

Irritable Bowel Syndrome: Epidemiology and Diagnosis

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Irritable bowel syndrome is part of a larger group of functional gastrointestinal disorders that, despite the difference in anatomic location, share many common features with regard to motor and sensory physiology, central nervous system relationship, and approach to patient management [1].

Definition

According to the Rome classification, IBS is defined as a group of functional bowel disorders in which abdominal discomfort or pain is associated with defecation or change in bowel habits and with features of disordered defecation [2].

Epidemiology

The prevalence of IBS in the general population is 8–25%. Fewer than 50% of those affected seek medical attention (IBS non-patients). The incidence of newly diagnosed IBS is relatively low and is estimated to be 0.2 per year in the age group 20–94 years. A busy general practitioner (panel of 3,600 patients) may see two to four new subjects with IBS symptoms each month.

The estimated prevalence of IBS in western societies varies due to variation in definitions of the syndrome and the specific questions asked [Table 1]. Recall surveys are frequently inaccurate, and symptoms are influenced by cultural influences and by patients' anxiety of serious impending disease [3].

The prevalence is higher in women, with a female to male ratio ranging from 1–2/1 in community reports to up to 3–4/1 in specialist reports. This gender difference is not understood and may be due to the fact that women tend to consult physicians more than men do, or to differences in pain threshold and physiology. Women suffering from IBS are 2–3 times more likely to undergo hysterectomies and appendectomies than those without IBS.

In most reports the first presentation to a physician is under the age of 45 and there is a decrease in reports of IBS symptoms among older subjects. About 10% of patients over 60 have their first presentation, and the prevalence of the disease in the elderly (11%) approaches that of the middle-aged. Fourteen percent of high school students report IBS symptoms.

The prevalence seems to be identical in whites and blacks. In the United States up to 70% of persons do not seek medical attention. This may be due to cultural factors, the degree of pain, and psychological disturbances. These rates may also be affected by access to health services. In the USA, where 40% of patients do not

have easy access to healthcare, the consultation rate is 46%; whereas in Australia, where healthcare access is close to 100%, the consulting rate is 73%.

The natural history of IBS is not completely understood. IBS is an episodic disorder marked by periods of severe activity followed by periods of remission. Data regarding the natural history are conflicting. In idiopathic IBS, 57–95% of patients tended to remain symptomatic after 5–8 years. In post-infectious IBS, 50% of patients recovered by 6 years. The predominant symptoms tend to remain stable over time. About 75% of patients have the same set of symptoms after 5 years. Approximately 70% present with mild, 25% with moderate, and 5% with severe disease. Mild disease correlates highly with gut physiology, whereas severe disease does not. There is an equal prevalence among the three clinical groups – constipation predominant, diarrhea predominant, and alternating constipation-diarrhea.

IBS accounts for 12% of patients seen by a primary care physician and is the largest group seen in gastroenterology practice, 25–50%. Functional gastrointestinal disorders comprise 41% of outpatient diagnoses, and IBS was the most frequently seen in this group. In the U.S. Householder Study, IBS patients visited 1.64 times for GI-related problems and 3.88 times for non-GI problems in the preceding year. Although most patients with IBS do not consult physicians, the direct and indirect cost is considerable. Patients with IBS miss three times as many work days as those without these symptoms (13.4 vs. 4.9 days) and are more likely to report that they are too ill to work (11.3 vs. 4.2%). In

GI = gastrointestinal

Table 1. Prevalence rates of IBS

Australia	12%
China	23%
Denmark	6%
Holland	9%
Iran	4%
Israel	2.9%
Japan	25%
New Zealand	17%
Nigeria	30%
Singapore	4%
Sweden	13%
United Kingdom	22%
USA	25%

IBS = irritable bowel syndrome

this sense they rank second only to the common cold as a cause of work absenteeism. In the USA there are between 2.4 and 3.5 million physician visits for IBS, and 2.2 million prescriptions are written for this syndrome. These incur a healthcare cost of \$4,044 as compared to \$2,719 for non-IBS patients (1995 dollars). The estimated direct annual cost is \$1.6 billion and \$19.2 billion for indirect cost (mainly absenteeism from work).

Diagnosis

IBS is no longer a diagnosis made only by exclusion. A focused history, physical examination and limited laboratory screening is appropriate. In 1978 Manning [4] developed a set of criteria to distinguish IBS from organic disease with a sensitivity of 58–90% and specificity of 74–87%. Between 1988 and 1998, the Rome I criteria were developed by consensus conference and have been used in large clinical trials. These criteria are composed of two parts, A and B. Part A consists of abdominal pain associated with disturbances of defecation and part B adds additional items of stool alteration [5]. Diagnosis requires at least one item from part A and two from part B. In 1998 the consensus panel developed the Rome II criteria [6], which include only part A questions. Part B has been deleted from the criteria. The Rome II criteria (1998) are as follows:

At least 12 weeks (need not be consecutive) in the last year of abdominal pain/discomfort that has two of the following three features:

- Relieved with defecation and/or
- Onset is associated with change in frequency of stool and/or
- Onset is associated with change in form of stool.

When patients with alarming signs and symptoms are excluded, the sensitivity, specificity, positive and negative predictive values for the Rome criteria are 63%, 100%, 100% and 76% respectively [7]. There is considerable overlap between the Rome and Manning criteria.

There is no consistent marker for disease activity. A careful interpretation of abdominal pain/discomfort and stool characteristics is the most important step in the recognition of IBS. Alarming symptoms and signs – such as progressive pain that prevents sleep, family history of colon cancer, weight loss, fever, rectal bleeding, palpable mass, steatorrhea, and anemia – require careful consideration and the ruling out of an organic disease.

There is no diagnostic test for IBS. Minimal diagnostic laboratory testing is required, including: complete blood count, erythrocyte sedimentation rate, blood chemistries, thyroid panel, and stool for occult blood, ova and parasites [8]. Normal physical examination, positive criteria for IBS, and normal laboratory tests have a sensitivity of 83% and specificity of 97% for the diagnosis of IBS [9].

Sigmoidoscopy is recommended for patients under the age of 50, and colonoscopy for older patients. In keeping with the guidelines of limited diagnostic evaluation, a 9 year follow-up study revealed that fewer than 5% have another explanation for their symptoms. Newer research suggests that symptom predominance such as constipation, diarrhea, and abdominal pain/discomfort may warrant additional diagnostic studies. Constipa-

tion-predominant patients who do not respond to general treatment measures may benefit from colonic transit studies, anorectal manometry, and defecating proctography. Diarrhea-predominant patients may benefit from further stool evaluation (weight, fat, white blood cell count, pH, osmotic gap), colon/small bowel biopsy, small bowel follow-through, D-xylose test, lactose hydrogen breath test, exocrine pancreas function tests, anti-endomysium/antigliadin, and antroduodenal manometry. Abdominal pain may require plain abdominal films, abdominal computed tomography, pelvic ultrasound, and small bowel X-rays. Behavioral and psychological profiles should be assessed.

Rectal barostat is probably the only diagnostic test that could positively discriminate IBS from non-IBS patients with a sensitivity of 95.5%, specificity 71.8% and a positive predictive value of 85.4% [10].

Prevalence changes substantially depend on the diagnostic criteria used. In a study comparing Manning and Rome I criteria, the prevalence decreased from 20.4% (two Manning criteria) to 8.5% (Rome I). In a recent study comparing the three diagnostic criteria in 4,500 subjects, the prevalence of IBS was 13.6% using Manning, 4.4% using Rome I, and 6.9% using Rome II criteria [11].

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