IRRITABLE BOWEL SYNDROME (IBS)

INTRODUCTION

IBS is the most commonly diagnosed gastrointestinal condition and is second only to the common cold as a cause of absence from work. An estimated 10 to 20 percent of people in the general population experience symptoms of IBS, although only about 15 percent of affected people actually seek medical help.

Several treatments and therapies are available for IBS. These measures help alleviate symptoms, but do not cure the condition. The chronic nature of IBS and the challenge of controlling its symptoms can be frustrating for both patients and healthcare providers.

WHAT CAUSES IBS

There are a number of theories and mechanisms about how and why IBS develops. Despite intensive research, the cause is not clear.

One theory suggests that IBS is caused by abnormal contractions of the colon and intestines (hence the term "spastic bowel," which has sometimes been used to describe IBS). Vigorous contractions or spasm of the intestines, analogous to a "Charlie Horse" painful muscle spasm in the calf can cause severe cramps and the abnormal peristalsis lead to bowel problems such as diarrhea, constipation, or both. The spasm theory provides the rationale for some of the treatments of IBS,
using antispasmodic medications. Also fiber supplements can alter bowel contraction pressure as discussed below.

Some people develop IBS after a bout of gastrointestinal infection. This is called “post-infectious irritable bowel syndrome”.

People with IBS who seek medical help are more likely to suffer from anxiety and stress than those who do not seek help. Stress and anxiety are known to affect the intestine altering contractions and intestinal secretions. It is felt that stress and anxiety are probably not the cause of IBS, rather, they heighten the symptoms. Studies have suggested that IBS is more common in people who unfortunately have a history of physical, verbal, or sexual abuse.

Food intolerances are common in patients with IBS, raising the possibility that IBS is caused by food sensitivity or allergy. Actual food allergy is generally not a cause of IBS but many patients with IBS can improve by avoiding foods they are sensitive to (see below).

A number of foods are known to cause symptoms that mimic or aggravate IBS, including dairy products (which contain lactose), legumes (such as beans), and cruciferous vegetables (such as broccoli, cauliflower, Brussels sprouts, and cabbage). These foods increase intestinal gas, which can cause cramps. Several medications also have effects on the intestines that may contribute to symptoms.

There is a significant amount of research demonstrating that patients with IBS have a heightened sensitivity of the intestines to normal function and sensations (so-called "visceral hyperalgesia"). This theory proposes that nerves in the bowels are overly sensitive, so that normal amounts of gas or movement are perceived as excessive and painful. Some patients with severe IBS feel better when treated with medications that decrease pain perception in the intestine.

The “Brain-gut Axis” connects the brain and the GI tract through hormones. Hormones relevant to gut function are chemical messengers released in the brain after a variety of types of stimuli (stress, anxiety, or other) and travel via the blood stream to the gut where they fit into receptors there and elicit a response. The effect may be increased or decreased contractions or secretions and thus lead to
the wide variety of symptoms that patients with IBS may have. Some medications for IBS block or stimulate these receptors to improve symptoms.

Some patients with IBS may have too many bacteria flourishing in the small intestine where normally there are only limited bacteria normally present (as contrasts to the colon where vast numbers of bacteria normally reside). This condition, called Small Bowel Bacterial Overgrowth (SBBO) or Small Intestinal Bacterial Overgrowth (SIBO) can be easily tested for and if present, treated

**IBS SYMPTOMS**

IBS usually begins in young adulthood. Women are twice as likely as men to be diagnosed with IBS in the United States and other western countries. In other countries (such as India), an equal number of men and women are diagnosed with IBS. The hallmark of IBS is abdominal pain in association with altered bowel habits (diarrhea and/or constipation or both).

Abdominal Pain – The abdominal pain is typically crampy, varying in intensity, and located in the lower left abdomen. However, the nature, severity, and location of pain can vary considerably from person to person. Some people notice that emotional stress and eating worsen the pain, and that having a bowel movement relieves the pain. Some women with IBS notice an association between pain episodes and their menstrual cycle. Bloating discomfort that often progresses throughout the day is common.

Altered bowel habits — Altered bowel habits are a hallmark of IBS. This can include diarrhea, constipation, or alternating diarrhea and constipation.

Diarrhea — The diarrhea of IBS causes frequent loose stools of small to moderate volume. Bowel movements usually occur during the daytime, and most often in the morning or after meals. Diarrhea is often preceded by formed movements and also a sense of urgency to defecate and followed by a feeling of incomplete evacuation. About one-half of people with IBS also notice mucous
discharge with diarrhea. Diarrhea occurring during sleep does not usually occur in IBS and suggests another diagnosis.

