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Irritable bowel syndrome (IBS) in the older adult offers challenges for diagnosis and treatment; however, very little research has been done in this regard. IBS has significant impact on the quality of life, especially in frail individuals. The diagnostic criteria have not been validated in older subjects. Diagnostic strategy needs to be modified to account for the expanded list of differential diagnosis, including high prevalence of colorectal cancer. There is a lack of evidence related to the efficacy of the treatment regimens used. Therapy should focus on specific symptoms and be matched for the potential for side effects and drug interactions. The prognosis for IBS is excellent and in a majority of cases symptoms disappear within five years.

Key words: Irritable bowel syndrome, Functional bowel disorder, Rome II criteria, older adults, spastic colon



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Introduction

Irritable bowel syndrome (IBS) is a prevalent yet poorly understood disorder. Older IBS patients have a high prevalence of numerous disabling rheumatological, neurological, and cardiovascular disorders that can impact on clinical presentation and management. Factors like dementia, polypharmacy, undernutrition, incontinence, and failure to thrive further complicate the overall picture. As a result, epidemiology and clinical presentations of IBS in older adults remain to be well established.

Epidemiology

IBS is the most common reason for referral to gastroenterologists in the US. While the overall prevalence of IBS is 10–20%, IBS in the older population is about 10%.^{1,2} The disorder accounts for 12% of primary care visits and 28% of all referrals to the gastroenterologist. Aging patients with fecal soiling are more likely to seek help.

A majority of the patients present in the third or fourth decade of life. IBS occurs predominantly in females, at least

in Western society. Data from Eastern cultures like India suggest a male predominance; the reasons for the discrepancy remain controversial.

Etiopathogenesis

The pathophysiology of IBS remains uncertain. Abnormal gastrointestinal motility, visceral hypersensitivity, psychological dysfunction, infections, food sensitivities, and emotional stress have been documented in many patients.^{3–6} Despite a plethora of investigations, no single abnormality has been demonstrated to be specific to IBS.

Many patients demonstrate increased anxiety, depression, phobias, and somatization although they may not meet the criteria for a major psychiatric diagnosis. Psychological distress does not cause IBS but may influence how patients cope with symptoms.

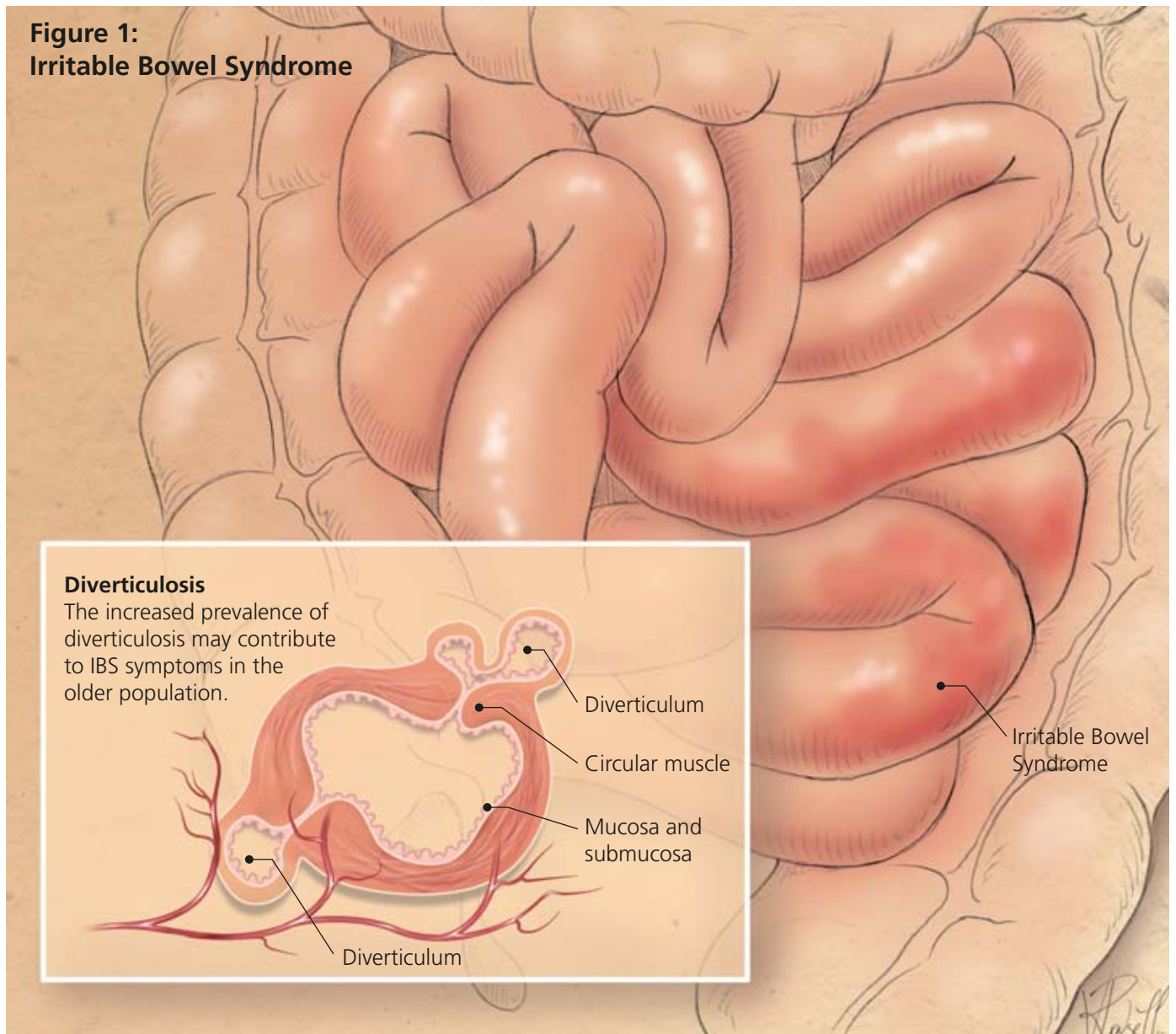
Aging results in a decreased number of neurons in the myenteric plexus along with a concurrent increase in deposition of collagen in the colon. This results in impaired response of the senescent colonic muscle to excitatory factors. The uncoordinated colonic motility may lead to symptoms of IBS, suggesting impaired control of neuromuscular function.³

