

Managing irritable bowel syndrome

Irritable bowel syndrome is a functional disorder of the bowel affecting nearly 17% of adults in Australia and accounting for 25 to 50% of all referrals to gastroenterologists.

Successful management encompasses an appreciation of its multifactorial aetiology and a biopsychosocial approach to treatment.

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Irritable bowel syndrome (IBS) can be a frustrating disorder for both physicians and patients because it is lifelong and impairs patients' quality of life and social functioning.^{1,2} Its complex aetiology, involving both biological and psychological factors, remains incompletely understood. IBS affects both genders and all ages but has a 2:1 female predominance³ and most commonly presents in those aged 25 to 44 years. IBS affects nearly 17% of adults in Australia⁴ and accounts for 25 to 50% of all referrals to gastroenterologists. IBS is second only to the common cold in accounting for work absenteeism.⁵

Previously IBS was regarded as a 'diagnosis of exclusion', but its current definition emphasises identification of a positive symptom complex involving abdominal pain associated with changes

in bowel habit and stool characteristics. Physicians are encouraged to use the Rome III criteria to make a positive diagnosis and to communicate this clearly to patients. A clinical diagnosis of IBS in the absence of alarm features is highly secure (i.e. it is not likely to be wrong or to be changed to an alternative organic diagnosis in the medium-term future) and should allay anxiety on the part of both the doctor and the patient.

IBS is probably the best recognised of the functional gastrointestinal disorders. However, many patients who are given a clinical label of IBS do not actually have IBS when strict criteria (e.g. Rome III diagnostic criteria) are applied, but another functional bowel disorder such as functional bloating, functional diarrhoea or functional

IN SUMMARY

- IBS is a common, lifelong functional gastrointestinal disorder in which the hallmarks are abdominal pain associated with changes in bowel habit (stool form and/or frequency).
- A positive diagnosis of IBS is made clinically by identifying the typical symptom complex.
- A diagnosis of IBS requires at least six months of symptoms, with the patient having had three days of symptoms monthly for the past three months.
- Organic pathology can usually be simply excluded by the recognition of alarm features.
- Of those patients with IBS, 50% have coexistent depression/anxiety symptoms that should be sought and addressed.
- Management of IBS should be biopsychosocial and individualised, with options ranging from reassurance, education, dietary modifications and psychological interventions to a variety of medications aimed at controlling exacerbating symptoms.

Table 1. Functional bowel disorders

- Irritable bowel syndrome
- Functional bloating
- Functional constipation
- Functional diarrhoea
- Unspecified functional bowel disorder

Table 2. Proposed pathogenic mechanisms for IBS

- Altered colonic and small bowel motility
- Visceral afferent hypersensitivity
- Microscopic inflammation
- Altered faecal microflora
- Psychosocial dysfunction

constipation. This is probably of little direct clinical relevance, but it is useful to be aware of as newer literature appears with different and more restrictive terminology. In future it may become more useful to refer to this constellation of conditions as 'functional bowel disorders' (FBDs), not simply IBS (Table 1).

When making a diagnosis of a FBD it is important to seek specific gastrointestinal diagnostic features such as bloating and faecal urgency to help manage patients. However, it may be equally important to be aware of coexistent anxiety and depressive symptoms. Exhaustive investigation of the young, otherwise well patient is now considered unnecessary, with most clinically suspected cases of FBD/IBS confirmed using brief, targeted investigation unless 'alarm features' suggesting organic pathology are present.

Interestingly, patients who seek help for IBS have increased rates of anxiety, depression, phobias and somatisation, whereas patients with IBS who do not seek medical attention are psychologically similar to healthy controls.⁶ This implies that psychological distress affects the experience of IBS but does not cause symptoms alone. Recognising anxiety and depression in patients with FBD/IBS is important because management of



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these conditions may improve bowel as well as emotional symptoms, and these conditions are common in patients with IBS; 13% of general practice consultations for IBS in Australia involve management of psychological problems also.⁷

The aetiology of IBS remains unclear, with twin studies suggesting that environmental factors are more important than genetics.⁸ Other theories propose a role for altered neuroimmune responses to past enteric infections, colonic motility disorders, visceral hypersensitivity, abnormal serotonin pathways and psychological dysfunction (Table 2).

