detailed description of the METHODS, though inappropriate in sequence. Notably, only ELISA was invoked to assess the changes of the neurotransmitters in this study. Apparently, additional means like immunohistochemical and or Western blotting are required, as it usually goes, to support the reliability of the data.

It is of great significance to link the bioactive molecules with behaviors. In the RESULTS, the authors presented by and large a comprehensive profile of the multiple variables and their potential correlations. Due to the lack of bar figures, however, it is not readily for the readers to get to the point.

The DISCUSSION is not deep-going. It is generally held that the vagus nerve takes critical role in the brain-gut axis. What are the impacts of 5-HT, CGRP and NPY on vagal activity and its neurotransmitter (Ach)? Why the lumbar intumescentia (L4-6) was targeted in this work? It should be noted that these spinal segments have no much relationship with the distal colon, either sympathetically or vagally or parasympathetically. In addition, the limitations of the study were not fully stated.

Language

Overall, the manuscript would need some editing.

Line 77: Part of the rat subjects received…
Line 83-84: NanJing JiSheng Medical Treatment Science and Technology…
Line 101: Rats were sacrificed on the second after…
Line 110: Numerical variables are expressed as means#SD, and used analysis of variance…
Line 122: In the head column of table 1, “times”;
Line 141-142: Both the CAS and ISC conditions can decreased CRD…
Line 160: …content of spinal root…
The title of table 2: …between arious factors…
Line 176: In combined with correlation matrix…

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

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

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.