No single marker of dysmotility has been established for IBS. However, the gut's performance in the frail older patient is significantly impaired. Visceral hyperalgesia is found in a subset of patients. It is not specific to the colon but can be demonstrated at different sites in the gut.

The increased prevalence of diverticulosis may contribute to IBS symptoms in the older population (Figure 1). Older females have a higher incidence of constipation due to the failure of the anorectal angle to open or excessive perineal descent. Neurologic disorders like stroke and Parkinson's disease may increase the defecatory disturbances.

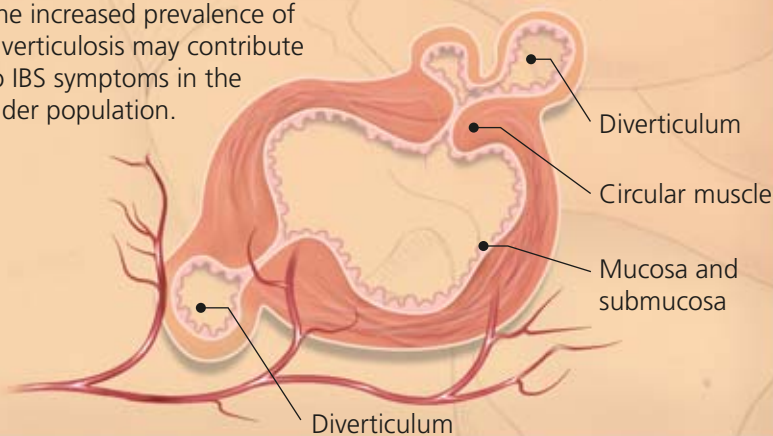
Some patients demonstrate mucosal immune system activation that is also seen in patients with presumed post-infectious IBS. Post-dysenteric bowel disturbance is observed

**Figure 1:
Irritable Bowel Syndrome**



Diverticulosis

The increased prevalence of diverticulosis may contribute to IBS symptoms in the older population.



less frequently in older IBS patients than their younger counterparts.

Small bowel bacterial overgrowth (SBBO) is common among IBS patients and presents a high risk for the older population. A unified hypothesis postulates that many if not all clinical aspects of IBS could be due to SBBO.⁷

Diagnostic Criteria

IBS is characterized by a constellation of symptoms including chronic and recurrent abdominal pain, plus a disturbance of bowel habits unexplained by structural or metabolic derangements. Commonly used criteria have been based on different populations. As such, the applicability of definitions of IBS in older adults remains unproven. Previously used diagnostic criteria have been replaced by Rome II criteria as the criteria of choice.^{8,9} Rome II

criteria define IBS as symptoms for at least 12 weeks in the preceding 12 months of abdominal discomfort or pain associated with at least two of the following features: relief with defecation; onset associated with change in stool frequency; or onset associated with change in stool appearance or form (e.g., hard or loose).

Features that support the diagnosis include abnormal stool frequency (less than three per week or more than three per day), association with mucous, straining, urgency, or incomplete evacuation of stool, bloating, and abdominal distention.

