



Importance of nutrition in irritable bowel syndrome

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ABSTRACT

Irritable bowel syndrome (IBS), also known as spastic colon disease, is the most common functional gastrointestinal disorder. The disease affects a large part of the population and can be seen in the majority of patients who apply to gastroenterologists. Although its pathophysiology is not fully known, it is thought to be a brain-intestinal disorder today. According to research, the symptoms of IBS have a wide spectrum, such as inconsistency in behaviours in the intestines, inflammation of the intestinal mucosa, infectious diseases, rare genetic factors, and psychological problems. The diagnosis of IBS is defined 50 the ROMA IV criteria. According to these criteria, the patient has abdominal pain at least 1 day a week, however, a worsening scenario in abdominal pain, variability in the amount of defecation and difference in the appearance of stool. At least two of these three conditions together and this condition continues for a long time and irritable bowel syndrome is diagnosed to people. There are various types of IBS and the treatment varies according to these

subtypes. In the treatment of IBS, the appropriate treatment should be decided for the patient and a course should be followed. As a result, the symptoms of the people who apply to the clinic should be investigated well and the treatment option suitable for each individual should be chosen, it should be aimed to increase the declining quality of life of the patients. In this review, nutrition in IBS will be examined in light of current literature.

KEYWORDS: *Irritable bowel syndrome, diet, nutrition, FODMAP diet*

INTRODUCTION

Irritable bowel syndrome (IBS) is a chronic, recurrent, functional and a common gastrointestinal system disorder that adversely affects the patient's quality of life (1). IBS can be seen due to changes in the composition and function of the intestinal mucosal barrier (2). Abdominal pain, bloating, gas, diarrhoea, constipation or a combination of constipation and diarrhoea is observed in people who have IBS, a condition characterized by changes in the

intestinal structure and the pathophysiology of which is not fully known (3). The diagnosis of IBS is based on the ROMA IV criterion (4). IBS is difficult to diagnose by physicians, as there is no specific gold standard and changes can be observed in its findings over time. Although IBS can be seen at any age, research has shown that women and young people between the ages of 20-40 are more likely to develop the disease than men (5). Various psychosocial factors such as anxiety, depression and sleep problems are seen in people who have irritable bowel syndrome. Especially women are more likely to experience anxiety and depression (6). People who have irritable bowel syndrome are recommended a low-FODMAP, gluten-free diet, or a diet that the dietitian deems suitable for that patient (7). It is also known that the reason for the pain-triggering role of alcohol in IBS is that it can irritate the gastrointestinal system and disrupt the structure of the intestinal microbiota (6).

1. Definition and Diagnostic Criteria for Irritable Bowel Syndrome

Although the pathophysiology of IBS is not known, this syndrome is thought to be an interaction disorder between the gut and the brain rather than a functional disorder (8,9). Unlike other gastrointestinal diseases, IBS targets the symptom that is superior or most problematic to other symptoms experienced by people with the disease rather than being tied to the underlying pathophysiology. Therefore, treatments do not progress as they should, and for a long time, the natural progression of disorders is not altered by most therapeutic interventions (10). Gene changes that are not caused by changes in genetics and DNA sequence, but are also hereditary, infections and adverse life conditions can trigger IBS in individuals. At the same time, chronic stress, negative psychological symptoms, and the patient's negative thoughts about this disease may

increase the severity of existing symptoms (9). Various topics such as the role of many mechanisms for the pathophysiology of the disease, genetic factors, altered intestinal motility, disorder between the gut-brain axis, differences in serotonin metabolism, and bile salt metabolism have been researched (10). Although researchers have tried to identify risk factors for the rate of IBS have not been identified so far (11).

