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Optimising Treatment Strategies for Irritable Bowel Syndrome

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Abstract **Original Research Article**

To evaluate therapies available for the treatment of irritable bowel syndrome, and provide consensus recommendations for their use, a total of 51 double-blind clinical trials using bulking agents, prokinetics, antispasmodics, alosetron, tegaserod and antidepressants were selected. This study took place at the Department of Medicine at Medical College for Women and Hospital, Ibn Sina Diagnostic and Consultation Centre, Uttara, Dhaka, Bangladesh with symptoms of IBS, from June 2021 to July 2023. This study recommends the use of tegaserod for women with irritable bowel syndrome with constipation and alosetron for women with severe irritable bowel syndrome with diarrhoea. Antidepressants can be beneficial for irritable bowel syndrome with diarrhoea patients with severe symptoms. Loperamide can be recommended in painless diarrhoea. Evidence is weak to recommend the use of bulking agents in the treatment of irritable bowel syndrome with constipation.

Keywords: Irritable bowel syndrome, diarrhoea, constipation, agents, probiotics.

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INTRODUCTION

Irritable bowel syndrome (IBS) is a common gastrointestinal (GI) disorder characterized by recurring abdominal pain or discomfort, bloating, and irregular stool patterns, which can include constipation, diarrhea, or a combination of both. IBS can be classified based on the primary bowel symptom experienced: IBS with constipation (IBS-C), IBS with diarrhea (IBS-D), and IBS with alternating symptoms of constipation and diarrhoea (IBS-A). It is estimated that IBS affects 10–15% of the Western population, although the prevalence may vary depending on the criteria used for diagnosis [1]. Like many other poorly understood disorders, IBS is considered a multifactorial condition [28]. Symptoms and clinical outcomes of irritable bowel syndrome (IBS) can be influenced by several interrelated factors, including genetics [2-4], early life experiences [5], and post-inflammatory changes following gastrointestinal infections [6], psychosocial elements [7], and dietary habits [8]. Despite relatively low rates of healthcare-seeking behaviour among patients, IBS accounts for 28% of gastroenterology consultations [9] and 12% of primary care cases [10]. The syndrome has a significant economic impact, affecting healthcare utilization, workplace absenteeism, and the overall quality of life for patients who do not seek medical care. Therefore, finding effective treatments to address the various symptoms of IBS is of great interest and importance. The aim of this study is to evaluate the Treatment Strategies for Irritable Bowel Syndrome in Bangladesh. The ethical clearance and written consent paper were assured before the study.

METHODOLOGY

This retrospective study included a total of 50 patients, who were of age 18 years to 60 years old. These patients visited the Department of Medicine at Medical College for Women and Hospital, Ibn Sina Diagnostic and Consultation Centre, Uttara, Dhaka, Bangladesh with symptoms of IBS, from June 2021 to July 2023. The present study included all adult patients who had undergone elective surgery during the study period. Patients who were critically ill and unable to communicate and postoperative admission in the intensive care unit were excluded from this study.

- *Inclusion criteria:* The current study included all adult patients who had symptoms of IBS and who were under treatment for IBS during the study period.

- *Exclusion criteria:* Patients who were critically ill, unable to communicate, or suffering from ulcers were excluded of this study.

The Medical College for Women and Hospital, Ibn Sina Diagnostic and Consultation Centre Institutional Review Board approved this study. Well-informed written consents were received before starting the study.

RESULT

Table-1: Characteristics of irritable bowel syndrome (IBS)

Characteristics	Symptom severity		
	Mild	Moderate	Severe
Symptom frequency	Occasional	Frequent	Daily/persistent
Psychological difficulties	Not typical	May be present	Typical
Health care centres consulted	Primary	Secondary	Tertiary
Rates of health care use	Low	Moderate	High

Table-2: Efficacy of agents and drugs used in the treatment of IBS

Agents and Drugs	Grades of recommendation
Stimulant laxatives	D
Bulking agents	C
Loperamide	C/A*
Smooth muscle relaxants	C
Peppermint oil	D
Prokinetic agents	D
Antidepressants	B
Benzodiazepines	D
Tegaserod	A**
Alosetron	A***

A, consistent results from high-quality randomized-controlled trials (RCT); B, inconsistent results from high-quality RCTs or consistent results from inadequately controlled clinical trials; C, conflicting results from poorly controlled clinical trials or poor-quality cohort studies; D, unfounded expert opinion or clinical studies of very low quality.
*In painless diarrhoea.
**In women with IBS with constipation (IBS-C)
***In women with severe IBS with diarrhoea (IBS-D) who failed to respond to conventional therapy

