



Ethnopharmacological communication

Treatment of irritable bowel syndrome using a selected herbal combination of iraqi folk medicines



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ABSTRACT

Ethnopharmacological relevance: *Mentha longifolia*, *Cyperus rotundus* and *Zingiber officinale* are widely used in Iraqi traditional medicine for the treatment of multiple gastrointestinal diseases.

The aim of this study was to examine the effectiveness of a combination of three herbal agents that are widely used in folk medicine in Iraq for the treatment of patients with irritable bowel syndrome (IBS). **Materials and methods:** A prospective randomised clinical study was carried out on 40 patients of both sexes between 25 and 60 years of age who had been diagnosed with IBS for 5–10 years. The patients were allocated to one of two groups, each consisting of 20 patients. Group A was treated with mebeverine, and Group B was treated with a capsule containing a combination of the following three herbs prepared as fine powders: *Mentha longifolia*, *Cyperus rotundus* and *Zingiber officinale*. IBS symptoms were assessed before and after 8 weeks of treatment.

Results: Treatment of IBS patients with the herbal combination resulted in improvements in all of their IBS symptoms after 8 weeks, as revealed by increase in their individual symptom scores and in their mean total improvement percentages. These results were comparable to those produced by the standard agent mebeverine.

Conclusion: Patients with IBS showed significant improvements in their IBS symptoms after 8-weeks of treatment with the herbal combination and did not report any adverse effects during their treatment. These results support the efficacy and safety of the herbal combination for the treatment of IBS.

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1. Introduction

Irritable bowel syndrome (IBS) is the most common functional gastrointestinal disorder. It is characterised by chronic abdominal pain or discomfort and altered bowel function. The symptom-based Rome III criteria for the diagnosis of IBS include recurrent abdominal pain or discomfort for, at least 3 days per month in the past 3 months, and at least two of the following: improvement of pain with defecation, onset of pain that is associated with a change in the frequency of stool, or onset of pain that is associated with a change in the form (appearance) of stool (Longstreth et al., 2006).

With an estimated prevalence of 14–24% in women and 5–19% in men, IBS is a common reason for seeking medical care (Andrews et al., 2005). It accounts for 12% of visits to primary care physicians and 28% of visits to gastroenterologists (Dean et al., 2005). In addition, IBS is associated with significantly impaired quality of life and significantly increased economic costs (Chang, 2004).

Despite recent advances in the treatment of IBS, the pathophysiology of IBS is incompletely understood (Mathew and Bhatia, 2009). Alterations in neurohormonal function, psychological factors,

bacterial overgrowth, genetic factors, changes in gut motility, visceral hypersensitivity, and immune system changes are currently believed to influence the pathogenesis of IBS (Longstreth et al., 2005). Patients can be divided into three IBS subgroups: those with constipation, those with diarrhoea, and those with alternating constipation and diarrhoea (Mearin et al., 2003).

Because of its complex pathogenesis, a drug that treats all of the underlying abnormalities of IBS has not been identified. The use of dietary fibres, laxatives, antidiarrheal agents, and antispasmodic agents as first line therapies has been limited owing to their marginal therapeutic benefits, and side effects. Antidepressants have proved to be efficacious for improving symptoms and psychological well-being. However, their use has been limited by side effects and poor acceptance by patients. Modulators of serotonin receptors have recently been developed and initially showed promising therapeutic effects (Lacy et al., 2009). Over the past 2 decades, there has been a focus on smooth muscle relaxants (commonly called antispasmodics) for the treatment of IBS. Mebeverine is a commonly prescribed drug that has been used successfully for many years for the management of IBS. Mebeverine is a musculotropic agent that has antispasmodic activity and regulatory effects on bowel function (Talley, 2001). During oral administration of doses of 135–270 mg three times daily, mebeverine does not cause anticholinergic side effects such as dry mouth, blurred vision,

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or impaired micturition. The incidence of side effects caused by mebeverine is no higher than that produced by treatment with a placebo (Poynard et al., 1994).

Because of the lack of a cure for IBS and the adverse effects of medications used to treat this disorder, many patients consider conventional IBS treatment to be disappointing and often turn to complementary therapies. The choice to use natural rather than chemical therapies is appealing because many patients assume that natural products are safe and that they do not cause adverse effects. Additionally, because technology has supplanted bedside manner, the deteriorating relationship between patients and physicians also encourage the use of complementary and alternative medicine, giving patients a greater sense of autonomy in their care. Because of the substantial impact of complementary and alternative medicine on both individual patients and society, it is crucial for health care providers to gain a better understanding of the potential benefits and pitfalls of complementary and alternative medicine (Tillisch, 2006; Stake-Nilsson et al., 2012).