2. Epidemiology of Irritable Bowel Syndrome

The ratio of IBS varies according to the geographical locations of countries around the world. According to the data projected for 2020, the prevalence of IBS is estimated to be highest in South America. The majority of those who apply to hospitals with IBS are women and young people. At the same time, the age group with the highest prevalence in those under 50 years of age. According to the Rome IV criteria, patients with irritable bowel syndrome are divided into subgroups according to their symptoms. (12). These are given in Table 1. Although there are multiple approved scales according to the stool form of adult patients, the most commonly used scale is the Bristol Stool Form Scale. Due to the Bristol Stool Form Scale, the hardest stool is type 1 and the softest is type 7. The normal stool should be in types 3,4 and 5 (13). The prevalence varies from country to country. In the study conducted in 2022, the average prevalence varies as 1.1% in France and Iran, 35.5% in Mexico and 4.2% in Spain (8). Individuals with irritable bowel syndrome experience both psychological and economic distress. These psychological symptoms cause individuals to experience great declines in their quality of life. Due to symptoms such as abdominal pain, diarrhoea, and constipation, the work life of individuals is also significantly affected, which can cause people with this disease to be unemployed (14).

Table 1. Subgroups of patients with irritable bowel syndrome according to Rome IV criteria.

IBS-D	Irritable bowel syndrome with predominant diarrhea
IBS-C	Constipation-predominant irritable bowel syndrome
IBS-M	Irritable bowel syndrome with irregular bowel motility
Other	Undifferentiated irritable bowel syndrome

3. Medical Nutrition Therapy and Recommendations in Irritable Bowel Syndrome

The role of diet in IBS is very important. Various dietary interventions can be applied to alleviate the symptoms seen in people with the disease. Practical Evidence in Global Nutrition was deemed appropriate, according to the Gastroenterology Expert Group. A rating is made based on Practical Evidence in Nutrition. According to this evaluation; (15).

1. Results obtained at level A are validated by good evidence.
2. The results obtained at level B need to be supported by conclusive evidence due to some uncertainties.
3. Since there are doubts about the results obtained at the C level, they should be supported by the opinion of an expert.
4. As for the results obtained at the D level, the evidence obtained at this level is very limited since there is little information and there are many inconsistencies.

Due to the frequency of symptoms and the reduced quality of life in people with IBS, patients are greatly affected both psychologically and economically. Recently, the effect of diet has been high in order to improve the declining quality of life of patients (12). In summary, nutrients that increase symptoms in individuals should be restricted in the diet. A diet that regulates the bowel microbiota would be beneficial in people with irritable bowel syndrome (16).

4. Non-Pharmacological Treatment Methods in Irritable Bowel Syndrome

There are 4 known subtypes of irritable bowel syndrome. It is possible to reduce symptoms in individuals with non-pharmacological treatment methods (17).

4.1. Traditional diet

The traditional diet is based on NICE guideline recommendations. These recommendations were created to reduce the symptoms seen in people with irritable bowel syndrome. According to these recommendations (18);

1. Meals should be consumed regularly and meals should not be skipped.
2. Water should be drunk enough
3. Gaseous, acidic, alcoholic, etc. Be mindful of the consumption of beverages.
4. Excessive consumption of spices should be avoided.
5. In case of diarrhea and constipation, attention should be paid to the types of food consumed.
6. Regular physical activity is recommended for people.
7. The amount of fat in the diet can be limited.

Traditional dietary NICE guideline recommendations are based on clinical findings and the effects of nutrients on the gastrointestinal tract. In the case of alcohol consumption by people with IBS, attention should be paid to its consumption as physiological effects can be seen in the gastrointestinal system. Excess caffeine consumption is undesirable in people with irritable bowel syndrome because caffeine increases gastrointestinal motility (15).

4.2. Low FODMAP diet (Low Fermentable Oligo-saccharides, Di-

saccharides, Mono-saccharides and Polyols Diet)

Although there are positive effects in many patients with a low-FODMAP diet in IBS patients, it occurs in people who do not have positive effects (19). A low-FODMAP diet plays a role in relieving symptoms in individuals with IBS. A low-FODMAP diet can be referred to as restricting dietary fermentable, digestible carbohydrates such as oligo-saccharides, di-saccharides, mono-saccharides, and polyols. They are transported undigested until they reach some of the bacteria in the gut, without being directly digested into the bloodstream [20]. The low FODMAP diet consists of 3 steps (21). These;

1. FODMAP restriction step that continues for 4-8 weeks
2. FODMAP restriction step lasting 6-10 weeks.
3. This step can be called re-entry and acclimation to foods. Step in which tolerated FODMAPs are reintroduced into the diet. It can also be called the personalization step.