Clinical Features of IBS Unique to Older Adults

It is helpful to divide aging patients into young-old, old-old, and frail-old categories. While the pattern of IBS symptoms

Table 1: Diagnostic Options for Irritable Bowel Syndrome*

IBS-Constipation Predominant	IBS-Diarrhea Predominant
Complete blood count, serum chemistries	Complete blood count, serum chemistries
Thyroid function tests	Stool for ova & parasites, WBC, electrolytes, pH, fat, occult blood, laxative screen
Colonoscopy	Colonoscopy
Colonic transit marker study	Serologies for celiac sprue
Anorectal manometry and defecography	Exclude SBBO (therapeutic trial, jejunal aspirate, 14-C-d-xylose test, or hydrogen breath test)

* The use of the tests above needs to be individualized based on the clinical situation. Patients with significant abdominal pain should have a CT scan at the abdomen and pelvis.

is not altered amongst young-old, the gastrointestinal system is significantly impaired in frail and/or disabled subjects. The gut function can decline precipitously in the face of minor illness, especially in old-old and old-frail patients. Presence of other medical and post-surgical conditions, polypharmacy, and alterations in pain perception as well as poor localization frequently cloud the usual classic clinical presentation.

Defecatory manifestations are usually intermittent and include constipation, diarrhea, or alternating diarrhea with constipation, although there is a predominance of constipation in the aged. Abdominal pain may be poorly localized to the mid and lower abdomen and relieved by defecation or passage of flatus.

Older women have increased prevalence of perineal descent, which may be associated with incomplete evacuation. Rectal urgency and fecal incontinence are more common among older IBS sufferers. They also have a higher incidence of increased urinary frequency, urgency, nocturia, and bladder instability.

Differential Diagnosis

High prevalence of gastrointestinal malignancies, mesenteric ischemia, thyroid dysfunction, diabetes mellitus, depression, constipation, and autonomic neuropathy make the exclusion of organic diseases more important in older adults. Exclusion of colorectal cancer is important since most cases occur in individuals above 50 years of age.

Recent onset and progressive rather than chronic stable symptoms, nocturnal pain or defecation, fever, vomiting, hematochezia, and unintentional weight loss suggest organic etiology. Chronic prostatitis in older males may lead to intermittent loose stools, passage of mucous, abdominal pain, as well as a sense of incomplete evacuation.

Laboratory abnormalities such as anemia, leukocytosis, electrolyte derangements, abnormal liver or thyroid function

tests, coagulopathy, and positive stool occult blood tests warrant investigations in pursuit of an alternate diagnosis.

Small bowel bacterial overgrowth may occur without any anatomic or post-surgical changes. For example, older adults are at higher risk for SBBO because of dysmotility due to systemic diseases (diabetes mellitus, scleroderma) and/or medications (calcium channel blockers), as well as gastric hypochlorhydria due to atrophic gastritis or long-term therapy with proton pump inhibitors.

Evaluation Strategy

The diagnosis of IBS is clinical and based on thorough history and physical examination. Further evaluation is aimed at excluding other causes (for diagnostic options for irritable bowel syndrome, see Table 1). Complete blood count, chemistry panel, thyroid function tests, as well as colonoscopy to exclude colorectal neoplasia are recommended in all patients. Erythrocyte sedimentation rate and C-reactive protein levels have been recommended by others but we have not found them useful.

Check stools for parasites and their ova in patients with diarrhea. Consider further tests to exclude SBBO or a therapeutic trial with antibiotics (e.g., ciprofloxacin). A plain x-ray of the abdomen and a colonic transit marker study may be helpful in patients with constipation.

In case of lack of response to initial management, advanced testing may be undertaken. Consider small bowel x-ray series, stool for osmotic gap, and lactose hydrogen breath test in patients with diarrhea. Serologies for celiac sprue may help since the disease may manifest for the first time in older patients. A CT scan of abdomen/pelvis and tests for liver and pancreatic enzymes, and lactose hydrogen breath test may provide clues in patients with pain as the predominant symptom. The role of anorectal manometry and defecography in patients with constipation is controversial.

Treatment Strategy

Treatment tends to be largely empiric. The young-old patients need to be approached the same way as younger patients. The old-frail patients provide a greater challenge because the risks of many interventions may outweigh the benefits.

General Measures

Protocols for presenting the IBS diagnosis include the provision of reassurance and explanation about the disease to the patient, including the precipitating and psychological factors. Written instructions should be provided for medications since cognitive impairment may be present. Patients may associate food intake with IBS symptoms and consequently reduce their oral intake. A full dietary history should be undertaken in order to avoid or to treat undernutrition.

