

Irritable Bowel Syndrome: Pain from the Second Brain



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Irritable bowel syndrome (IBS) is a chronic gut condition characterized by abdominal discomfort associated with altered bowel habits, such as diarrhea or constipation. IBS is the most commonly diagnosed GI condition in both primary care and gastroenterologists' practices. It typically first presents in the teens or twenties but can remain symptomatic throughout life. A clear understanding of the nature of the syndrome on the part of the clinician can lead to improved outcomes for these patients and reduce resource utilization.

Etiology

IBS is a functional disorder, meaning a disorder of the regular function of the digestive tract; it also implies a lack of organic disease. The gut functions through its own self-contained neural network (the enteric nervous system [ENS]) that runs the complex process of digestion and excretion. Although the central nervous system can modulate the function substantially, the ENS functions fairly independently; it is often called the "second brain." Various insults can alter the function of the ENS nerves to cause IBS. A well-known example is that of post-infectious IBS, where symptoms caused by a gut infection persist long after the causative organism has been cleared. However, in most cases, the initial cause is not found.

The currently-accepted framework for understanding IBS integrates the dimensions of:

- altered motility,
- visceral hypersensitivity and
- psychosocial factors.

Altered motility presents as diarrhea and/or constipation, often associated with cramps (hence the previous term "spastic colon"). Visceral hypersensitivity occurs where sensations, such as from stool or gas movement which were previously not perceived, become painful or associated with bloating. Psychosocial factors figure in the etiology of IBS, with stress or anxiety often making the symptoms worse. Symptom hypervigilance can also play a role. However, stress and anxiety alone are not the cause of IBS.

Diagnosis

Diagnosis of IBS is made based on typical symptoms in the absence of organic disease. The hallmark symptom for IBS diagnosis is abdominal pain associated with altered bowel movements that has been present for at least six months, according to the Rome III criteria (Table 1). Patients may have diarrhea, constipation, or most commonly, alternate between the two. Generally, there is some improvement in pain after having a bowel movement. Other symptoms may include bloating, gas, or nausea.

The medical history is usually suggestive and patients should not have any alarm symptoms (Table 2). A dietary and medication history is also worthwhile to rule out other causes of the patient's symptoms. A physical exam is usually normal and can help to rule out other diseases that may present the same way.

Table 1

Rome III criteria for diagnosis of irritable bowel syndrome (IBS)

Recurrent abdominal pain or discomfort* at least 3 days per month in the last 3 months associated with ≥ 2 of the following:

- Improvement with defecation
- Onset associated with a change in frequency of stool
- Onset associated with a change in form (appearance) of stool

* Symptoms must be present for > 6 months duration

Testing

Since diagnosing IBS depends on the absence of organic disease, it is often difficult to know how many tests are needed. Several gut diseases, such as inflammatory bowel disease (ulcerative colitis or Crohn’s disease) or microscopic colitis, can also present with similar symptoms of diarrhea and pain. In older populations, tumours or bowel cancer can present with constipation and pain.

In general, patients with diarrheal symptoms or older patients with recent onset symptoms should be worked-up more substantially. However, a confident diagnosis of IBS can usually be made in primary care based on history, lack of alarm symptoms and minimal tests. A number of routine blood tests are suggested (Table 3), but more or less testing may be appropriate depending on the clinician’s judgement. Stool tests, barium or CT scans and referral for



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Table 2

“Red flag”* or alarm features

- Weight loss
- Anemia
- Fever
- Night symptoms
- Age of onset > 50 years
- Rectal bleeding
- Continuous diarrhea
- Areas with endemic gut disease (e.g., *Giardia lamblia*)
- Family history of colorectal cancer, irritable bowel disease or celiac disease

* “Red Flag” features indicate the likelihood of an alternate or coexisting condition to IBS

Table 3

Studies to be ordered to evaluate IBS

- Complete blood count
 - Thyroid-stimulating hormone
- Consider depending on symptoms and severity:**
- Stool culture, *C. difficile*, ova and parasite
 - Celiac serology
 - Barium small bowel follow-through
 - Barium enema
 - Flexible sigmoidoscopy or colonoscopy

endoscopy may be appropriate given the clinical context, but are not required in most instances in primary care.

Management

Optimal IBS management starts with educating the patient. Studies have suggested that informing them on the nature of IBS and helping them understand what to expect can reduce repeat

Table 4

Symptom-based therapy for IBS

Pain

- Antispasmodics as needed:
 - Hyoscine
 - Dicyclomine
 - Pinaverium
 - Trimebutine
- Tricyclic antidepressant (low dose)
- Selective serotonin reuptake inhibitor
- Anxiolytics (as needed)

Bloating

- Anti-gas (simethicone)

Constipation

- Fibre supplements
- Osmotic laxatives
- GI stimulants:
 - Bisacodyl
 - Senna
 - Cascara

Diarrhea

- Loperamide
- Diphenoxylate and atropine
- Antispasmodics regularly
- Cholestyramine

visits for the same problem. The concept of visceral hypersensitivity is useful to guide understanding of the disorder, by clearly framing the problem as a legitimate gut disorder and not a psychiatric problem.

Food intolerances are common in patients with IBS but they are not felt to be the cause of the disorder. Elimination of food types that may potentially cause problems can be attempted, such as dairy products or gas-forming legumes.

Treatment for IBS is otherwise predominantly symptom-based (Table 4) and should start with conservative measures (*i.e.*, fiber supplementation for constipation). Therapies can be

Take-home message

- IBS can be confidently diagnosed by history and limited testing in most cases
- Educating the patient can significantly improve their outcomes and your therapeutic alliance
- Management is symptom-based

escalated for increasing severity of symptoms. Worsening symptoms, alarm features, or severe comorbidities should prompt a referral to a gastroenterologist.

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Resources

1. Longstreth GF, Thompson WG, Chey WD, et al: Functional Bowel Disorders. *Gastroenterology* 2006; 130(5):1480-91.
2. Owens DM, Nelson DK, Talley NJ: The Irritable Bowel Syndrome: Long-Term Prognosis and the Physician-Patient Interaction. *Ann Intern Med* 1995; 122(2):107-12.

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