A low-FODMAP diet is thought to be effective in relieving various symptoms such as abdominal pain, abdominal bloating, and intestinal irregularities, with 50-80% results (22). Although conclusive results are not in question, the effects of the FODMAP diet on irritable bowel syndrome vary depending on the age, lifestyle, subtype of irritable bowel syndrome, microbiome composition and metabolism of the individuals (20). When indigestible carbohydrates reach the intestine, gas formation increases and bloating and gas occur in the lumen. Such complications of IBS are alleviated with the FODMAP diet (23). FODMAPs may increase gastro-intestinal motility, which can alleviate small bowel transit time and thus reduce the likelihood of food being digested. The FODMAP diet is an evidence-based diet approved by experts and should be applied for a short time. In addition, inappropriate use of the FODMAP diet can cause health

problems in individuals (24). According to a study, the FODMAP diet was found to be more effective in reducing abdominal swelling than the gluten-free diet. It has been observed that the low-FODMAP diet gives positive results in abdominal pain and swelling seen in all types of IBS. According to a study, it was observed that a low FODMAP diet gave positive results in most people with IBS, but a moderate FODMAP diet did not have positive results in symptoms such as abdominal pain and intestinal irregularities in people with the disease (23). Research has shown that patients on a low-FODMAP diet have harder stools. Accordingly, a better result can be obtained with this diet in people who have frequent and waterier stools, such as IBS-D or IBS-M, which are subtypes of IBS (25). The low-FODMAP diet is thought to be more successful than the gluten-free diet. One of the most problematic issues in the low-FODMAP diet is short-term and long-term food restrictions (26).

4.3. Gluten-Free Diet

Another diet used to relieve IBS symptoms is the gluten-free diet. A sensitivity to grains has been observed in many patients with IBS. According to research, IBS and gluten-free diet are proven solutions. Wheat content, other than gluten, has been found to contribute, albeit rarely, to the symptoms seen in patients (27). According to research, some patients with IBS ate spelled bread instead of gluten-free products. It has been observed that people who consume spelled wheat have positive results in the symptoms of the disease (28). In some patients, gluten was restricted for 4 or 8 weeks, and although symptoms such as intestinal motility and permeability were alleviated, no change was observed in patients with celiac disease and gluten sensitivity (29). According to the results obtained from the studies, it is thought that the symptoms seen in people are not caused by gluten, but certain symptoms may occur in people due to the fructan in the content of wheat (27). The role of a gluten-free diet in some patients is uncertain. In

order to reduce the symptoms seen in IBS, it is necessary to exclude from the diet only gluten-free, packaged food products containing sugar, similar to fructans. However, a gluten-free diet may not appeal to everyone in the long run (30).

CONCLUSION

Irritable bowel syndrome is a common functional gastrointestinal disorder. Symptoms first appear at an early age and are more common in women than men. Although its pathophysiology is not fully known, irritable bowel syndrome may manifest itself with genetic or psychosocial factors. Individuals should be treated according to the current subtypes of irritable bowel syndrome. The most appropriate treatment method should be chosen by experts to increase the quality of life of individuals due to symptoms such as abdominal pain and intestinal irregularities seen in irritable bowel syndrome.

It is recommended that every person diagnosed with irritable bowel syndrome should seek psychological help. In general, the main part of the treatment consists of changes in people's lives, diet and exercises. The patient and the specialist should be in good communication during the treatment and continue the treatment with joint decisions. Pharmacological treatment methods are thought to be promising for the future in irritable bowel syndrome.

In conclusion, the pathophysiology of irritable bowel syndrome needs to be investigated better. Different treatment options should be developed for patients other than the currently available treatment options. Treatment options that may be better for the symptoms seen in patients can be developed.

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