A food diary may also help in identifying any offending food. Dietary exclusions followed by sequential reintroduction of suspected foods (including caffeine, alcohol, tomatoes, onions, chili peppers, spicy foods, low-carb or low-calorie candies, and beverages and chewing gums containing non-absorbable sugars such as sorbitol or mannitol) may provide relief in up to half the cases. A trial of lactose avoidance may help in patients with diarrhea. An anti-gas diet (avoidance of foods such as cabbage, legumes, etc.) may help patients complaining of excess gas. A regular physical exercise program consistent with the patient's physical abilities increases feeling of wellness.

High Fibre and Fluid Intake

High fibre (20–30g/d) and increased fluid (unless otherwise restricted) are recommended. High fibre intake may increase bloating, however, and should be increased in small amounts to minimize intolerance. Although recommended as initial treatment in all cases, fibre has not been shown to be of benefit in diarrhea-predominant IBS. Since there is a placebo response of about 50% in IBS, fibre plus fluids are an inexpensive way to achieve relief for many patients.

Older patients have reduced thirst and taste sensation, which predisposes them to dehydration. Patients sometimes restrict their fluid intake because of urinary problems. Adequate fluid intake is especially important when a high-fibre diet is recommended, since inadequate water intake can worsen dehydration while causing hardening of stools and impaction.

Medications

Older IBS patients are more likely to be treated with drugs than their younger counterparts. The drugs should be matched to the patient's risk for falls, confusion, urinary problems, and cardiac arrhythmias. A list of pharmacotherapeutic agents for the treatment of IBS is presented in Table 2.

Loperamide is effective in cases of diarrhea but not for pain. It is safe, provided impaction has been excluded. Alosetron is also effective in diarrhea-predominant IBS; however the side effect profile limits its use in older patients, however.

Tegaserod is effective in constipation-predominant IBS. Stool softeners (e.g., docusate) and laxatives (e.g., polyethylene glycol, senna, magnesium hydroxide, lactulose) are used intermittently as needed in constipated patients. Caution should be exercised while prescribing magnesium-containing compounds for constipation in the frail-old, even with modest elevation of serum creatinine.

Smooth muscle relaxants (dicyclomine and hyoscyamine) are used when pain is the predominant symptom, although their effectiveness remains controversial because the data has been conflicting.

Tricyclic antidepressants (imipramine 25–50mg/d) are effective, particularly for treatment of diarrhea-predominant IBS. They also raise pain threshold, resulting in improvement of abdominal pain. However, they too have high potential for adverse events in older adults.¹⁰ Many antispasmodics and antidepressant agents possess anticholinergic side effects, including cardiac arrhythmias, confusion, urinary retention, dry mouth, and blurred vision. They should be started at a

Table 2: Pharmacotherapy of Irritable Bowel Syndrome

IBS-Constipation Predominant	IBS-Diarrhea Predominant	IBS-Pain
Fibre (20–30 g/d)	Smooth muscle relaxants (hyoscyamine, dicyclomine)	Smooth muscle relaxants (hyoscyamine, dicyclomine)
Laxatives (lactulose, polyethylene glycol solution, bisacodyl); avoid magnesium-containing laxatives in renal insufficiency	Antidiarrheal (loperamide, cholestyramine)	Tricyclic antidepressants (desipramine, imipramine)
Tegaserod	Tricyclic antidepressants (desipramine, imipramine)	SSRIs (fluoxetine, paroxetine)
	Alosetron* (best avoided in older adults)	

* Not available in Canada

lower than usual dose, especially in patients with ischemic heart disease. An EKG should be checked during dose escalation, especially for frail-old patients.

Anticholinergics should be avoided in patients with cognitive impairments as they can cause altered behaviour and cognitive deterioration. Psychotropic agents should be avoided in patients at risk for falls, since they may increase the risk of falls threefold. Newer antidepressants (e.g., paroxetine 10–20mg/d) have fewer side effects; however, they have not been well studied in IBS.

Alternative Medicine

Probiotics help to ameliorate IBS symptoms by modifying colonic flora. Yogurt with live cultures may be a good method of providing healthy nutrition in addition to probiotics.

One randomized controlled trial of Ayurvedic medicines showed improvement in 65% of IBS patients compared to 32% taking placebo.¹¹ Chinese herbal medicine is helpful in IBS; however, physicians should be aware of the increased potential for drug-interactions in patients taking multiple medications.¹² The role of acupuncture appears promising. Patients without cognitive impairment benefit from cognitive-behavioural therapy, relaxation exercises, and IBS classes.¹³

Natural History and Prognosis

IBS has a uniformly good prognosis. Symptoms disappear over a few years in a majority of cases.¹ Close attention to diagnostic and therapeutic plans is necessary to avoid compounding a functional decline that occurs with aging.

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