

Definition, epidemiology, diagnosis, natural history

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SUMMARY

Irritable Bowel Syndrome (IBS) is considered part of a broader spectrum of symptoms, known collectively as functional abdominal disorders. It is characterized by abdominal pain associated with defecation or a change in bowel habit, with features of disordered defecation and distention. IBS is a remarkably common condition affecting up to 20% of the general population with a female predominance, depending on the diagnostic criteria used and the weight given to various symptoms. The incidence of the disease has been estimated at almost 1% per year. Although only a minority of people with IBS seek medical advice, IBS is the most common disorder seen in gastroenterology practice.

To date no structural or pathophysiological abnormality has been discovered to explain IBS symptoms. Therefore, consensus-based diagnostic criteria are at present used for a positive diagnosis of IBS on clinical grounds. The initial approach also includes physical examination and a conservative set of screening studies but upon specific indications, further investigation may be required. Once the diagnosis is established, the incidence of serious organic diseases is extremely low. Nevertheless, IBS is considered a chronic, although benign, disorder, with variable course in the general population, and significant impact on quality of life.

Key words: Irritable bowel syndrome (IBS), prevalence, incidence, diagnostic criteria, prognosis.

For a long time, Irritable Bowel Syndrome (IBS) has been a matter of frustration and uncertainty for both patients and doctors. Even today, practising clinicians tend to have different concepts on what actually constitutes IBS. Some adopt the most restrictive definitions, whereas others simply use the term IBS as a convenient diagnosis to label unexplained digestive complaints.

DEFINITION

Currently, Irritable Bowel Syndrome is considered part of a broader spectrum of symptoms, known collectively as functional abdominal disorders. These disorders have no objective disease marker, thus their definition is subject to the continual adaptations of clinical practice to new findings, insights and trends. Symptom-based criteria have therefore, been used to define IBS, beginning with the Manning criteria in 1978 (Table 1),¹ the Kruis criteria in 1984,² the Rome I criteria in 1992 (Table 2),³ refined and simplified in the Rome II guidelines in 1999 (Table 3).⁴ At present, because of incomplete understanding of the pathophysiology of the syndrome, IBS is defined according to the above mentioned criteria as "a functional bowel disorder in which abdominal pain is associated with defecation or a change in bowel habit, with features of disordered defecation and distention".⁴ The application of these standardized criteria has facilitated communication between investigators and clarified inclusion criteria for research studies,⁵ however their usefulness for progress in this field has been questioned.⁶ Criticisms include: a low specificity in the definition, omission of clinical patterns of IBS like postprandial symptoms, identified by clinicians and amenable to newer therapies;⁷ restrictive criteria regarding frequency of symptoms before a symptom can be considered to be relevant; and the predominant focus on pain that leads to a bias toward chronic pain syndromes.^{5,8} Nevertheless, all the diagnostic criteria will continue to be controversial until the pathophysiology of IBS is better understood

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Table 1. The Manning criteria

Chronic or recurrent abdominal pain for at least 6 months and two or more of:

1. Abdominal pain relieved by defecation
2. Looser stools with onset of pain
3. More frequent stools with onset of pain
4. Abdominal distention
5. Passage of mucus in stools
6. Sensation of incomplete evacuation after defecation

Table 2. The Rome I criteria

At least 3 months continuous or recurrent symptoms of:

1. Abdominal pain or discomfort which is:
 - (a) relieved with defecation and/or
 - (b) associated with a change in the frequency of stool and/or
 - (c) associated with a change in the consistency of stool and/or
- and
2. Two or more of the following, at least one quarter of occasions or days
 - (a) altered stool frequency
 - (b) altered stool form (lumpy/hard or loose/watery stool)
 - (c) altered stool passage (straining, urgency, or feeling of incomplete evacuation)
 - (d) passage of mucus
 - (e) bloating, or feeling of abdominal distention

Table 3. The Rome II criteria

12 weeks or more in the last 12 months of abdominal discomfort or pain that has of the following three features:

- (a) relieved with defecation and/or
- (b) associated with a change in the frequency of stool and/or
- (c) associated with a change in the consistency of stool

The second group of criteria included in Rome I are considered supportive rather than mandatory in the diagnosis.

and treatment more appropriately targeted to relevant disturbances.⁹

EPIDEMIOLOGY

The precise prevalence of IBS in different populations is difficult to assess due to the lack of an objective

marker of IBS. Rates have varied according to the definitions of IBS used. Community based surveys have indicated that between 10-20% of the general population will report a symptom complex compatible with IBS (IBS non-patients), but only 25-30% of these will seek medical attention (IBS patients).¹⁰ In Europe, as in the USA, the prevalence of IBS patients in general practice is estimated at 2%,¹¹ but only 1% of subjects with IBS type symptoms are referred to a specialist.¹² However, IBS patients account for 30% of the patients seen by gastroenterologists and remains the most common diagnosis in gastroenterological practice.¹³ The reasons why some people present for care remain inadequately understood, although severity of symptoms, fear of serious disease and psychological distress may be important.^{14,15} According to Trikas et al, female patients with IBS who seek medical care are characterized by general anxiety and hypochondriasis.¹⁶

