



The role of sex hormones in the fecal microbiota of IBS-D patients with exacerbation of symptoms deserves attention

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To the Editors

We read the article with great interest by Yukari Tanaka et al. [1] We appreciate that this article addresses a research vacuum in this area by demonstrating that colonic host-microbial interactions in IBS-D patients during exacerbation of symptoms

Although the authors eliminated some effects on fecal microbial diversity, they did not reveal the differences in dietary regimens between the two groups of participants prior to the experiment, which might have influenced the results. More crucially, because of the influence of the gonadal cycles on fecal bacteria, the authors exclusively recruited male participants. In this respect, we have the following discussions and suggestions.

More women than men experience IBS-C symptoms in IBS patients, while IBS-D symptoms are more common in males. [2] This suggests that sex hormone variations between males and females most likely affect the looseness and water content of stool in IBS patients on a physiological and pathological level. Not only that, but our observations of female IBS-D patients in hospital outpatient clinics confirm the claim of L. Chang et al. that women are more prone to experience severe abdominal

discomfort and diarrhea during menstruation [3]. Consequently, it follows that variations in sex hormone levels are also most likely to be linked to the worsening of IBS-D symptoms.

Existing research has demonstrated that sex hormones can directly influence bacterial metabolism through steroid receptors [4] and that estrogen can have a significant impact on the fecal microbiota [5]. In addition, it has been demonstrated that the rise in estrogen during pregnancy makes constipation symptoms worse. [6] This may be due to altered fecal microbial diversity. Therefore, we propose that, potentially through the gut bacteria, variations in sex hormones between men and women, as well as their cyclic fluctuations in women, have a significant role in the development and exacerbation of IBS-D.

To better understand the role played by sex hormones in regulating the gut microbes of IBS-D patients during the exacerbation of symptoms, we propose to continue monitoring the fecal and oral microbiota in menstruating and non-menstruating women presenting with exacerbating IBS-D symptoms while controlling for other confounding factors as much as possible.

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Declarations

Conflict of interest The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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