Constipation — Stools are often hard and pellet-shaped. Sometimes people do not feel empty after a bowel movement, even if the rectum is actually empty. This faulty sensation can lead to straining, sitting on the toilet for prolonged periods of time. The frequency of bowel movements can be quite variable.

Other symptoms— Other symptoms include bloating, gas, belching, heartburn, difficulty swallowing, an early feeling of fullness with eating, and nausea.

Non-gastrointestinal symptoms can also occur, including frequent and urgent urination, painful menstrual periods, and pain with sex and headaches.

**MAKING THE IBS DIAGNOSIS**

Several intestinal disorders have symptoms that are similar to IBS. Examples include malabsorption (abnormal absorption of nutrients such as celiac disease or lactose intolerance), inflammatory bowel disease (such as ulcerative colitis and Crohn's disease), and microscopic and eosinophilic colitis (uncommon diseases associated with intestinal inflammation).

Because there is no diagnostic test for IBS, the diagnosis can accurately be made by evaluation of symptoms and physical exam and often a few tests to exclude other causes.

Medical history— The diagnosis of IBS begins with a comprehensive medical history. The medical history will include a discussion of the nature, duration, and severity of gastrointestinal and other symptoms. Sometimes a medical history reveals that dietary factors, emotional factors, or drugs are important factors. Certain symptoms are not typical of IBS such as fever, weight loss, loss of appetite, and bleeding.
Physical examination— The physical examination is usually essentially normal in people with IBS, but it can help detect or rule out conditions that mimic IBS. Commonly, palpation of the lower left part of the abdomen can be tender and sometimes a spastic segment of bowel can be felt by the doctor.

USEFUL TESTS

Routine blood tests in people with suspected IBS are often done; these tests are usually normal, but they can be a clue to other medical conditions. Thyroid function tests, blood tests for celiac, ultrasound, and stool tests to check for certain other conditions or more invasive tests, such as endoscopy or colonoscopy may be used.

Testing for Small Bowel Bacterial Overgrowth is noninvasive. The patient breaths into a machine that measures the amount of hydrogen in the breath. Lactulose (a sugar that is not absorbed by humans) is ingested and additional breath hydrogen measurements are made. If there is a rapid increase in breath hydrogen, this may indicate the presence of bacteria that are metabolizing the lactulose in the small bowel and diagnoses the condition. A late peak means that the lactulose has traveled to the colon and is then metabolized by the normal bacteria there.

TREATMENTS FOR IBS

There are a number of different treatments and approaches that are individualized for each patient. A multimodality approach can be emphasized including medical treatments, dietary recommendations, and psychological assessment/support when needed. A patient’s role in their IBS is encouraged and observations about symptom triggers and specific concerns should be conveyed to the doctor. A dairy of foods, activity, stress, and sleep can sometimes be helpful.

Dietary changes— It is reasonable to try eliminating foods that a patient has observed as a potential symptom trigger. Specifically, lactose, the sugar in milk may cause symptoms if the enzyme that processes it (lactase) is not present. A trial period eliminating milk products for 2 weeks is simple and noninvasive. This
would include milk, ice cream, cream sauces, cheese etc. Some patients with IBS are also sensitive to gluten without having celiac disease. Gluten containing foods are mainly those that contain wheat, barley, and rye.

Foods that cause gas— Several foods are only partially digested in the small intestines. When they reach the colon (large intestine), further digestion takes place, which may cause gas and cramps. Eliminating these foods temporarily is reasonable if gas or bloating is bothersome. The most common gas-producing foods are legumes (such as beans) and cruciferous vegetables (such as cabbage, Brussels sprouts, cauliflower, and broccoli). In addition, some patients have trouble with onions, celery, carrots, raisins, bananas, apricots, prunes, sprouts, and wheat. The use of products such as Beano or Gas-X are generally safe to try.

Fiber— Increasing dietary fiber (either by adding high fiber foods to the diet or using fiber supplements) can relieve symptoms in some people with IBS. One of the mechanisms may be by bulking the stool, the colon is wider and contracts less vigorously. Consider a tube of toothpaste, when nearly empty it takes a lot of squeeze pressure but when full, outflow is easily produced with minimal effort. Fiber supplements should be started at a low dose and increased slowly over several weeks to reduce the symptoms of excessive intestinal gas, which can occur in some people when beginning fiber therapy. However, fiber can make some patients with IBS more bloated and uncomfortable. If this happens, it is best to decrease fiber intake and consider other treatments.

