

## Irritable Bowel Syndrome for Primary Care Physicians

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### Introduction and Epidemiology

Irritable bowel syndrome (IBS) is a chronic and often debilitating condition with a complex aetiology<sup>1</sup>. It is the most common diagnosis made by gastroenterologists worldwide<sup>2</sup>. The incidence and prevalence of IBS vary depending on the diagnostic criteria used but it is estimated that the prevalence in the UK is 17% overall, with a prevalence of 11% among men and 23% among women<sup>3-4</sup>. IBS can have a significant negative impact on quality of life and social functioning, although it is not known to be associated with the development of serious disease or excess mortality. However, patients with IBS are more likely to undergo specific surgical operations such as hysterectomy and cholecystectomy. IBS further represents an economic burden on society due to the high consumption of healthcare resources and the non-productivity of IBS patients<sup>5</sup>. It appears that 33–90% of patients do not consult a physician, and that a proportion of patients who meet the IBS criteria are not diagnosed with IBS. The frequency of IBS symptoms peaks in the third and fourth decades, and there is a female predominance of about 2:1 in the 20s and 30s, although this discrepancy is less apparent in older patients<sup>6</sup>. The female predominance is less apparent in the general population, which suggests that women with IBS are more likely to seek healthcare for their symptoms<sup>7</sup>. IBS symptoms which persist beyond middle life continue to be reported by a substantial proportion of individuals in their seventh and eighth decades.

### Pathogenesis

The pathogenesis of IBS appears to be multifactorial. The following factors play a central role in the pathogenesis: heritability and genetics, dietary and intestinal microbiota, low-grade inflammation and disturbances in the neuroendocrine system of the gut<sup>2</sup>.

IBS is known to aggregate in families and to affect multiple generations but not in a manner consistent with a major Mendelian effect. Relatives of an individual with IBS are two to three times as likely to have IBS<sup>8</sup>.

Psychological distress is not only a common co-morbidity in IBS patients, but also a factor which is likely to play a direct role in the pathogenesis<sup>4</sup>. Interestingly, parental modelling and

the reinforcement of illness behaviour can also contribute to IBS. Having a mother with IBS has been shown to account for as much variance as having an identical set of genes as a co-twin who has IBS. This insinuates that the contribution of social learning to IBS is at least as great as the contribution of heredity. Furthermore, the role of childhood events such as nasogastric tube placement, poor nutrition, abuse, and other stressors have been clearly associated with IBS<sup>8</sup>.

A substantial proportion of patients with IBS report onset of their symptoms after acute gastroenteritis<sup>9</sup>. Post-infectious (PI)-IBS has been reported after viral, bacterial, protozoa and nematode infections, with the incidence of PI-IBS varying between 7% and 31%. In this subset of IBS patients GI symptoms appear following gastroenteritis, with approximately 10% developing persistent symptoms. Recent studies suggest that some individuals are genetically predisposed to developing PI-IBS, with some people demonstrating a specific cytokine response to infection<sup>4</sup>.

It is important to note that women appear to have more frequent and severe IBS symptoms during menses compared to other phases of the menstrual cycle and that female gender is a significant independent risk factor for the development of IBS<sup>7</sup>.

### Diagnosis and Investigations

Adult patients who present to their general practitioner (GP) with lower gastrointestinal tract disorders account for one in 20 of all general practice consultations. The possibility of sinister conditions such as colorectal cancer or inflammatory bowel disease may create diagnostic uncertainty and reluctance for the doctor to attribute the symptoms to IBS. In the United Kingdom up to 29% of patients with IBS are referred to a specialist but the majority of these will return to their GP for long term management<sup>6</sup>.

Primary care differs from specialist care because the GP's greater familiarity with the patient, and their previous consultations, enable presenting problems to be seen in context rather than in isolation. Furthermore, it involves the first contact for care of problems at a stage when they are likely to be poorly defined. Lastly, primary care is characterised by a biopsychosocial model of care that takes into account the context of the person's

problem. These characteristics are especially important when managing chronic disorders, such as IBS, where there is a high priority on continuity of care<sup>6</sup>.

There is currently no biochemical, histopathological or radiological diagnostic test for IBS. The diagnosis is based principally on symptom assessment. The Rome III criteria (Figure 1) is the most recent, updated and universal diagnostic criteria for IBS. However, although the Rome III criteria are widely used in clinical studies, it is not used by most clinicians. In fact, most primary care physicians are not aware of diagnostic criteria for IBS and about one third of secondary care doctors do not use them in practice<sup>6</sup>.

IBS patients are grouped on the basis of the most predominant bowel symptom as diarrhoea- predominant, constipation-predominant, a mixture of both diarrhoea and constipation, and un-subtyped IBS in patients with an insufficient abnormality of stool consistency to meet the criteria for the other sub-groups. Approximately one third of patients have diarrhoea- predominant, one third have constipation-predominant, and the remainder have a mixture of both diarrhoea and constipation. The classification of IBS patients into sub-groups is useful for clinical practice, but it is common for IBS patients to switch from one subtype to another over time. More than 75% of IBS patients change to either of the other 2 subtypes at least once over a 1-year period<sup>2,10</sup>.

