The Impact of Plecanatide on Patient-Reported Assessments of Disease Severity, Quality of Life, and Treatment Satisfaction in Adults With Irritable Bowel Syndrome With Constipation

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BACKGROUND

- Irritable bowel syndrome with constipation (IBS-C) is a chronic condition affecting approximately 5% of the United States population (~16 million people),[1] though prevalence may be underestimated as many people exhibit IBS-C symptoms without a formal diagnosis.[2]
- IBS-C is characterized by recurrent defecation-related abdominal pain with hard, infrequent stools; it affects patients' quality of life (QOL), work productivity, personal activity, and healthcare expense burden.[3-7]
  - Treating IBS-C should improve the patient's experience of IBS-C symptoms as well as QOL functions.
- Plecanatide is an analogue of uroguanylin, an endogenous regulator of intestinal fluid secretion.
  - Plecanatide 3 mg is approved for the treatment of adults with chronic idiopathic constipation and IBS-C.[8]
- Two phase 3 studies of plecanatide examined changes in QOL measures (NCT02387359 and NCT02493452).[9]

OBJECTIVE

- The purpose of this analysis is to evaluate the impact of plecanatide on patient-reported assessments of QOL, disease severity, treatment continuation, and treatment satisfaction in patients with IBS-C.

METHODS

- Two identically designed 12-week phase 3 studies were conducted.[9] Data were pooled, with duplicate patients excluded.
- Eligible patients met Rome III criteria for IBS-C and were randomized to plecanatide 3 mg, 6 mg, or placebo.
- Patient-reported measures included Patient Global Rating of Irritable Bowel Syndrome (IBS) Disease Severity, IBS-QOL, treatment satisfaction, and continuation assessments.
- Disease severity and IBS-QOL questionnaires were completed on Day 1 and Weeks 4, 8, and 12; treatment satisfaction at Weeks 4, 8, and 12; and treatment continuation at Week 12 only.

RESULTS

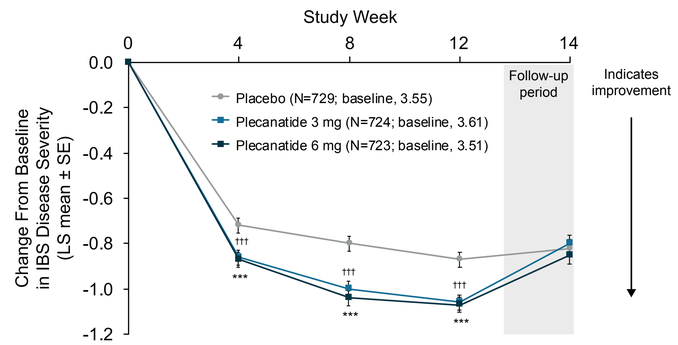
Table 1. Demographics and Baseline Characteristics

Patients	Placebo (N=729)	Plecanatide 3 mg (N=724)	Plecanatide 6 mg (N=723)
Age, years, mean (SD)	43.9 (14.24)	43.5 (14.18)	43.1 (13.77)
Sex, n (%)			
Female	540 (74.1)	534 (73.8)	536 (74.1)
Male	189 (25.9)	190 (26.2)	187 (25.9)
Race, n (%)			
White	536 (73.5)	527 (72.8)	515 (71.2)
Black	160 (21.9)	155 (21.4)	177 (24.5)
Other	33 (4.6)	42 (5.8)	31 (4.3)
BMI, kg/m^2, mean (range)	27.98 (18-40)	28.25 (18-40)	28.07 (17-42)
Disease characteristics, mean (SD)			
CSBMs/week	0.24 (0.453)	0.24 (0.500)	0.27 (0.526)
Stool consistency (BSFS)	2.03 (1.022)	1.97 (0.913)	1.92 (0.917)
Straining severity*	6.58 (1.927)	6.66 (1.856)	6.69 (1.884)
Abdominal pain*	6.26 (1.711)	6.26 (1.697)	6.22 (1.757)

*Rated on a scale from 0 (no symptoms) to 10 (worst possible). BMI, body mass index; BSFS, Bristol Stool Form Scale; CSBM, complete spontaneous bowel movement; ITT-E, intention-to-treat–efficacy; SD, standard deviation.