Clinical features of IBS - making the diagnosis

Patients with IBS can present with a broad range of gastrointestinal and nongastrointestinal symptoms that can be elicited by taking a history and examining the patient (Table 3). Clinical diagnostic criteria have been established and have evolved over time because no biological marker of the disease has been identified.⁹

Rome III is the current research criteria most widely used (see the box on page 34). The Rome

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Table 3. Suggested approach to diagnosing IBS

History

- Perform an open-ended and nonjudgemental history
- Elicit positive features as per Rome III criteria (see the box on this page)
- Seek psychological symptoms – reason for current presentation
- Look for stressors
- Look for dietary factors exacerbating symptoms
- Exclude effects of medications – for example, sorbitol, antacids (diarrhoea), calcium channel blockers, anticholinergics (constipation)
- Ensure no alarm features are present (see Table 4)
- Check time course – symptoms should have been present for at least six months

Examination

- Examine patient for normal or mild generalised abdominal tenderness – the presence of an abdominal mass or abdominal wall pain suggests organic pathology

III criteria focuses on episodic abdominal pain or discomfort as the hallmark of the disorder, accompanied by changes in stool frequency and consistency, or relief of pain/discomfort with defaecation. However, in clinical practice, doctors frequently label any FBD as IBS. At a clinical level this is not of great relevance as these disorders behave similarly, and symptom-targeted therapy is used regardless of the precise label.

Pain/discomfort

IBS-related abdominal pain is usually colicky in nature and often located in the left iliac fossa, although location and severity are highly variable. Emotional

Rome III diagnostic criteria for IBS*

Recurrent abdominal pain or discomfort for at least three days per month in the last three months associated with two or more of the following:

- improvement in pain/discomfort with defaecation
- onset associated with a change in frequency of stool
- onset associated with a change in form (appearance) of stool.

* Criteria fulfilled for the past three months with symptom onset at least six months before diagnosis.

stress and eating often exacerbate discomfort, whereas defaecation relieves pain. Some patients have symptom flares that can last for days, whereas others have daily but briefer symptoms.

Altered bowel habit

As a relationship between abdominal pain and stool passage is a necessary feature for a diagnosis of IBS, a careful stool history is required. Moreover, a careful stool history may assist with targeting therapy.

It is important to remember that a wide range of ‘normal’ bowel habit exists, with stool frequency varying from three per day to three per week in most people without IBS. Therefore, changes in bowel habit are often of greater importance than the actual stool form or frequency itself.

Subtypes

The variation in clinical phenotype of IBS based on the Rome criteria has given rise to several subtypes, the identification of which helps to direct therapy. A substantial proportion of patients switch subtypes over time. These subtypes are described below.

- **Constipation-predominant (IBS-C).** This occurs in one-third of patients with IBS. Hard stools occur more than 25%

of the time and loose stools less than 25% of the time. Characteristically, stools are hard and pellet-shaped and there is a sense of incomplete evacuation.

- **Diarrhoea-predominant (IBS-D).** This occurs in one-third of patients with IBS. Loose stools occur more than 25% of the time and hard stools less than 25% of the time. The diarrhoea aspect of IBS usually involves frequent small volume loose stools with mucus, often in the morning or after meals, and is heralded by urgency and followed by a sense of incomplete evacuation. Large volume diarrhoea, blood in stools, nocturnal diarrhoea or fatty stools should prompt investigation for other causes such as malabsorption (fat and carbohydrate) and inflammatory bowel disease.
- **Mixed type IBS.** This occurs in one-third of patients with IBS. Both hard and loose stools occur more than 25% of the time.
- **IBS-unspecified (IBS-U).**
- **Postinfectious IBS (PI-IBS).** This is a distinct subtype describing the 10 to 30% patients with previous bacterial gastroenteritis who develop IBS, usually the diarrhoeal subtype.¹⁰ Risk factors for PI-IBS include being female, being young, having prolonged fever with gastroenteritis, and pre-existing anxiety and depression.¹¹

Time frame

A diagnosis of IBS requires at least six months of symptoms with the patient having had three days of symptoms monthly for the past three months.

