Research Journal of Medical Sciences
[E-ISSN: 3078-2481 | P-ISSN: 3078-2473]
Available on: https://rjmsonline.com/
Volume: 01 | Issue: 01, 2019

Research Article *Open Access*

HERBAL MEDICINE FOR IRRITABLE BOWEL SYNDROME

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Source of support: Nil.
Conflict of interest: None

Received: 25-07-2019
Accepted: 07-07-2019
Available online: 10-09-2019

Abstract

Inflammatory bowel disease (IBD) is a chronic disease of the intestines. IBD, including Crohn disease and ulcerative colitis, are characterized by a complex interplay of environmental, genetic, and immunological variables. Inflammatory bowel disease (IBD) is caused by the interplay of a person's immune system with precipitating environmental variables, which in people with a genetic predisposition causes an abnormally persistent inflammatory response. The pattern and severity of dietary deficits linked to IBD vary on the level, duration, and activity of the inflammation. However, there is little evidence that dietary changes can modify the course of IBD, and there are no evidence-based dietary recommendations for IBD patients. As a result, patients look to non-medical sources for nutritional advice, such as patient support groups and unreliable websites. The purpose of this review is to discover patient-specific dietary recommendations for IBD and to evaluate their nutritional value. We examine patient-specific dietary data for IBD from popular defined diets and structured internet searches. Dietary advice for specific patients focuses on.

Key Words: *Inflammatory Bowel Disease (IBD), Immune System; Nutrition.*

INTRODUCTION

With a global prevalence of 11.2%, irritable bowel syndrome (IBS) is a functional gastrointestinal illness based on symptoms.[1] The Rome IV criteria state that an IBS diagnosis is made based of recurrent abdominal pain following a bowel movement or in connection with a shift in the frequency or composition of stools. The symptoms must have started at least once a week and lasted for at least six months in the preceding three months.[2] Although the exact etiology of IBS is still unknown, it may involve visceral hypersensitivity, inflammation, microbiomes, food sensitivity, dysregulation of gut motility, genetics, and psychosocial dysfunction.[3] The main course of treatment is changing one's lifestyle and symptom control. For instance, it is advised to exercise and eat a diet low in fermentable oligosaccharides, disaccharides, monosaccharides, and polyols. IBS can be effectively treated with laxatives or loperamide, followed by bile acid sequestrants and 5-hydroxytryptamine 3 antagonists, depending on the symptoms (constipation-dominant, diarrhea-dominant, or mixed).[3] Many patients who are treated with these medications are worried about possible side effects and do not notice any appreciable changes in their quality of life or IBS symptoms. As a result, numerous IBS patients wish to experiment with complementary and alternative therapies.[4] Due to their safety, herbal medicines (HMs) have been utilized for a long time in Asian countries. The Cochrane library, concluded in 2006 that some HMs might help with IBS symptoms.[5] The substances that make up HMs can act on many sites and potentially have synergistic effects; HMs that have will be the best option because it has been used for centuries to treat IBS-related symptoms with positive results.[6]

Many systematic reviews (SRs) have been conducted on the efficiency of HMs on IBS [7, 8], but no comprehensive summary exists that methodically synthesizes the SRs and assesses the caliber of evidence. Thus, this overview's goal is to assess the data that SRs have provided regarding the safety and effectiveness of HMs in the treatment of IBS. The presence of abdominal pain or discomfort that has persisted for at least a short period of time and/or is linked to a change in the frequency or consistency of stools is now included in the updated Rome II guidelines for the diagnosis of irritable bowel syndrome. 12 weeks in the previous 12 months, either continuous or nonconsecutive, which is eased by defecat. [9] The pathophysiology of irritable bowel syndrome is still not well understood, while several different processes may be involved in the emergence of symptoms.[10] There is currently no treatment for this illness; instead, symptom alleviation is the main goal of available therapies.[11] A number of currently used therapies have had their effectiveness studied in placebo-controlled trials. Nevertheless, only a tiny percentage of patients experience adequate symptom alleviation from these therapy.[12,13] As a result, several attempts have been made to find and create novel, efficient treatments. In several nations, people with irritable bowel syndrome have been treated using herbal remedies. Nevertheless, there is a dearth of controlled evidence demonstrating these treatments' effectiveness.

