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**File: ■ Peppermint (*Mentha* × *piperita*, Lamiaceae) Oil**
**■ Probiotics**
**■ Functional Gastrointestinal Disorder**

**HC 071521-526**

**Date: August 14, 2015**

**RE: Peppermint Oil and Probiotics Reduce the Symptoms of Adolescent Functional Gastrointestinal Disorder**

Asgarshirazi M, Shariat M, Dalili H. Comparison of the effects of pH-dependent peppermint oil and synbiotic Lactol (*Bacillus coagulans* + fructooligosaccharides) on childhood functional abdominal pain: a randomized placebo-controlled study. *Iran Red Crescent Med J*. April 2015;17(4):e23844. doi: 10.5812/ircmj.17(4)2015.23844.

Functional gastrointestinal disorder (FGID) is characterized by chronic symptoms including abdominal pain, vomiting, aerophagia, constipation, and incontinence. FGID is not caused by structural, metabolic, or neoplastic abnormalities, or by inflammation, and the ultimate cause or causes of FGID are unknown. When FGID is associated with abdominal pain, symptoms include dyspepsia, irritable bowel syndrome, abdominal migraine, and functional abdominal pain syndrome. Treatments for FGID include conventional and complementary medicines and psychoanalysis. Psychoanalysis is commonly used because there is a strong relationship between psychological state and gastrointestinal symptoms. Peppermint (*Mentha* × *piperita*, Lamiaceae) oil inhibits smooth muscle contraction and has been shown to have a topical effect on the ilea and colon. Probiotics containing species of *Bacillus* can improve gastrointestinal health and reduce the severity of gastrointestinal symptoms. The goal of this randomized, controlled study was to measure the effect of peppermint oil or *B. coagulans* on the symptoms of FGID in adolescent patients.

One hundred twenty patients between the ages of 4 and 13 years old were recruited from the Clinic of Pediatric Gastroenterology at the Valiasr Hospital of Imam Khomeini Hospital in Tehran, Iran, from September 2012 to August 2014. Patients were included in the study if they had abdominal pain for more than 2 months that recurred at least once per week. Patients were excluded if they had gastrointestinal or abdominal symptoms other than those associated with FGID with abdominal pain or if they had anemia, fever, weight loss, or a family history of gastrointestinal disorders. The patients were divided randomly and equally into 3 groups. The first group took a placebo of 1 mg folic acid (Jalinous Pharmaceutical; Tehran, Iran) per day. The second group took 3 capsules of Colpermin® (Tillotts Pharma AG; Rheinfelden, Switzerland), containing 187 mg pH-dependent peppermint oil, per day, 30 minutes before meals. The third group

took Lactol® (BioPlus Life Sciences; Bangalore, India) capsules, containing 150 million spores of *B. coagulans* and fructooligosaccharides, after meals. Treatments were administered for 1 month. Patients provided information at the beginning and end of the study about the duration, frequency, and severity of abdominal pain. Patients were also questioned about side effects. Data were analyzed with analysis of variance, repeated measures analysis, Chi-squared tests, and multivariate linear regression.

Twenty-five patients in the placebo group, 34 patients in the Colpermin group, and 29 patients in the Lactol group completed the study. When compared to the beginning of the study, the frequency of pain was significantly lower at the end of the study in all groups (P=0.0001 for Colpermin, P=0.0001 for Lactol, and P=0.008 for placebo). The severity of pain also decreased significantly in all groups from the beginning to the end of the study (P=0.0001 for Colpermin, P=0.0001 for Lactol, and P=0.002 for placebo). The frequency of pain decreased significantly in the Colpermin and Lactol groups (P=0.0001 and P=0.008, respectively), but not in the placebo group, from the beginning to the end of the study. At the end of the study, the frequency of pain was significantly lower in the Colpermin and Lactol groups than in the placebo group (P>0.0001 for both). The severity of pain was significantly lower with Colpermin than with Lactol or placebo at the end of the study (P=0.001 and P=0.013, respectively). The duration of pain was significantly lower in the Colpermin group than in the Lactol or placebo groups at the end of the study (P=0.0001 and P=0.04, respectively). Lastly, Lactol significantly reduced the duration of pain when compared to the placebo (P=0.012). No side effects were reported.

In adolescent patients, Colpermin and Lactol reduced the pain associated with FGID more than the placebo treatment did. In addition, Colpermin reduced the duration and severity of pain to a greater extent than Lactol did. Both treatments were well tolerated by the patients. Previous studies have found that peppermint oil can reduce the symptoms of irritable bowel syndrome. This effect is thought to be mediated through the reduction in smooth muscle contractions of the intestine. A number of other studies have also found that probiotics, such as Lactol, can improve gastrointestinal symptoms. The study was limited by the lack of blinding of researchers and patients. The authors suggest further studies to measure the effect of both peppermint oil and probiotics on gastrointestinal biomarkers and inflammation.

*—Cheryl McCutchan, PhD*

Referenced article can be accessed at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4443394/.