Supportive symptoms

Several ‘supportive’ symptoms, such as defaecation straining, urgency, a feeling of incomplete evacuation, mucus passage and bloating, are recognised as characteristic of IBS but are not included in the diagnostic criteria. Other gastrointestinal symptoms such as reflux, dysphagia,

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dyspepsia, early satiety and nausea,¹² plus nongastrointestinal problems such as lethargy, headache, backache, urinary symptoms, dyspareunia,¹³ fibromyalgia, chronic fatigue syndrome, temporomandibular joint disorder and chronic pelvic pain¹³ are more frequent in patients with IBS.

Psychological symptoms

Psychological distress is very common, with 50% of patients who seek medical care for IBS being depressed or anxious.¹⁴ Screening questions for these disorders often reveal the current psychological stressors of patients affecting the timing of presentation for their IBS symptoms. This may be important for therapy.

Dietary factors

The relationship between certain foods and symptoms is individualised in

patients with IBS. A food and symptom diary can aid in identifying troublesome foods for an individual patient. Many patients report lactose,¹⁵ wheat, fat and fruits as being poorly tolerated, thus screening for coeliac disease can be beneficial in selected patients.

Investigations

The major challenge for clinicians is to undertake cost-effective and limited investigation in most patients with symptoms consistent with IBS/FBD, while recognising those with alarm features who may have organic pathology and warrant specialist referral (Table 4). This parsimonious approach is to be recommended because patients with IBS/FBD are reported to have a high rate of unnecessary investigations and surgeries, including cholecystectomy and hysterectomy.¹⁶

Breath testing is simple and safe but hampered by methodological limitations and lack of availability in some areas. Breath testing may be appropriate for patients reporting dietary symptoms suggestive of lactose intolerance, or in whom bacterial overgrowth is suspected, although sugar malabsorption has not been shown to be more common in patients with IBS. Routine breath testing of patients with IBS for lactose, fructose and sorbitol as well as for small bowel bacterial overgrowth was not recommended at the recent Rome Consensus Conference.

The commentary below is generally directed towards the initial presentation of patients with IBS/FBD.

Suspected IBS and no alarm features

In patients with clinically suspected IBS/FBD with no alarm features and normal physical examination (the

overwhelming majority consulting in primary care), the American Gastroenterology Association guidelines recommend against routine use of flexible sigmoidoscopy, barium enema, colonoscopy and faecal occult blood testing.¹⁷ A full blood count is recommended and is normal in patients with IBS/FBD.

Limited further investigation should be determined by age, duration of IBS/FBD symptoms, presence of alarm features and IBS subtype, and should be led by suspicions based on the clinical history.

Use of the investigative approach described results in less than 5% of patients with organic disease being wrongly diagnosed with IBS.¹⁸ Patients with known IBS/FBD should not generally be reinvestigated each time they re-present with the same symptoms, as chronic, relapsing symptoms are expected from the natural history of the disorder. Reassurance and targeted therapy (if needed) are recommended and a review of the triggers, unless the clinical history reveals alarm features (Table 4).

Constipation-predominant IBS

At initial presentation, patients with suspected constipation-predominant IBS should undergo investigation to exclude hypothyroidism, hypercalcaemia, depression, dehydration and drug effects (e.g. opioids, calcium channel blockers, anticholinergics) before a diagnosis of IBS/FBD is made.

It is important to remember that patients aged over 50 years with new onset altered bowel habit warrant colonoscopy to exclude neoplasia.