Statement of problem

Although IBS is common, there is currently no reliable conventional treatment for it. As a result, patients may find it interesting to try herbal medication. (CAM) is widely used by patients, particularly those who have a chronic condition for which there are few other therapy alternatives [57]. "A group of diverse medical and healthcare systems, practices, or products that are not generally considered part of conventional medicine" is how complementary and alternative medicine (CAM) is defined [57]. Using medicinal plants to treat or prevent clinical problems is known as herbal medicine [59]. Throughout the world, herbal medicine is widely employed as an alternative form of treatment. The most popular CAM for IBS patients is herbal medicine. Around the world, more and more IBS patients are starting to receive complementary and alternative medications. Herbal remedies are the most commonly utilized, accounting for 43% of cases.

Treatment

Fibre

The first piece of advise given to people with IBS is frequently to increase their intake of fiber through food or supplements.[14] The first version of this intervention was based on epidemiologic data, and it was implemented after a clinical trial showed advantages for 26 individuals who were afflicted.[15] The research is conflicting, but it appears that soluble fiber—as opposed to insoluble fiber—might be beneficial.

Typically, psyllium—the ground seed coat of plantsago members—is used to deliver soluble fiber. Fruits, vegetables, and whole grains also contain it. It gels in water and is digested by colonic bacteria, producing compounds that may shorten the intracolonic pressure and gut transit time. Wheat bran and maize bran include insoluble fiber, which doesn't change much but holds onto water to make stools bulkier and move through the digestive system faster.

Two systematic reviews that looked at the use of fiber in the management of IBS were located. There was no discernible impact on abdominal pain (relative risk [RR] 1.22, 95% confidence interval [CI] 0.86 to 1.73), global assessment (RR 1.09, 95% CI 0.78 to 1.50), or symptom scores (RR 0.93, 95% CI 0.56 to 1.54), according to a Cochrane review of 11 randomized controlled trials (RCTs) restricted to bulking agents.[16] An earlier systematic review looked at the differences between soluble and insoluble fiber (9 RCTs and 8 RCTs).[17] Overall, the studies showed no reduction in abdominal pain but improvement in all IBS symptoms (RR 1.33, 95% CI 1.19 to 1.50), particularly in IBS-related constipation (RR 1.56, 95% CI 1.21 to 2.02). When examined separately, soluble fibre—particularly from Plantagoisphagula—fared better (RR 1.55, 95% CI 1.35 to 1.78) than insoluble fibre, which had no effect (RR 0.89, 95% CI 0.72 to 1.11). In summary, there is good evidence that soluble but not insoluble fibre improves constipation and global IBS symptoms. There is less evidence to support its effect on abdominal pain.

There are various limitations to these findings. The majority of the trials were carried out in referral centers with patient groups that weren't like those found in regular primary care.[18] Furthermore, the majority of researchers did not check for lactose intolerance, celiac disease (gluten sensitivity), or small intestine bacterial overgrowth (SIBO) in their patients. The latter diagnosis is especially pertinent to wheat bran trials, wherein some participants have experienced worsening symptoms.31.32 Numerous IBS clinical trials are severely constrained by the variability of the research participants.