Herbal medicines have been used in Asia for a long time, and, an increasing number of IBS patients in the West are beginning to take complementary and alternative medicines, most frequently herbal remedies (Magge and Lembo, 2011). One important herbal agent that is widely used by IBS patients is peppermint oil, an oil extract of the *Mentha piperita* Linnaeus plant that has been used to treat upset stomach for thousands of years. Peppermint oil has been shown to relax intestinal smooth muscle cells by inhibiting calcium channels (Kligler and Chaudhary, 2007). Short term trials have suggested that the daily use of 3–6 enteric coated capsules containing 0.2–0.4 mL of peppermint oil improved IBS symptoms (Cappello et al., 2007). The major advantage of peppermint oil for the treatment of IBS is its safety profile; common side effects include heart-burn and a perianal burning sensation (Kline et al., 2001). The active ingredient in peppermint oil is menthol (C₁₀H₂₀O) a terpenoid that is found in the essential oils of members of the mint family (*Mentha* spp.), including *Mentha piperita* and *Mentha longifolia* (Al-Bayati, 2009). *Mentha longifolia* is an extremely variable species with a widespread distribution in Iraq. In Iraqi folk medicine, the leaves and stems of *Mentha longifolia* species are frequently used in herbal teas or as additives in spice mixtures. As a folk remedy *Mentha longifolia* is used to treat nausea, and flatulence, and it is used as an anti-inflammatory, carminative, analgesic, and antispasmodic agent (Al-Rawi and Chakravarty, 1988).

Cyperus rotundus is another traditional herbal medicine that grows naturally in Iraq. It is widely used as an analgesic, sedative, and antispasmodic agent and for the treatment of stomach disorders and diarrhoea (Zhu et al., 1997). The tuber part of *Cyperus rotundus* is widely used as a folk medicine, especially by older women, for its carminative, antispasmodic, analgesic anti-

diarrheal properties. Previous phytochemical studies have shown that the major chemical components of this herb are essential oils, flavonoids, terpenoids, and mono- and sesquiterpenes (Nima et al., 2008).

Ginger was also used as an herbal agent in this study. Ginger (*Zingiber officinale*, Zingiberaceae) has several ethnomedicinal and nutritional attributes, and is used extensively throughout the world as a spice, a flavouring agent and an herbal remedy (Gaurav et al., 2011). In Iraq, this herb is imported from other countries and is commonly used as a food additive and a spice. It is also used as a treatment for several different conditions, particularly those associated with digestive problems such as dyspepsia, flatulence, nausea and abdominal pain. Only recently has this plant been cultivated in Iraq (AL-Bayatly et al., 2006).

Choosing the appropriate outcome measures and therapeutic regimens for complementary and alternative medicine studies requires a good understanding of the expected role of a given therapy in the treatment of a gastrointestinal disorder (Tillisch, 2006). For example for the treatment of IBS, administration of peppermint may be useful for its muscle relaxant effect. *Cyperus rotundus* administration may be useful for its antimicrobial effect, and administration of ginger may be useful for its antifatulent effect. In this way, the multiple manifestations of IBS can be specifically targeted using different herbal agents. The aim of this study was to examine the effectiveness of a combination of three herbal agents, *Mentha longifolia*, *Cyperus rotundus* and *Zingiber officinale*, in their powder form, for the treatment of patients with IBS.

2. Materials and methods

This prospective randomised clinical study was carried out on 40 patients of both sexes between 25 and 60 years of age who had been diagnosed with IBS for 5–10 years, and who had visited the outpatient clinic at the Al-Kindy College of Medicine during a 6-month period. The study followed the guidelines outlined in the Declarations of Helsinki and Tokyo for the ethical use of human subject in research and was approved by the scientific and ethical committees at Al-Kindy College of Medicine. All patients provided informed consent. The patients that participated in this study were allocated to one of two groups:

1. Group A included 20 patients of both sexes treated with tablets containing 135 mg of mebeverine three times daily for 8 weeks. Mebeverine (trade name Colospasmin Forte, 135 mg tablet) was obtained from EIPICO, Egypt.
2. Group B included 20 patients of both sexes treated with a capsule containing a combination of the following three herbs

Table 1

Effects of treatment with 135 mg of mebeverine (Group A, $n=20$), three times daily, on the distribution of symptom severity in IBS patients.

Symptom	Mild		Moderate		Severe	
	Pre	Post	Pre	Post	Pre	Post
Pain severity	5 (25%)	1 (5%)	9 (45%)	4 (20%)	6 (30%)	1 (5%)
Pain frequency	4 (20%)	2 (10%)	8 (40%)	3 (15%)	8 (40%)	1 (5%)
Stool frequency	7 (35%)	5 (1%)	8 (40%)	3 (15%)	5 (25%)	0 (0%)
Stool consistency	6 (30%)	4 (20%)	7 (35%)	2 (10%)	7 (35%)	1 (5%)
Abdominal distension	5 (25%)	3 (15%)	9 (45%)	2 (10%)	6 (30%)	0 (0%)
Incomplete evacuation	5 (25%)	4 (20%)	8 (40%)	1 (5%)	7 (35%)	0 (0%)
Urgency	4 (20%)	3 (15%)	7 (35%)	3 (15%)	9 (45%)	1 (5%)
Passing of mucus	6 (30%)	4 (20%)	8 (40%)	3 (15%)	6 (30%)	1 (5%)
Mean	5.25 (26.25%)	3.25 (16.25%) ^a	8 (40%)	2.63 (13.12%) ^a	6.75 (33.75%)	0.625 (3.13%) ^a

Results represent a percentage of the total number of IBS patients.

^a Denotes a statistically significant change ($P \leq 0.05$) in symptom severity.

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