**Figure 1 - Rome III diagnostic criteria\* for IBS<sup>6</sup>**

Recurrent abdominal pain or discomfort\*\* at least 3 days a month in the past 3 months, associated with two or more 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

\*Criteria fulfilled for the past 3 months with symptom onset at least 6 months before diagnosis  
 \*\* “discomfort” means an uncomfortable sensation not described as pain

According to the National Institute for Health and Clinical Excellence (NICE), healthcare professionals should consider assessment for IBS if a patient presents with any of the following symptoms for at least six months<sup>11</sup>:

- abdominal pain/discomfort
- bloating
- or a change in bowel habit

NICE has also given the following guideline pertaining to “red flag” indicators. All people presenting with possible IBS symptoms should be asked if they have any of the following indicators. Referral to secondary care should be made if any are present<sup>11</sup>:

- unintentional and unexplained weight loss
- rectal bleeding
- family history of bowel or ovarian cancer

- change in bowel habit to looser and/or more frequent stools persisting for more than 6 weeks in a person aged over 60 years.

Furthermore, all patients presenting with IBS symptoms should be appropriately assessed and clinically examined for the following 'red flag' indicators. A referral should be made to secondary care if any are present<sup>11</sup>:

- Anaemia
- Abdominal masses
- Rectal masses
- Inflammatory markers for inflammatory bowel disease
- Serum CA125 should be measured in women with symptoms that suggest ovarian cancer

In addition, NICE have stated that IBS should be considered only if the person has abdominal pain or discomfort that is either relieved by defecation or associated with altered bowel frequency or stool form. This should be accompanied by at least two of the following four symptoms<sup>11</sup>:

- altered stool passage (straining, urgency, incomplete evacuation)
- abdominal bloating (more common in women), distension, tension or hardness
- symptoms made worse by eating
- passage of mucus

Other features such as lethargy, nausea, backache and bladder symptoms are common in people with IBS, and may be used to support the diagnosis.

According to NICE, patients who meet the IBS diagnostic criteria should have the following tests to exclude other diagnoses (Figure 2):

**Figure 2<sup>11</sup> - Tests to exclude other diagnoses**

Full blood count (FBC)
Erythrocyte sedimentation rate (ESR) or plasma viscosity
C-reactive protein (CRP)
Antibody testing for coeliac disease (endomysial antibodies [EMA] or tissue transglutaminase [TTG])

The value of serological tests for coeliac disease (EMA or TTG antibodies) in patients with IBS diarrhoea-predominant depends on the population and is generally considered cost-effective if the incidence of coeliac disease is above 1%. It is therefore likely to be beneficial in the United Kingdom, where up to 3% of cases of IBS diarrhoea-predominant in primary care have coeliac disease<sup>6</sup>.

The following tests are not necessary to confirm diagnosis in people who meet the IBS diagnostic criteria<sup>11</sup>:

- Ultrasound
- Rigid/flexible sigmoidoscopy

- Colonoscopy/barium enema
- Thyroid function test
- Faecal ova and parasite test
- Faecal occult blood
- Hydrogen breath test (for lactose intolerance and bacterial overgrowth)

It is important to note that IBS is associated with several other conditions. At least half of IBS patients can be described as depressed, anxious, or hypochondriacal. In addition, between 20% and 50% of IBS patients have fibromyalgia. Furthermore, IBS is common in several chronic pain disorders, being present in 51% of patients with chronic fatigue syndrome, in 64% with temporomandibular joint disorder, and in 50% with chronic pelvic pain. The lifetime rates of IBS in patients with these syndromes are even higher. Patients with such co-morbidities generally have more severe IBS. A careful history to identify such associated disorders is helpful in identifying patients who are likely to have severe IBS and associated psychiatric disorder<sup>6</sup>.

**Management**

The treatment of IBS is determined by the patient’s most troublesome symptoms. Although there is overlap in the therapies offered to the different IBS sub-groups, treatment decisions are primarily based on the frequency and severity of symptoms. The management discussed in this section is largely based on the NICE guidelines<sup>11</sup>.

**Dietary and lifestyle advice**

People with IBS should be given information about the importance of self-help in effectively managing their IBS. This should include information on general lifestyle, physical activity, diet and symptom-targeted medication. Healthcare professionals should assess the physical activity levels of people with IBS (ideally using the General Practice Physical Activity Questionnaire). People with low activity levels should be given advice to encourage them to increase their activity levels. Healthcare professionals should also encourage people with IBS to make the most of their available leisure time and to create time for relaxation<sup>11</sup>.