Peppermint oil

For thousands of years, people have employed an oil extract from the peppermint plant (Menthapiperita Linnaeus) to soothe upset stomachs. It appears to relax intestinal smooth muscle cells by interfering with calcium channels.[19] Short-term studies indicate that taking three to six enteric-coated capsules with 0.2 to 0.4 mL of peppermint oil per day helps relieve the symptoms of irritable bowel syndrome.[20-22]Two meta-analyses provide support for these findings. The first was founded on five trials that demonstrated efficacy, but the results were compromised by inconsistent symptom scores and diagnostic criteria. Thirteen A different analysis of four short trials revealed that peppermint oil improved overall symptoms (odds ratio 2.7, 95% CI 1.6 to 4.8).[23] A recent investigation involving 110 patients who underwent screening for SIBO, lactose intolerance, and celiac disease supports these findings.[20] Following a 4-week regimen of 4 capsules

daily, symptoms were better in 75% of patients receiving peppermint oil compared to 38% of patients taking a placebo (P <.01). The results can't be applied to everyone because of the stringent inclusion criteria, but peppermint oil may be worth a try for any patient experiencing IBS symptoms.

Abdominal discomfort is one of the IBS symptoms that peppermint oil seems to reduce. Reminding patients not to chew the enteric-coated capsules—which are designed to prevent gastroesophageal reflux due to lower esophageal sphincter relaxation—is important. There have been isolated reports of perianal burning and nausea as side effects.[24,25] There is no proof that peppermint oil is safe to use while pregnant.

Herbal formulas

Traditional medical systems frequently combine multiple plants to obtain a specific therapeutic effect. Herbalists argue that such systems might give higher efficacy than single-herb therapy while limiting negative effects.[26]

One such formula that practitioners of traditional Chinese medicine (TCM) frequently utilize is Tong xieyao fang (TXYF). Twelve Chinese studies that looked at this formula's application in IBS were included in a meta-analysis of various iterations.[TXYF was found to be more effective than a placebo (RR 1.35, 95% CI 1.21 to 1.50), although the authors issued a warning due to the heterogeneity, poor quality, and inconsistent nature of the trials themselves. Out of three trials published in English-language literature that used various TCM herbal formulae containing the components in TXYF, two showed efficacy [27,28] whereas the other did not show any effect.[29]

For many years, a Tibetan herbal digestive solution called Padma Lax has been produced and utilized in Europe. In one study, 61 IBS patients with a history of constipation who were also tested for lactose intolerance and celiac disease showed worldwide improvement in 76% of Padma Lax users compared to 31% of placebo users.[30]

Several widely used herbal digestive aids are included in two herbal preparations called STW 5 and STW 5-II. In a recent trial, STW 5, STW 5–II, a single-plant extract, or a placebo was given to 208 IBS patients.46 Patients who received the STW formulae showed a significant improvement in their pain and symptom levels (P <.001). In a recent Cochrane systematic review, specific formulations of TXYF, Padma Lax, and STW 5 were found to alleviate overall symptoms ofIBS when compared to placebo.[31]

Herbal medicine safety is a common source of concern. The results of a systematic evaluation of 22 RCTs using herbal remedies to treat IBS symptoms showed that 2.97% of patients (95% CI 2.04% to 3.90%) experienced adverse effects, noneof which were deemed serious.[32] However, the majority of these trials were low-quality and may have underreported adverse events, the authors said. When recommending these therapies to patients, clinicians must to consider both their possible advantages and disadvantages.

Probiotics

Probiotics are live organisms that help the host's health when consumed in sufficient quantities.[33] Nobel laureate Elie Metchnikoff, who connected the health of Balkan peasants to their consumption of kefir—a fermented milk beverage with a thin, yogurt-like consistency—popularized their therapeutic usage in the late 19th century. Fermented foods high in probiotics, like tempeh, kefir, miso, yogurt, and sauerkraut, have been enjoyed for millennia.

It appears that probiotics function in a number of ways that are still unclear. By generating advantageous short-chain fatty acids and deconjugating bile acids, they modify the intraluminal milieu and inhibit the growth of pathogenic bacteria through direct competition. They also have strong anti-inflammatory properties, influencing the expression of cytokines through interactions with lymphoid tissue connected to the gut. Additionally, this immunomodulatory impact lessens the visceral hypersensitivity that is a feature of IBS.[33,34]

A recent meta-analysis of 23 trials involving 1404 patients revealed improvement in general IBS symptoms (RR 0.77, 95% CI 0.62 to 0.94) and stomach pain (RR 0.78, 95% CI 0.69 to 0.88) compared with placebo.[35] The variety of organisms, strains, and dosages employed slightly restricts the implications of this encouraging discovery. Although Lactobacillus or Bifidobacterium strains are more common in studies and clinical settings, there is not enough data to recommend one strain over another.