Diarrhoea-predominant IBS

At initial presentation, patients with the diarrhoea-predominant subtype may warrant investigation to exclude inflammatory or malabsorptive disease, starting with a full blood count, erythrocyte sedimentation rate/C-reactive protein and serological tests for coeliac disease, especially if symptoms are of recent

onset. A loose stool specimen should be sent for microscopy and culture, as well as examining for cysts, ova and parasites. If malabsorption or osmotic/secretory diarrhoea is suspected based on history, a 24-hour stool specimen is useful as stool weight should be less than 300 g a day in patients with IBS and stools should not have increased faecal fat.

Flexible sigmoidoscopy with mucosal biopsies is appropriate only in patients with severe or large volume diarrhoea to look for colitis.

Abdominal pain

Although pain and/or discomfort associated with disturbed bowel function is the hallmark of IBS, certain pain characteristics are atypical and may dictate further investigation. Constant pain with radiation to the back and 'biliary type' right upper quadrant pain should usually lead to imaging with either ultrasound or CT scan.

Treatment

The aim of IBS/FBD management is to optimise functional status and minimise reliance on health care input, while recognising and treating associated psychological or psychiatric comorbidity.

Effective management is based on a sound therapeutic relationship between doctors and patients because patients with positive physician interactions have fewer follow-up visits for IBS.¹⁹ Education about IBS/FBD should be nonjudgemental, promote realistic expectations and involve patients in treatment decisions.²⁰ Reassurance that a normal life span is usual and that IBS does not lead to other gastrointestinal illnesses is important, along with the provision of written information.¹⁹ Exploration of current emotional stressors often explains the timing of presentation with IBS/FBD symptoms, and often identifies specific patient fears such as that of bowel cancer, which can then be put into perspective.

The heterogenous nature of FBDs as a

Table 4. Alarm features for IBS warranting further investigation

- Age over 40 years at symptom onset
- Family history of inflammatory bowel disease, coeliac disease or colorectal cancer
- Significant weight loss
- Anaemia or iron deficiency
- Malnutrition
- Gastrointestinal blood loss
- Nocturnal symptoms
- Severe, large volume diarrhoea, (especially if faecal incontinence)
- Short history of symptoms or significant change in symptoms
- Fever
- Steatorrhoea
- Severe pain
- Perianal disease
- Abnormality on physical examination (e.g. abdominal mass, abdominal wall pain)

group of disorders means that treatment must be individualised; it frequently involves trials of different modalities until an optimal management plan is recognised for each patient. Evidence exists for dietary modification, psychological treatments, medications and some alternative therapies (see the box on page 38 for an approach to IBS management based on symptom severity).

Diet

Dietary management is best individualised using a food diary to identify relationships between bowel symptoms and certain dietary components. All patients may benefit from dietitian referral to assist in this process. A dietary history is important and should focus on meal patterns and fluid intake as well as intake of dairy, fruit, wheat, fat, fibre, alcohol, caffeine and

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An approach to IBS management based on symptom severity

Mild – no psychological problems and infrequent symptoms

Reassurance, education and consider dietary modification, with or without fibre supplementation.

Moderate – disrupted normal daily activities due to symptoms, with or without psychological disturbance

Food and mood diary to identify precipitating foods (such as lactose, fructose and caffeine) or specific stressors. Diet change and psychotherapy may help.

Short-term targeted medication may be appropriate if symptoms are not controlled with simple measures.

Severe – intractable symptoms, functional impairment with frequent presentations and underlying psychological disturbance

Behavioural modification and psychoactive drugs are often required in the longer term in this group of patients.

gas-producing foods, which are often associated with symptoms (Table 5). Some patients benefit from trialling a lactose-free and wheat-free diet, or a low fructose diet in cases of fructose intolerance.²¹

Recent Australian data suggest that in patients with IBS and an intolerance to fructose, restriction of dietary fructans and fructose and other foods high in fermentable oligosaccharides, disaccharides, monosaccharides and polyols (FODMAPS) results in significant symptomatic improvement.^{22,23} The mechanism of such improvement is thought to be a reduction in fermentable gas content and therefore reduced luminal distension, which often correlates with symptoms of IBS. Foods high in FODMAPS include fruits, honey,

some corn syrup, wheat and onions.^{22,23}

The aim of dietary modification in IBS is to substitute nutritious alternatives for foods associated with symptoms, ideally under dietetic supervision. Extensive elimination diets have not been demonstrated to be of benefit and should be avoided.