DISCUSSION

The current study included adult patients of IBS and researched on their outcomes after the treatment of IBS ia drugs and agents. Up to 82% of individuals with irritable bowel syndrome (IBS) who experience constipation have delayed small bowel transit, colonic transit, or orocecal transit [11-14]. The most common changes in small bowel motility among IBS patients with constipation include a decreased duration of the migrating motor complex (MMC) and a reduced amplitude of clustered contractions. In terms of colonic motility, the most frequent alterations include a decreased number of high-amplitude propagated contractions (HAPC) and an increased number of colonic phasic contractions [15-17]. An acceleration of colonic or coronal transit has been suggested as a mechanism by which bulking agents help relieve constipation. Some studies have examined the effects of fiber on gastrointestinal transit, but the results are inconsistent. While some research indicates that fiber positively influences colonic contractile activity, other studies do not support this finding [18-20]. Additionally, a meta-analysis reported a benefit of fiber treatment in alleviating overall IBS symptoms (relative risk: 1.33, 95% CI: 1.2–1.5) [21]. However, when IBS symptoms were analyzed individually, fiber was found to be ineffective in relieving abdominal pain in patients with IBS. In fact, supplemental bran may even be less effective than a normal diet and can exacerbate symptoms such as pain and bloating [20]. Abnormal bacterial fermentation of fibre [22], the absence of normal methanogenic flora [23] and disturbed gas handling [24] may induce bloating and abdominal pain during treatment with bulking agents. For these reasons, the use of bulking agents in IBS cannot be recommended except as adjuvants as shown in Table-2.

The colonic motility patterns observed in individuals with diarrhea-predominant irritable bowel syndrome (IBS-D) include an increased number of high-amplitude propagated contractions (HAPC) and a decrease in 'long spike' bursts of activity. Some studies show that these changes are linked to increased transit time in the small bowel and colon, while other studies do not support this finding. Loperamide, the most well-known antidiarrheal medication, is a synthetic opioid that reduces intestinal transit time. It also enhances the absorption of water and ions in the intestines and

increases the resting tone of the anal sphincter. These effects likely explain the improvements in diarrhea, urgency, and fecal soiling seen in IBS-D patients. Strong evidence supports the antidiarrheal efficacy of loperamide in this population; studies consistently show that it decreases stool frequency and improves stool consistency. However, loperamide does not alleviate pain in IBS patients and can actually increase nighttime abdominal pain. Therefore, it is recommended for patients experiencing painless diarrhea or for those looking to reduce postprandial urgency. It can also be used to help manage symptoms during stressful situations or other triggers, such as exercise or social gatherings. Since loperamide does not cross the blood-brain barrier, it is generally preferred over other opioids like diphenoxylate, codeine, or other narcotics [11, 25, 26, 28].

Antispasmodics are thought to alleviate pain associated with irritable bowel syndrome (IBS) by inhibiting the contractile pathways in the muscle wall. However, the use of smooth muscle relaxants in treating IBS is complicated by various methodological issues. Since the clinical evidence supporting the use of antispasmodics for IBS treatment is weak, this study finds it unnecessary to elaborate on their mechanism of action [27, 28]. Prokinetics are a group of structurally different compounds that stimulate gastrointestinal motility. The primary mechanism for domperidone's prokinetic effect is the blockade of D2-receptors in dopaminergic inhibitory transmission. Cisapride, a 5-HT3 antagonist and 5-HT4 agonist, is thought to enhance motility by promoting acetylcholine release from the myenteric plexus [28].

A higher percentage of IBS patients (40–60%) experience panic disorders, anxiety, and depression compared to healthy controls (<25%). Visceral perception in IBS is influenced by cognitive and psychosocial factors, with studies showing that IBS patients activate the prefrontal cortex in response to painful stimuli, amplifying pain instead of activating inhibitory pathways. This may explain the effectiveness of antidepressants in treating IBS. Many patients perceive their symptoms as food-related, often reporting postprandial worsening and nutrient intolerances. Probiotics are used due to their association with symptoms following infectious diarrhoea, which can affect 7–30% of patients post-infection. Additionally, harmful experiences like abuse may contribute to the development of IBS, alongside familial patterns of anxiety and depression learned in childhood [28]. As a single-centred with a limited population for a longer period, this study may not reflect the proper scenario of the whole country.

Conflicts of interest: No conflicts of interest were found

CONCLUSION

The study does not support the routine use of probiotics in IBS patients, and large, placebo-controlled trials need to be conducted for better outcomes. Finally, the role of psychotherapy in IBS has not been established.

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