

Irritable Bowel Syndrome (IBS) — Pathophysiology, Clinical Features and Symptoms

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Nowadays, junk food like burgers, pizza, and other flour-based meals are often consumed by young adults. These consumers are mostly unfamiliar with the consequences of this diet, which may lead to severe and painful irritable bowel conditions. Cramping, bloating, constipation, abdominal pain, gas, and diarrhea are some of the common problems that patients of IBS experience. A detailed description of irritable bowel syndrome (IBS) is below.



Introduction

[Digestion](#) is important for maintaining good health. A small change in activities such as eating habits may result in a chronic disease known as irritable bowel syndrome (IBS). IBS does not have a definitive cause, but it can be associated with **stress, hormonal changes, or eating non-fibrous food**. Symptoms of IBS include frequent stomach cramps, constipation, [diarrhea](#), and bloating.

The condition may vary from person to person depending upon associations, which can be split into two groups: GI-related and GI-nonrelated. **GI-related refers to dysfunction of the gastrointestinal system**, causing IBS symptoms. **GI-non-related**

refers to external factors, such as chronic fatigue syndrome, somatoform, anxiety, chronic pelvic pain, depression, and temporomandibular joint disorders.

Definition of IBS

Irritable bowel syndrome (IBS) is a condition **affecting the colon**. Other terminologies used for IBS include **spastic bowel, nervous colon, and spastic colon**. It is important to know that there is no observable cellular/anatomic disruption with this condition (i.e. histology would be normal).

Incidence of IBS

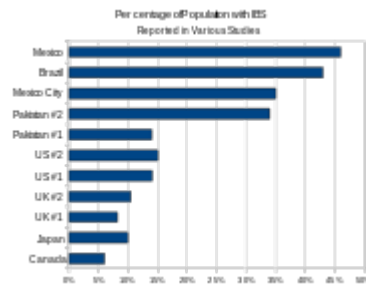


Image: "Chart of various studies of IBS prevalence, based on data in the IBS article" by Jeffhos. License: Public Domain

IBS affects 10–15% of all adults, more commonly **people below 45** years of age. **Women are more commonly affected** than men (2:1). 1 out of every 5 individuals is affected by the disease, and the most common age group is 20 to 30 years. The early signs of IBS should be addressed promptly to avoid severe and serious conditions. Managing lifestyle, stress, and diet are a few methods of relieving IBS symptoms. Proper counseling and medication also improve IBS.

Pathophysiology of IBS

The exact cause behind this chronic disease is still unknown; however, there are certain factors that play a vital role in the disorder, including internal and external factors.

Internal factors are:

Contractions in the intestines

The intestinal walls are lined with muscles that produce peristalsis, the rhythmic contraction, and relaxation that moves food from the stomach to the intestines to the rectum. Patients with IBS have **stronger and longer-lasting contractions** than normal individuals, causing gastric problems, bloating, and diarrhea. A weak intestinal contraction causes **dry and hard stools**, slow passage of food, and constipation.

External factors, such as environmental, economic, and mental factors, can also have a large impact on IBS. These include:

Foods

An **unhealthy and non-fibrous diet** can cause constipation, pain/discomfort, and bloating. Patients with IBS should maintain a diet rich in fiber and nutrients, promoting regular bowel movements and a healthy digestive system.

Mental stress

IBS can be worse under stressful conditions, which may include economic stress, job stress, or any other mental stress. This is the most commonly associated risk factor. The characteristic patient with IBS is a middle-aged female with increased stress (although the condition should not be ruled out if the patient is male).

Hormonal changes

It is believed that women are more susceptible to IBS than men because their bodies undergo more hormonal changes throughout their lives. IBS symptoms can occur during both **menstrual periods and pregnancy**.

Other illnesses

Severe diarrhea with infection may produce bacteria in the intestine and lead to many illnesses along with IBS.

Classification of **IBS**

IBS is mainly classified based on the consistency of stools. Classification is important, as a medication is determined accordingly. The classes of IBS are:

Class I IBS-C (constipation)

Irritable bowel syndrome with **constipation** is the main type of IBS, in which stool must be at least 25% hard or lumpy and less than 25% watery and loose.

Class II IBS-D (diarrhea)

When irritable bowel syndrome occurs with **diarrhea**, the stool must be at least 25% loose and watery with less than 25% hard and lumpy.

Class III IBS-M (mixed)

In **mixed irritable bowel syndrome**, the stool must be at least 25% hard or lumpy along with loose or watery at the same time. It is a mixed constipation and diarrhea condition.