A trial of fibre supplementation is worthwhile in all patients except those with bloating who may benefit from non-fermentable fibre. Although many patients report improvement with fibre supplementation, a significant proportion note worsening, and supplements should be stopped in this group.

Psychological and psychiatric intervention

The identification of axis 1 disorders such as major depressive and anxiety disorders is important and should prompt medical treatment and/or psychiatric referral.

Patients with more subtle psychological symptoms and stressors should be considered for relaxation training, cognitive behavioural therapy (CBT), interpersonal psychotherapy and hypnotherapy. These modalities are appropriate for motivated patients in whom a temporal relationship exists between emotional stressors and bowel symptoms, rather than those with overt psychiatric disease.

Drugs

Few patients require treatment beyond explanation, reassurance and dietary modification. Randomised IBS trials suggest the gain over placebo is only about 10 to 15% for most agents, whereas the placebo response is high at 40 to 50%,²⁴ supporting the greater power of the therapeutic relationship compared with discrete pharmacological interventions. As no medication is known to alter the course of IBS and adverse effects are recognised with all commonly used agents, drugs for IBS/FBD should be used on a when needed basis for the shortest period possible, targeting the main symptom and be individualised.

Table 5. Dietary recommendations for patients with IBS

- Keep a food diary – to identify individual dietary and lifestyle symptom triggers
- Trial fibre supplementation
- Restrict dietary fructans and fructose and other foods high in fermentable oligosaccharides, disaccharides, monosaccharides and polyols (FODMAPS). These foods include lactose, wheat, fruits, onions, honey, corn starch, some vegetables, sorbitol and other artificial sweeteners²³
- Avoid caffeine and alcohol
- Trial a low-fat diet
- Consider dietitian review

Medications should be trialled for three to six weeks; in the presence of progressive or changing symptoms, an IBS/FBD diagnosis should be reconsidered and further investigation contemplated. If IBS/FBD remains the most likely diagnosis and medication is ineffective at a reasonable dose, switching to a different agent should be tried. Once symptoms are well controlled, medical treatment should be ceased if possible.

Treating abdominal pain

The most commonly used agents for treating abdominal pain are antispasmodics, which promote smooth muscle relaxation. These include:

- hyoscine butylbromide 20 mg orally four times daily when needed
- mebeverine 135 mg orally three times daily when needed
- peppermint oil, one to two capsules orally, three times daily (should be taken 30 minutes before a meal otherwise this may worsen gastro-oesophageal reflux).

Low-dose tricyclic antidepressants (TCA) can be used as some evidence supports improved pain perception in patients with IBS, independent of antidepressant effect. Lower doses are used than that for the treatment of depression. TCAs should be avoided in patients with constipation.

Limited evidence also supports the use of selective serotonin reuptake inhibitors agents for IBS-related pain. At least four weeks of treatment is required before assessment of efficacy. Common agents include amitriptyline 10 to 50 mg orally at night or fluoxetine 20 mg orally daily (both off-label uses).

Treating diarrhoea

Exacerbations of IBS-related diarrhoea in adults can be managed by short-term use of the least toxic antidiarrhoeal agents. These include:

- loperamide 2 mg orally, once to three times daily as required or after each loose motion up to a maximum of eight tablets daily
- cholestyramine 4 to 8 g orally, once or twice daily.

Treating constipation

Simple measures such as increasing dietary fibre, fluid intake and physical exercise should be initiated in patients with constipation. Laxatives may then be added in nonresponders, avoiding the use of stimulant laxatives where possible and long-term use of any agent, although chronic therapy is preferable to faecal loading.