- The pooled intention-to-treat population comprised 2176 patients (mean age 43.5; 74.0% female).
- Demographics and baseline characteristics were balanced across treatment groups (**Table 1**).

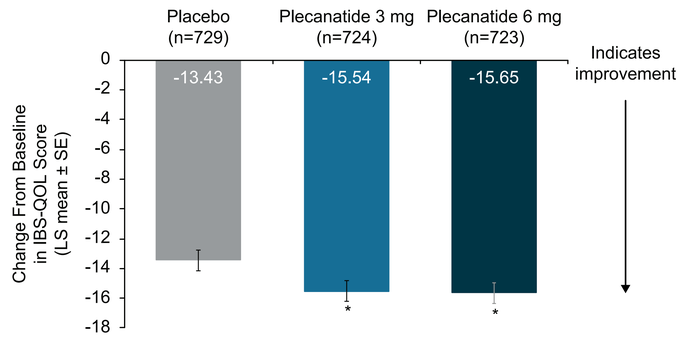
Figure 1. Change From Baseline in Patient Global Rating IBS Disease Severity Score



Plecanatide 3 mg: †††P≤0.001 vs placebo. Plecanatide 6 mg: ***P≤0.001 vs placebo. IBS Disease Severity was measured using a 5-point scale (1=none, 5=very severe). LS, least squares; SE, standard error.

- Patient Global Rating of IBS Disease Severity demonstrated statistically significant change in the plecanatide group versus placebo across the 12 weeks (P<0.001 both doses), as well as at Weeks 4, 8, and 12 (P≤0.001 both doses, all visits) (**Figure 1**).

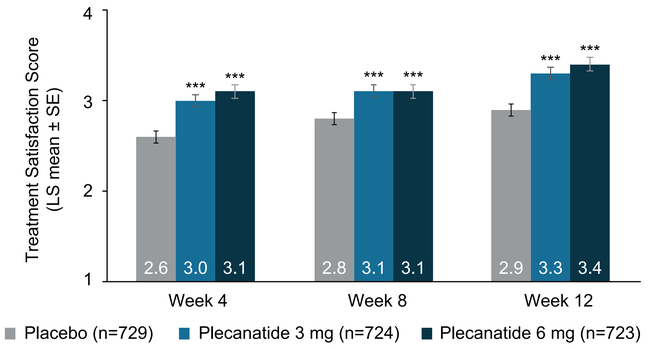
Figure 2. Overall Change From Baseline in IBS-QOL Total Score Across 12 Weeks of Treatment



*P≤0.05 vs placebo. IBS-QOL, a 34-item questionnaire, is assessed using a 5-point response scale (1=not at all, 5=extremely/a great deal). Baseline mean IBS-QOL scores were 44.40 (placebo), 46.46 (plecanatide 3 mg), and 45.30 (plecanatide 6 mg). LS, least squares; SE, standard error.

- IBS-QOL demonstrated statistically significant change in the plecanatide group versus placebo across the 12 weeks (P<0.05 both doses; **Figure 2**), as well as at Week 12 (P<0.01 both doses).

Figure 3. Patient Treatment Satisfaction Scores at Weeks 4, 8, and 12



***P≤0.001 vs placebo. Treatment satisfaction was assessed using a 5-point ordinal score (1=not at all satisfied, 5=very satisfied). Treatment satisfaction was not assessed at baseline. LS, least squares; SE, standard error.

- Patients treated with plecanatide were more likely to report satisfaction with their treatment compared to those receiving placebo (P<0.001 for Weeks 4, 8, and 12) (**Figure 3**).
- When asked the likelihood of continuing the study medication at Week 12, patients treated with plecanatide were more likely to continue compared to those receiving placebo (least squares mean (standard error): 3 mg, 3.7 (0.05); 6 mg, 3.7 (0.05); placebo, 3.4 (0.05); P<0.001, both doses).
  - Treatment continuation was assessed using a 5-point ordinal scale (1=not at all likely, 5=very likely).

DISCUSSION

- Patients with IBS-C who were treated with plecanatide reported statistically significant improvements in their disease severity and QOL throughout 12 weeks of treatment compared to placebo.
- Plecanatide-treated patients experienced significantly improved treatment satisfaction scores and an increased likelihood to continue treatment.

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