

Supplement Sampler

Peppermint Oil

Best Indications

Abdominal pain and spasm related to irritable bowel syndrome



Mechanism of Action

Peppermint oil's major constituent, menthol, blocks Ca^{2+} channels in the gut and decreases smooth muscle spasm. It also has a relaxing effect on the gall bladder and slows orocaecal transit time.

Best Studies

1. Meta-analysis

A review of fiber, antispasmodics, and peppermint oil showed that all three of these agents are more effective than placebo in the treatment of IBS. Four studies compared peppermint oil with placebo in 392 adults. Only 26% of the patients randomized to peppermint oil had persistent symptoms compared to 65% receiving placebo (relative risk [RR] 0.43; 95%CI, 0.32 - 0.59; NNT=2.5). When the three studies with the highest methodological quality were considered, the relative risk of persistent symptoms was of a similar magnitude (RR 0.40; 95%CI 0.29 - 0.55). Three studies reported adverse events in 2.9% of the patients receiving peppermint oil and none in those receiving placebo, but the types of adverse events were not discussed. The numbers needed to treat to prevent one patient from having persistent IBS symptoms were higher for the other agents considered (11 for fiber and 5 for antispasmodics). Only two of the four studies with peppermint oil used Rome II criteria to define the presence of IBS.

Ford AC, Talley NJ, Spiegel BMR, et al. Effect of fibre, antispasmodics, and peppermint oil in the treatment of irritable bowel syndrome: systematic review and meta-analysis. *BMJ*. 2008; 337:a2313

2. Randomized Controlled Trial

A subsequent double blind, randomized controlled trial was conducted in Tehran on 90 patients with IBS who took one enteric-coated capsule containing 187 mg of delayed-release peppermint oil (Colpermin[®]) or placebo three times daily for eight weeks. Their symptoms and quality of life were evaluated at 1, 4 and 8 weeks. An IBS symptoms scale was used in which patients rated the intensity of various symptoms from 0 to 3, with 3 being the worst. Additionally, a standardized quality of life assessment was completed by the researcher at weeks 1 and 8. By week eight, 42.5% of subjects were free from abdominal pain or discomfort in the treatment group compared to 22.2% in the placebo group ($P < 0.001$). Additionally, the intensity of abdominal pain reduced in the Colpermin group from 1.7 to 0.7 ($P < 0.001$). The mean quality of life score on a visual analog scale (VAS) from 0 to 10, with 10 being the worst, improved from 4.1 to 4.7 by week eight in the Colpermin group but worsened from 5.8 to 4.0 in



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the placebo group ($P = 0.016$). After eight weeks, patients on peppermint oil showed a statistically significant improvement in the quality of life domains of bodily pain, general health, social functioning, and role limitations due to emotional problems. The summary quality of life scores, however, were not significantly different. Adverse events were mild, transient, and well tolerated with the most frequent being heartburn, headache, and dizziness. The frequency of adverse events was not significantly different between the groups (58% in Colpermin vs. 52% in placebo, no P-value given). Colpermin did not improve diarrhea, constipation, or bloating. Significant improvement of abdominal pain and discomfort was only noted by week eight. A major limitation was that almost 30% of the subjects were lost to follow-up. Additionally, the initial mean quality of life scores were different in the two groups, which is concerning for concealed allocation.

Merat S, Khalili S, Mostajabi P, et al. The effect of enteric-coated, delayed-release peppermint oil on irritable bowel syndrome. *Dig Dis Sci*. 2009 Jun 9.

Dose

Adult dose: 0.2-0.4 mL (200-400 mg) three times daily in enteric-coated capsules.
Children 8 years of age and older: Usual dose is 0.1-0.2 mL (100-200 mg) three times daily in enteric-coated capsules

Side Effects

Peppermint is generally considered safe. Since it is a smooth muscle relaxer, it can relax muscles of the lower esophagus leading to heartburn and reflux. Taking enteric coated or delayed release forms reduce this side effect. It can also cause nausea, vomiting, and allergic reactions, including flushing, stomatitis and headache.

Cost

#90 (one month supply) of 0.2 ml (~200 mg) enteric coated capsules = \$10.00

Brought to you by Srivani Sridhar, MD, and your colleagues in the UW Department of Family Medicine Integrative Medicine Program.

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