It is important to motivate patients to eat more of the above-mentioned foods high in probiotics. Supplementing with powders or capsules may be helpful, although side effects like bloating and gas are rare and typically temporary. It is challenging to provide patients product recommendations because commercial probiotics differ greatly in terms of the strains they utilize, their quality, and their capacity to supply the colon with a sufficient amount of live bacteria. The most typical oral doses are between 10 and 100 billion bacteria each day.

Aloe Vera

The clear gel found in aloe leaves is most frequently employed for therapeutic purposes [36]. In IBS, especially the constipation-predominant form, aloe is frequently utilized [37]. Aloe vera in IBS was assessed in a cross-over, double-blind, randomized, placebo-controlled research. Statistical study of 47 individuals indicated no difference between the placebo and aloe vera treatment in quality of life in IBS [38]. In an earlier trial, 35 men and women were randomly assigned to receive either a placebo (placebo) or capsules containing celandine, aloe vera, and psyllium for a period of 28 days. They stated that neither group's stomach pain decreased, but that making herbal medicine worked well as a laxative to treat constipation [39]. In another investigation by Davis et al. aloe vera demonstrated no therapeutic impact in IBS symptoms [40]. In a clinical study conducted in Iran by Khedmat et al., 33 patients with refractory IBS that was mostly caused by constipation were given aloe vera (30 ml twice daily) for eight weeks. Pain/discomfort ($p < 0.001$) and flatulence ($p < 0.001$) decreased, but there was no significant change in stool consistency, urgency, or frequency of defecation ($p > 0.5$ overall) [41]. To sum up, aloe vera may help manage the symptoms of IBS. More placebo-controlled trials including a greater number of patients are required.

Artichoke

According to several publications, artichoke leaf extract (ALE) can help treat IBS. A 6-week post-marketing supervision study with 279 IBS patients was conducted on ALE. Analysis of the data showed significant reductions in the intensity of IBS symptoms. 96% of patients reported that ALE worked as well or better than other therapy for their problems, and the report clearly demonstrates that patients tolerated the medication well [42]. In another research, the effects of ALE in 208 IBS patients with dyspepsia were studied. Analysis of the data after the intervention period revealed a substantial improvement in the incidence of IBS of 26.4% ($p < 0.001$). The subset's overall quality-of-life (QOL) score (20%) has significantly improved as a result of treatment [43]. Based on the active metabolites, Emendörfer F. et al.'s study [44] reported the antispasmodic properties of cynaropicrin, a sesquiterpene lactone derived from Cynarascolymus, in the management of IBS. According to this research, ALE has a good chance of easing the symptoms of IBS.

Curcuma longa

Iranian and Chinese traditional medicine have long utilized turmeric (Curcuma longa) to treat distension, bloating, and stomach problems. A partially blinded, randomized, two-dose pilot research was conducted on the symptomology of IBS patients in otherwise healthy adults. The patients' symptoms were monitored for eight weeks. After receiving treatment, almost two thirds of the individuals indicated that their symptoms had improved; there were no discernible group differences [45]. Curcumin contains antioxidant and anti-inflammatory properties, according to Miquel J. et al. [46]. In Gilani AH, et al.'s review paper The research indicated that the inhibitory effects of turmeric extract (curcumin) in hyperactive states of the gut and airways are predominantly mediated through a calcium channel blocking. This is the reported scientific basis for the medical use of turmeric in gastrointestinal illnesses, including IBS. Curcuma's antimicrobial, anti-inflammatory, and spasmolytic properties may account for some of its effectiveness in treating IBS [47].