FODMAP Diet – As noted, several different types of food substances may contribute to symptoms of IBS, especially fermentable sugars such as lactose, fructose, galactose, sorbitol, mannitol, and xylitol. These carbohydrates may be poorly handled by the small bowel in IBS patients and then fermented by existing gut bacteria producing gas and intestinal symptoms.

The FODMAP (Fermentable Oligosaccharides, Disaccharide, Monosaccharides and Polyols) diet selectively avoid foods high in concentration of these substances such as lactose (milk, cheese, etc), fructose (many fruits and high fructose corn
syrup), fructans (wheat, onions, artichoke), oligosaccharides (beans, chickpeas), and polyols (apples, upper cuts, avocado, nose, pairs, plums).

Given the complexity of the FODMAP dietary recommendations, consultation with a registered dietitian may be beneficial to help sort this out and make specific individualized recommendations.

Psychosocial therapies— Stress and anxiety can worsen IBS in some people. The best approach for reducing stress and anxiety depends upon the individual and the severity of symptoms. Patients should have an open discussion about the possible role that stress and anxiety could be having on symptoms. Some patients benefit from formal counseling and relaxation techniques with or without medications.

Many patients find that daily exercise are helpful in maintaining a sense of well-being. Exercise can also have favorable effects on bowel action.

Medications — Although many drugs are available to treat the symptoms of IBS, these drugs do not cure the condition. They are primarily used to relieve symptoms. The choice among these medications depends in part upon whether a person has diarrhea, constipation, or pain- predominant IBS. Furthermore, the effectiveness of specific drugs varies from one person to another.

Anticholinergic (antispasmodic) medications— Anticholinergic drugs block the nervous system's stimulation of the gastrointestinal tract, helping to reduce severe cramping and irregular contractions of the colon. Drugs in this category include dicyclomine (Bentyl) and hyoscyamine (Levsin). These drugs may be particularly helpful when taken preventively (ie, before symptoms) and thus are most helpful for patients who can predict the onset of their symptoms. A sublingual (under the tongue) form is available for PRN (as needed) rather than daily use. Common side-effects include dry mouth and eyes and blurred vision.

Antidepressants— Many antidepressants have a pain relieving effect in patients with IBS. The dose of TCAs is typically much lower than that used for treating depression. It is believed that these drugs reduce pain perception when used in low doses.
Antidiarrheal drugs— The drugs loperamide (Immodium) or diphenoxylate with atropine (Lomotil) can help slow the movement of stool through the digestive tract. Loperamide and diphenoxylate/atropine are most helpful in people with diarrhea-predominant IBS.

Alosetron— Alosetron (Lotronex) blocks serotonin, a hormone that is involved in intestinal contractions and sensations. It is helpful in some patients with IBS with diarrhea predominance.

Antibiotics — If Small Bowel Bacterial Overgrowth is diagnosed, antibiotics may be prescribed to treat it. Often, rifaxamin (Xifaxan) is used as it is an antibiotic with excellent potency against gut bacteria and it is not absorbed, limiting side effects.

HERBS AND NATURAL THERAPIES— A number of herbal and “natural” therapies are available and are commonly tried by patients. Unfortunately, there is little evidence supporting their benefit from carefully conducted studies.

Peppermint oil — Pepperment does relax muscle in the gut and can help some patients with IBS. Peppermint oil can cause or worsen heartburn.

Probiotics — There is increasing interest and use of probiotics or "healthy" bacteria in a variety of intestinal diseases including IBS. They are generally safe and there is some research suggesting effectiveness of some products. There exists a large number of probiotic preparations available that have not undergone proper research to determine effectiveness, however.

**IBD, THE PROGNOSIS**

Although IBS can be frustrating, annoying, and produce substantial physical discomfort and emotional distress, most people with IBS do not develop serious long-term health conditions. There is no increase risk of developing cancer in
patients with IBS, for example. The vast majority of patients learn to control their symptoms and IBS does not decrease life expectancy.

Over time, less than 5 percent of people diagnosed with IBS will be diagnosed with another gastrointestinal condition. It is important to work with a clinician to monitor symptoms over time. If symptoms change over time, further testing may be recommended.

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