Class IV IBS-U (unclassified)

This irritable bowel syndrome class does not fit with any of the other three. In this case, it is difficult to identify the problems, as the stools are less than 25% hard & lumpy as well as less than 25% watery and loose.

Clinical Features of IBS

The symptoms of irritable bowel syndrome may differ from individual to individual and sometimes are mistaken for other diseases. The symptoms include

- Bloating feeling
- Nausea
- Diarrhea
- Abdominal pain (**which usually decreases after defecation**)
- Cramping
- Gas
- Constipation
- Occasionally alternative attacks of diarrhea and constipation
- Mucus in the stool

Investigations and Diagnosis

Irritable bowel syndrome is a diagnosis of exclusion. It depends mainly on **physical exam** and **medical history**. There are two criteria of diagnosis for IBS, both dependant on the symptoms present.

Rome criteria

The patient has **abnormal pains that last at least three days a month** and are associated with decreased pain with defecation and a change in the consistency or frequency of stool.

Manning criteria

Patients with **defecation-relieved pains**, incomplete bowel activities, mucus, and alteration in stool evenness. Red flag signs and symptoms that should prompt additional testing include

- Weight loss
- New-onset in patients over 50 years of age
- Fever
- Rectal bleeding
- Vomiting
- Nausea
- Abnormal pain at night
- **Anemia**
- Diarrhea

If a patient has symptoms consistent with IBS, and there are no red flags, treatment for IBS can be initiated without additional tests. On the other hand, if signs and symptoms are inconsistent or red flags are present, additional tests should be performed, including:

Imaging

- **Flexible sigmoidoscopy:** This examination looks at the rectal sigmoid colon.
- **Colonoscopy:** This test uses an endoscope to examine the entire colon.
- **X-ray:** Standing and supine abdominal x-rays can check for obstruction or perforation.

- **Computerized tomography (CT):** Abdominal CT scans with and without PO/IV contrast are extremely helpful in diagnosing pathologies causing abdominal pain.
- **Lower GI series:** Radiopaque liquid is ingested/introduced, and x-rays are taken over a period of time, which is helpful in visualizing intestinal movement.

Laboratory tests

- **Lactose intolerance tests:** The enzyme lactase helps in digesting sugar from dairy products (lactose). The absence of lactase (lactose intolerance) can cause problems similar to irritable bowel syndrome.
- **Breath tests:** These test for the presence of certain bacteria in the GI tract.
- **Blood tests:** Complete blood count and metabolic panel can be performed.
- **Stool tests:** These tests look for the presence of parasites or bacteria.
- **Biopsy:** A biopsy evaluates for histological changes. IBS patients have **normal** biopsy results.

Treatment of IBS

Because there is no definitive etiology, treatment is focused mainly on managing symptoms.

Dietary changes

- Increase dietary fiber intake.
- Reduce greasy/fatty foods.

Medications

- **Fiber supplements:** Methylcellulose (Citrucel) and Psyllium (Metamucil)
- **Anti-diarrheal medicine:** Loperamide (Imodium) and bile acid binders
- **Anticholinergic and antispasmodic medications:** Dicyclomine (Bentyl) and Hyoscyamine (Levsin)
- **Antidepressant medications:** Tricyclic antidepressant and serotonin reuptake inhibitors (SSRIs)

Antibiotics

Antibiotics are not recommended for patients with IBS.

Counseling

Counseling may help if the patient is suffering from stress or depression, which worsen the patient's symptoms.

Medication specifically for IBS

There are two medications approved for IBS:

- **Alosetron (Lotronex):** a serotonin antagonist that slows GI movement. This drug is used in severe cases of IBS **in women only**.
- **Lubiprostone (Amitiza):** This medicine increases small intestine fluid

secretion to assist with stool passage. It can only be prescribed to women over 17 years of age suffering from IBS with constipation. Adverse effects include diarrhea, abdominal pain, and nausea

Review Questions

The correct answers can be found below the references.

1. What kind of stool is passed in mixed irritable bowel syndrome?

1. > 25% hard & < 25% loose
2. > 25% hard & > 25% loose
3. < 25% hard & > 25% loose
4. < 25% hard & < 25% loose

2. What are the classification systems for diagnosing IBS?

1. Italian and Rome criteria
2. Italian and Manning criteria
3. French and Rome criteria
4. Rome and Manning criteria

References

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Correct answers: 1B, 2D

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