Mentha Piperita (MP)

Persian traditional medicine has employed menthapiperita for thousands of years. There is more evidence than any other herbal remedies to support the use of MP in gastrointestinal disorders [48]. Enteric-coated peppermint oil, often known as MP, has been proven to be effective in treating irritable bowel syndrome (IBS) in several controlled trials. Peppermint oil was compared to a placebo in a randomized double-blind, placebo-controlled clinical study involving 110 IBS patients. The peppermint oil was administered three to four times a day, 15 to 30 minutes before meals, for one month. Compared to the placebo group, there was a substantial increase in symptom improvements ($p < 0.05$). Peppermint oil was therefore successful and well tolerated in this research [49] In a different clinical research conducted by Cappello et al. (2007), 57 IBS patients received a four-week double-blind treatment of peppermint oil (two enteric-coated capsules twice daily) or a placebo. When compared to the placebo group, they discovered that peppermint oil significantly decreased the overall score for IBS symptoms ($p<0.01$). They proposed that peppermint oil is safe and beneficial for IBS patients when taken for four weeks [50]. In a randomized double-blind placebo-controlled study by Merat et al. In a 2004 study involving ninety IBS patients, the enteric-coated, delayed-release peppermint oil (Colpermin) capsule was given to the patients three times a day for eight weeks. The results showed that Colpermin significantly improved quality of life ($p<0.001$) and significantly decreased the severity of abdominal pain when compared to the control group. No appreciable negative response was observed [51]. Khanna et al. found that peppermint oil was useful in reducing the symptoms of IBS after analyzing nine trials that assessed the safety and effectiveness of enteric-coated peppermint oil capsules in 726 people with IBS (5 studies, 392 patients) In 5 investigations involving 357 participants, abdominal discomfort was particularly significant. The main side effects of peppermint oil were noted to be heartburn, although these were mild and temporary [52]. Similar findings from 16 clinical trials examining enteric-coated peppermint oil (PO) in children with IBS were noted in another review study by Grigoleit HG, et al. However, the average response rates in terms of "overall success" are 58% (range 39–79%) for peppermint oil and 29% (range 10–52%) for placebo. The majority of reported adverse effects were moderate and fleeting, although they were highly specific [53]. The potential pharm codynamic effects of peppermint oil for irritable bowel syndrome (IBS) include: 1) lowering stomach motility; 2) antispasmodic action on smooth muscles as a result of menthol's disruption of calcium's passage across cell membranes; and 3) anti-inflammatory and antimicrobial properties in the small intestine [54–56].Colpermin is a safe and useful therapeutic option for treating IBS-related stomach pain or discomfort, according to the research.

Carmint

Extracts of Melissa officinalis, coriandrumsativum, and menthaspicata are found in mint, an Iranian herbal medicine. The frequency and intensity of abdominal pain were considerably decreased in the carmint group compared to the placebo group in an RCT involving 32 IBS patients [57]. Carminative, sedative, and antispasmodic properties are all present in its pharmacological actions [58, 59].

Conclusion

Patients with IBS are now frequently treated with complementary and alternative therapies, particularly herbal supplements. This paper assessed the potential therapeutic effects of several herbal remedies for irritable bowel syndrome. *Menthapiperita* is a useful herb for managing IBS-related stomach pain. In the treatment of irritable bowel syndrome (IBS), *aloe vera*, *curcuma longa*, *fumaria officinalis*, and *hypericumper foratum* demonstrated various mechanisms, including prosecretory activity, anti-inflammatory activity, and promoting gastrointestinal motility. Compound treatments comprising many herbs are thought to be more effective than single items, based on various characteristics that influence the pathophysiology of IBS. Nonetheless, additional clinical trials are needed to assess the impact of herbal remedies on IBS. There is enough data to contemplate the use of CBT and hypnotherapy in suitable patients. They are also sensible treatment options. Constipation brought on by IBS is lessened by soluble fiber, but not by stomach pain.

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