Bulking agents should be first line – for example, psyllium powder one to two teaspoons one to three times daily taken orally although some patients with prominent bloating may tolerate nonfermentable fibre better (e.g. sterculia). This can be followed by osmotic laxatives if constipation can be objectively confirmed. Osmotic laxatives include:

- lactulose syrup 15 to 30 mL one to two times daily orally
- sorbitol 20 mL one to three times daily orally
- macrogol 3350 with electrolytes, one to two sachets dissolved in water once daily
- sodium picosulfate preparations (e.g. sodium picosulfate powder, one sachet dissolved in 120 mL water; adults to drink 60 to 120 mL of the solution as a once-off dose).

Stool softeners such as docusate 120 mg twice daily orally can also be used in patients with constipation.

Alternative therapies

Alternative therapies are reviewed in detail elsewhere.²⁵ Summary comments only are included below.

Probiotics

Probiotics may be beneficial in patients reporting bloating and flatulence as predominant symptoms. However, further studies

continued

Table 6. When to refer patients for specialist review

- Alarm features (see Table 4)
- Diagnostic uncertainty
- Persistent patient concerns despite GP consultation

Table 7. Behavioural features helpful in identifying patients with IBS in general practice²⁶

- Symptoms for more than six months
- Frequent consultations for nongastrointestinal symptoms or minor illness
- Multiple somatic complaints
- Previous medically unexplained symptoms
- Abnormal illness behaviour in response to stress

are needed before particular preparations and dosages can be recommended.

Herbal preparations

Many herbal agents are marketed towards IBS. Some improve IBS symptoms and overall wellbeing but the active ingredients responsible for such improvement remain undefined.²⁶

Acupuncture

Although acupuncture has been used to treat IBS, there are no convincing data to support this practice.

When to refer for specialist review

The presence of alarm symptoms, uncertainty about the diagnosis of IBS/FBD, or patient concerns that persist after GP consultation are indications for specialist referral (Table 6).

Internet resources on IBS for patients

Gastroenterological Society of Australia

www.gesa.org.au (patient leaflets regarding IBS and diet are available on this website)

Up To Date For Patients

www.uptodate.com/patients

Irritable Bowel Information and Support Association of Australia

www.ibis-australia.org

Gastro net – Diet for Irritable Bowel Syndrome

www.gastro.net.au/diets/irritablebowel.html

Conclusion

IBS and other FBDs are very common in our community, although only a proportion of people with these conditions ever present for management.^{27,28} Patients presenting with de-novo ‘probable FBD/IBS’ need careful psychological as well as medical assessment to uncover emotional stressors determining the timing of presentation (Table 7).²⁶ Useful web resources on IBS for patients are shown in the box on this page.

A careful clinical history and well-validated criteria allow a positive diagnosis to be made in most patients with a minimum of investigations. Once a diagnosis is established and relevant ‘organic’ pathology excluded (if necessary), therapeutic options include reassurance, education, dietary modification, medications and psychological approaches, depending on the patient’s unique symptom profile.

The long-term relationship that a GP has with a patient and his or her family is a unique therapeutic environment, allowing the GP to have a heightened awareness of a patient’s social context. This places GPs in an excellent position to manage functional gastrointestinal disorders.

The challenging and complex nature of FBD/IBS means that planning longer consultations (30 minutes) for patients with these conditions is likely to be beneficial in improving patient satisfaction and reducing re-presentation rates. **MT**

References

A list of references is available on request to the editorial office.

COMPETING INTERESTS: Associate Professor Andrews has been involved in conducting partially supported studies for Ardeypharm, Steigerwald, Nycomed and AstraZeneca, all of whom have products that are used in functional gastrointestinal disorders. She has given paid educational lectures for Nycomed and AstraZeneca, received travel support from them and been involved in consultancies. Dr Mountfield: None.

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