Figure 3 summarises the general advice that should be given to patients regarding their diet and nutrition. If diet continues to be considered a major factor in a person's symptoms and they are following general lifestyle/dietary advice, they should be referred to a dietician for further advice and treatment, including single food avoidance and exclusion diets. Such advice should only be given by a dietician<sup>11</sup>.

Probiotics are live microorganisms which when taken in sufficient quantities, confer a health benefit. People with IBS who try probiotics should be advised to take the product for at least 4 weeks while monitoring the effect. Probiotics should be taken at the dose recommended by the manufacturer<sup>11</sup>.

**Figure 3 - Diet and nutrition should be assessed and the following general advice given <sup>11</sup>**

Have regular meals and take time to eat
Avoid missing meals or leaving long gaps between eating
Drink at least eight cups of fluid per day, especially water or other non-caffeinated drinks, for example herbal teas
Restrict tea and coffee to three cups per day
Reduce intake of alcohol and fizzy drinks
It may be helpful to limit intake of high-fibre food (such as wholemeal or high-fibre flour and breads, cereals high in bran, and whole grains such as brown rice)
Reduce intake of 'resistant starch' (starch that resists digestion in the small intestine and reaches the colon intact), which is often found in processed or re-cooked foods
Limit fresh fruit to three portions per day (a portion should be approximately 80 g)
People with diarrhoea should avoid sorbitol, an artificial sweetener found in sugar-free sweets (including chewing gum) and drinks, and in some diabetic and slimming products.
People with wind and bloating may find it helpful to eat oats (such as oat-based breakfast cereal or porridge) and linseeds (up to one tablespoon per day).
Healthcare professionals should review the fibre intake of patients, adjusting (usually reducing) it while monitoring the effect on symptoms. People with IBS should be discouraged from eating insoluble fibre (for example, bran). If an increase in dietary fibre is advised, it should be soluble fibre such as ispaghula powder or foods high in soluble fibre (for example, oats)

**Pharmacological therapy**

Healthcare professionals should consider prescribing antispasmodics for patients. These should be taken as required, alongside dietary and lifestyle advice. Laxatives should be considered for the treatment of constipation, but patients should avoid taking lactulose. Patients should be advised how to adjust their doses of laxative or antimotility agent according to the clinical response. The dose should be titrated according to stool consistency, with the aim of achieving a soft, well-formed stool (corresponding to Bristol Stool Form Scale type 4). Loperamide should be the first choice of antimotility agent for diarrhoea. One advantage of loperamide is its peripheral site of action with little penetration of the blood brain barrier and thus, little potential for CNS side effects or habituation<sup>4</sup>.

Psychotropics possess a variety of peripheral and central effects which make them attractive treatments for IBS. These effects include modulation of pain perception, mood stabilisation, treatment of associated psychiatric conditions, and possible direct effects on GI motility and secretion. Healthcare professionals should consider tricyclic antidepressants (TCAs) as second-line treatment for patients if laxatives, loperamide or antispasmodics have not helped. Treatment should be started at a low dose (5–10 mg equivalent of amitriptyline), which should

be taken once at night and reviewed regularly. The dose may be increased, but does not usually need to exceed 30 mg<sup>11</sup>.

Selective serotonin reuptake inhibitors (SSRIs) should be considered only if TCAs have been ineffective. The anticholinergic effects of TCAs and their ability to prolong intestinal transit times are the reasons they are particularly preferred over SSRIs in IBS diarrhoea-predominant. Furthermore, given the propensity of SSRIs to commonly cause GI adverse events of nausea, vomiting, and diarrhoea, indicate that TCAs may have more utility in IBS diarrhoea-predominant than SSRIs<sup>12</sup>. Healthcare professionals should take into account the possible side effects when prescribing TCAs or SSRIs. After prescribing either of these drugs for the first time at low doses, the patient should be followed up after 4 weeks and then at 6–12 monthly intervals<sup>11</sup>.

### Psychological interventions

Anxiety and depression are common in IBS and patients report a correlation between stress and their symptoms, providing a rationale for psychological therapy. Referral for psychological interventions (cognitive behavioural therapy, hypnotherapy and/or psychological therapy) should be considered for people with IBS who do not respond to pharmacological treatments after 12 months and who develop a continuing symptom profile (refractory IBS).<sup>11</sup> Hypnotherapy reduces patient anxiety and improves symptom control in the majority of patients with refractory IBS. The benefits extend well beyond symptom control and include improvements in quality of life and reduction in emotional distress<sup>13</sup>. Data from general practice shows that hypnotherapy is effective during the first three months, although the effect is less marked after that<sup>6</sup>.

Prognosis of IBS depends on the length of the history, those with a long history being less likely to improve. Follow-up should be agreed between the healthcare professional and the patient based on the response of the person's symptoms to interventions. The emergence of any 'red flag' symptoms during management and follow-up should prompt further investigation and/or referral to secondary care<sup>11</sup>.

### Competing Interests

None declared

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