In a USA study, approximately 9% of people developed a new onset of IBS over 12-20 months of follow up but during the same period of time a similar number of people reported resolution of their symptoms. Thus, the overall prevalence in the population appears to be stable each year.¹⁷

As far as the incidence of the disease is concerned, it seems substantially lower than the prevalence, although there is less data available. When people with any previous symptoms are excluded, the true annual incidence of IBS is probably 1-2%.¹⁸

Gender

IBS-type symptoms are more prevalent in women than in men in most countries. The male/female ratio varies from 1.2 to 2.6, depending on the weight given to individual symptoms. Straining and passage of hard stools are more common in women.¹⁹

The female preponderance is more apparent in clinical cases (3:1) than in those who do not seek medical care.²⁰ About 70% of IBS patients who present to physicians in western countries are women, although the reason for this predominance is not known.^{13,21} There is evidence that blood-brain perfusion patterns during colorectal distention differs between men and women with IBS.²² Differences between men and women in motility and sensitivity to luminal distention have also been observed in healthy volunteers.^{23,24} A gender-specific efficacy of 5HT₃-antagonists (e.g. alosetron) has also been observed, and data suggest that there may be a physiological basis.^{25,26}

Age

IBS-type symptoms are prevalent in all age groups in community-based populations, although in most studies the prevalence rates drop after middle-age.^{10,27} Overall, the influence of age appears small and certainly advancing age does not preclude the diagnosis of IBS.¹⁴ In a population study, 23% of elderly subjects with IBS reported the onset of symptoms within the previous year.²⁸ Therefore, as organic diseases with similar symptoms with IBS are more frequent in the elderly, greater caution is warranted.

Ethnic and Cultural Factors

IBS is not just a disease of western countries. It has been commonly reported in Asia²⁹ and Africa,³⁰ although ethnic differences have been observed in a few studies where direct comparisons have been made. These differences may occasionally be attributed to cultural factors such as diet and socioeconomic status.³¹

DIAGNOSIS

Despite the new insights into the pathophysiology of IBS, purely symptom-based criteria continue to be used to make the diagnosis of IBS and to determine eligibility in clinical trials. Accuracy of diagnosis is based on the experience and expertise of the physician as disease specific laboratory, radiologic and endoscopic tests are lacking.

Towards a positive diagnosis

The diagnostic evaluation of patients presenting with IBS symptoms has no simple standard, yet, over the last two decades we are moving from the traditional “diagnosis of exclusion” to a “positive diagnosis” of the syndrome. Most authors agree that (a) meeting symptom-based diagnostic criteria, such as Rome II (4), Rome I (3) or occasionally Manning criteria (1), (b) obtaining a negative physical examination and (c) performing a conservative set of screening studies should comprise the initial diagnostic approach to IBS.³² There is evidence that patients with symptoms such as those described by Manning or compatible with the Rome I criteria, who have no alarm symptoms and no abnormal findings on physical examination in the hospital setting have a 52-74% chance of having IBS.³³ Data show that patients who fulfill the Rome criteria are unlikely to have other gastrointestinal diagnoses, even after extensive subsequent testing. According to Vanner et al, the positive predictive value for the diagnosis of IBS using both the Rome I criteria and excluding alarm features, over 1-year follow-

up, was 98%.³⁴ However, factors that may influence the diagnostic approach include: (a) the duration and severity of symptoms, (b) their change or trajectory over previous weeks or months, (c) demographic factors (e.g. older versus younger, male versus female), (d) the referral status of the patient, (e) findings from previous studies, (f) family history of inflammatory bowel disease or colon cancer and (g) psychological factors that influence the illness presentation.¹³

History and physical examination. A careful and detailed personal and family history is essential to exclude organic diseases, that could cause symptoms consistent with IBS. Key historical features such as multiple, variable and intermittent symptoms, pain with intestinal features, altered defecation abdominal bloating/distention, and absence of alarm symptoms are relevant to the diagnosis of IBS. Abdominal pain or discomfort associated with exercise, movement, urination or menstruation may have a different origin. However, the characteristic symptoms of IBS alone do not always differentiate it from organic disease and inquiry should be made about medication use and potential dietary factors, such as caffeine, fructose in fruit juice and sorbitol in artificially sweetened. Extracolonic features such as heartburn, dyspepsia, early satiety, dyspareunia, dysuria, nocturia, urinary urgency, prostatism, lethargy, poor sleep, headache or fibromyalgia occur frequently in IBS patients. Additionally, psychosocial factors including recent stress or sexual abuse may influence the clinical presentation and may require special attention, even though these features do not discriminate IBS from other gastrointestinal disorders.³⁵ Warning (“alarm”) signs such as rectal bleeding, weight loss, continuous diarrhoea, constant and recent distention, anemia, fever, nocturnal symptoms, warrant investigation.

