In Patients with Irritable Bowel Syndrome-Mixed (IBS-M), a Novel Peppermint Oil Formulation Designed for Site Specific Targeting (PO-SST) in the Small Intestine Improves the 8 Symptoms that Comprise the Total IBS Symptoms Score (TISS)

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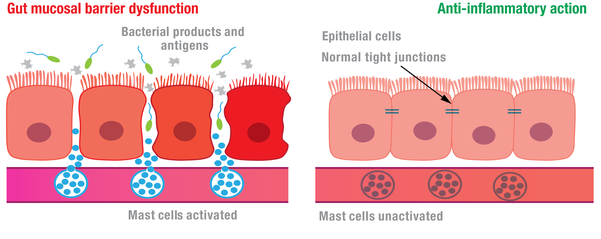
Background

Among adult patients diagnosed with IBS, a sizable proportion suffer from a mixed bowel habit pattern.[1,2] IBS-M sufferers experience a high burden, both in terms of symptoms and quality of life.[3] There is no FDA approved therapy for IBS-M and it remains an unmet medical need. The enteric nervous system regulates gut motility and defecation and can promote a variety of gastrointestinal symptoms and bowel patterns when intestinal homeostasis is disturbed. In IBS, gut mucosal barrier dysfunction has been linked to altered absorption and mucosal inflammation. This provides a biologically plausible basis to test the efficacy of anti-inflammatory compounds targeted to the mucosa and submucosa in patients with IBS. Compounds with anti-inflammatory activity, such as the L-menthol component of peppermint oil (PO), may help restore homeostasis, resulting in IBS symptom improvement. PO-SST consists of ultra-purified, solid-state PO microspheres that are triple-coated to facilitate delivery to the small intestine. In view of the unmet need in IBS-M, an analysis was performed on the effects of PO-SST among patients with IBS-M in the IBSREST* trial. This trial had already shown favorable results in a combined group of IBS-D and IBS-M patients.

Gut barrier dysfunction

- In patients with IBS, the gut mucosal barrier is subjected to reversible, low-grade inflammation[4]
- The nutrients (L-menthol, fiber, and amino acids from protein) in PO-SST help to reduce this inflammation[5] and may help normalize gut mucosal barrier function[6]

Figure 1. Immune activation and epithelial cell adhesion in a dysfunctional gut versus a functional gut.



*IBSREST = Irritable Bowel Syndrome Reduction Evaluation & Safety Trial

Aims

- To add to the current data that PO helps to relieve symptoms of IBS-D and IBS-C, as was shown in an earlier RCT[7]
- To determine whether PO-SST would be a possible treatment option for patients with IBS-M

Methods

Subjects met Rome III criteria for IBS-M, had average daily IBS related abdominal pain of ≥ 4 on a 0-10 scale, and a TISS of ≥ 2 on a 0-4 scale. Subjects were randomly allocated to receive PO-SST (IBgard) 180 mg TID or identical placebo for 4 weeks. Primary analysis was based on the TISS score. Additional assessments included change from baseline in frequency and intensity of individual IBS symptoms.

- The number of IBS-M participants in the PO-SST group was 16
- The number of IBS-M participants in the placebo group was 18

Results

Figure 2. Total IBS symptom score after 4 weeks for patients with IBS-M

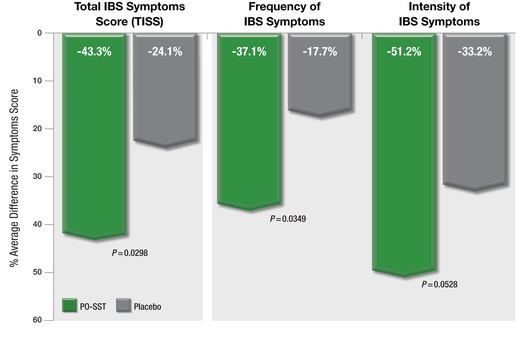


Figure 3. Individual symptom frequency and intensity after 4 weeks for patients with IBS-M

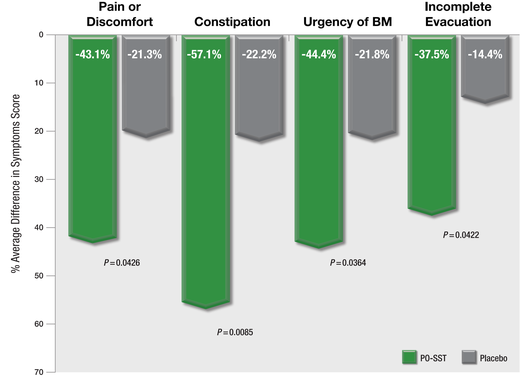


Figure 4. Individual symptom frequency and intensity after 4 weeks for patients with IBS-M

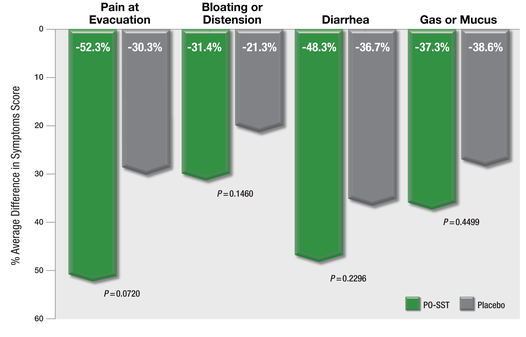
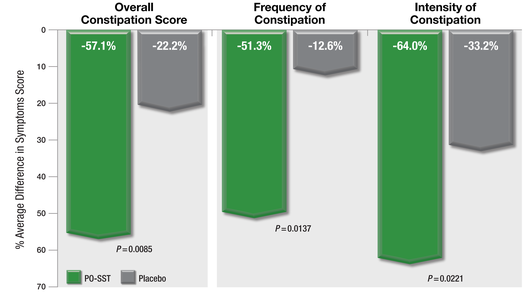


Figure 5. Constipation score, frequency, and intensity in patients with IBS-M



Conclusions

- After 4 weeks of treatment, the PO-SST arm demonstrated statistically significant reduction in the TISS score (P=0.03) and frequency of IBS symptoms (P=0.03) with near-significance (P=0.053) in the intensity of IBS symptoms (Figure 2)
- For all 8 IBS symptoms measured (Figures 3 and 4), the PO-SST arm had a greater reduction, compared to placebo, that was significant for abdominal pain (P=0.04), constipation (P=0.008), urgency (P=0.036), and sense of incomplete evacuation (P=0.04)
- PO-SST demonstrated reduction versus placebo in both constipation (P=0.0085) and diarrhea (P=0.2296) in IBS-M
- PO-SST is an option for IBS-M, a common IBS subtype, where no approved therapies exist

References

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Disclosures

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