



Concise Commentary: Bloating in IBS: Can We Burst the Bubble?

Will Takakura¹ · Prashant Singh^{1,2}

Received: 20 January 2024 / Accepted: 30 January 2024 / Published online: 9 April 2024

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2024

Plecanatide is an FDA-approved drug for the treatment of irritable bowel syndrome with constipation (IBS-C), effective in treating abdominal pain and constipation [1]. In this issue of *Digestive Diseases and Sciences*, Brenner et al. [2] report a *post-hoc* analysis of two identically designed, double-blind, randomized controlled trials designed to evaluate the effect of plecanatide on bloating severity in patients with IBS-C. They compared the response of plecanatide in IBS-C patients with moderate-severe bloating to those with mild bloating. For patients with moderate-severe bloating, plecanatide significantly decreased bloating severity compared with placebo. Similarly, a significantly greater percentage of patients with moderate-severe bloating met the composite endpoint of $\geq 30\%$ improvement from baseline in bloating and abdominal pain with plecanatide compared with placebo (33.6% vs 26.8%, $P = 0.02$). There was no difference in bloating severity between plecanatide and placebo in IBS-C patients with mild bloating. Overall, plecanatide appears to improve bloating in patients with IBS-C with moderate—severe bloating, although the effect is modest, with a number needed to treat (NNT) of 15 for meeting the composite endpoint and a difference of 0.4 in the continuous bloating score.

Observational studies have reported that bloating severity correlates with abdominal pain and constipation severity in patients with IBS [3]. Though the present study also reported a similar finding, the correlation between bloating and bowel symptoms was much weaker compared with the relationship between bloating and abdominal pain at baseline as well as week 12. Taken together, this points towards a complex and

multifactorial pathophysiology of bloating in these patients which is presumably at least in part related to visceral hypersensitivity. The findings from this study and other guanylate-cyclase-C agonists such as linaclotide, which is also effective in improving bloating, suggest that this class of drugs might have a direct effect on visceral hypersensitivity independent of their secretagogue action i.e., their effect on gut mucosal water and electrolyte secretion.

In nutshell, since bloating, a difficult-to-treat and most bothersome symptom in patients with IBS, has no FDA-approved treatment, this study adds to the limited number of medications that clinicians have in their armamentarium to potentially treat bloating in patients with IBS-C.

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

References

1. Brenner DM, Fogel R, Dorn SD et al. Efficacy, safety, and tolerability of plecanatide in patients with irritable bowel syndrome with constipation: results of two phase 3 randomized clinical trials. *Am J Gastroenterol*. 2018;113:735–745.
2. Brenner DM, Sharma A, Rao SSC et al. Plecanatide improves abdominal bloating and bowel symptoms of irritable bowel syndrome with constipation. *Dig Dis Sci*. (Epub ahead of print). <https://doi.org/10.1007/s10620-024-08330-y>.
3. Gardiner CP, Singh P, Ballou S et al. Symptom severity and clinical characteristics of patients with bloating. *Neurogastroenterol Motil*. 2022;34:e14229.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

✉ Prashant Singh
singhpr@med.umich.edu

Will Takakura
takakurw@med.umich.edu

¹ Division of Gastroenterology, Department of Medicine, University of Michigan, Ann Arbor, MI, USA

² Division of Gastroenterology, Department of Medicine, University of Michigan, MSRB1, Room 6520B, 1150 W Medical Center Drive, Ann Arbor, MI 48109, USA