A thorough physical examination is as important as history. Some nonspecific signs, such as a palpable tender sigmoid colon and discomfort with rectal examination, related to increased visceral sensitivity, may be observed in IBS patients. Otherwise physical examination is usually unremarkable, yet it excludes other diagnoses.

Apart from history and physical examination, a limited series of initial investigations are usually needed to exclude organic, metabolic or infectious diseases. In primary care, the emphasis should be on minimizing tests in patients with typical symptoms and no alarm signs. Prolonged, fruitless diagnostic evaluation increases patient anxiety and raises costs. According to the British Society of Gastroenterology guidelines for the management of IBS, “young patients (<45 years) with typical

functional symptoms, no alarm symptoms or family history of colorectal cancer, and a normal examination can be safely given a working diagnosis of IBS without further tests, and their response to reassurance and lifestyle observed".³⁶ Usually, the evaluation can be limited to that required for the physician to confidently provide explanation, reassurance and initiate therapy. This often includes hematology and chemistry tests, erythrocyte sedimentation rate, stool examination for occult blood, ova and parasites, flexible sigmoidoscopy and in those over 45 years of age or with a family history of colon polyps or cancer, a complete colonic evaluation.⁸

Re-evaluation after 3-6 months is recommended, and if symptoms continue, despite reassurance and symptomatic treatment, further investigation is needed.

Differential diagnosis. In general the differential diagnosis of chronic or recurrent abdominal pain or discomfort and bowel dysfunction include

(a) malabsorptive conditions (postgastrectomy, intestinal disease or pancreatic insufficiency), (b) dietary factors including lactose intolerance, (c) infection due to bacterial causes, if recent in onset, or due to *Gardia lamblia*, (d) inflammatory bowel disease, mainly Crohn's disease rather than ulcerative colitis and, less commonly, microscopic colitis, (e) psychological conditions (panic disorder, depression, somatization) and (f) miscellaneous conditions (endometriosis, endocrine tumours, HIV and associated infections).

Further investigation. Patients reporting symptoms for the first time in later life, those with atypical or alarm symptoms, and patients with a diagnosis of functional gastrointestinal disorders who develop a change or progressive symptoms or even worsening anxiety, those who have a family history of colorectal cancer, as well as those with pathological tests or physical examination, require further investigation, based on the predominant symptom such as pain, diarrhea or constipation. In particular, patients with diarrhea, should be fully evaluated with non-invasive investigations, such as serum B₁₂, red cell folate, ferritin, thyroid function, antiendomysial antibodies, calcium, albumin, and microscopy of the stool together with a rectal biopsy and occasionally barium follow-through. Severe diarrhea warrants a full colonoscopy and biopsy to exclude microscopic colitis. A breath hydrogen test for lactose malabsorption or alternatively lactose exclusion diet, if the test is not available, may be performed on IBS patients who are regular consumers of more than 280 ml of milk or equivalent dairy products.³⁶ However, although lactose malabsorption commonly overlaps with

IBS, it rarely explains the symptoms, since avoidance of lactose usually does not lead to the resolution of the complaint.

NATURAL HISTORY

IBS is a benign but chronic disorder that persists in a waxing and waning fashion for years. The course of the disorder is quite variable in the general population.³⁷ Patients often report intermittent bouts of symptoms separated by periods of normal bowel function, and these exacerbations are often ascribed by the patients themselves to stressful periods in their lives. For many patients this pattern of alteration between normal bowel function and IBS persists for a lifetime. Earlier studies indicated that a large subset of IBS patients experience a gradual reduction of symptoms. In many instances, patients experienced an improved sense of well-being with appropriate physician counselling and an enhanced ability to cope, even if the pain and bowel disturbances themselves prove to be refractory. These findings are emphasized by an editorial review by Talley,³⁸ who noted upon follow-up of stable population samples that the prevalence of symptoms of functional gastrointestinal disease remains stable with time. The implication of this study is that as individuals in the populace as a whole develop symptoms of IBS, an equivalent number experience symptom resolution. Thus, rather than having a progressive illness, many patients with IBS can expect to achieve control of their symptoms over time,¹⁸ although only 5% of patients became completely free of symptoms in a Danish five-year follow-up study.²⁷ However, a subset of IBS patients may develop other functional symptoms such as functional dyspepsia while experiencing resolution of IBS symptoms.³⁹ The identification of prognostic features has been inconsistent in the studies to date, but patients with greater anxiety, a longer duration of complaints⁴⁰ and previous abdominal surgery⁴¹ probably have a worse prognosis.

Irrespective of the course of the disease, the diagnosis of IBS is a safe diagnosis since the incidence of new significant diagnosis afterwards is extremely low. However, the impact of IBS on quality of life has been shown to be significant in patients, a matter that is presented elsewhere in this supplement.

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