

Irritable Bowel Syndrome

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- IBS is a functional bowel disorder characterized by abdominal pain or discomfort and altered bowel habits in the absence of detectable structural abnormalities

- Most common conditions encountered in clinical practice (10–20% of adults)
- Female predominance
- Overlap with other functional disorders (fibromyalgia, headache, backache...)
- Impair quality of life

Table 290-1 Diagnostic Criteria for Irritable Bowel Syndrome^a

Recurrent abdominal pain or discomfort^b at least 3 days per month in the last 3 months associated with *two or more* of the following:

1. Improvement with defecation
2. Onset associated with a change in frequency of stool
3. Onset associated with a change in form (appearance) of stool

^aCriteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis.

^bDiscomfort means an uncomfortable sensation not described as pain. In pathophysiology research and clinical trials, a pain/discomfort frequency of at least 2 days a week during screening evaluation is required for subject eligibility.

Clinical Features

- Affects all ages
- Women two to three times as often as men & 80% of the population with severe IBS
- Painless diarrhea or constipation does not fulfill the diagnostic criteria
- Supportive symptoms that are not part of the diagnostic criteria :

straining,

urgency

feeling of incomplete bowel movement,

passing mucus,

bloating

Abdominal Pain

- Pain or abdominal discomfort is a key symptom
- Highly variable in intensity and location
- Hypogastrium (25%)
- Right side (20%)
- Left side in (20%)
- Epigastrium in (10%)
- Episodic and crampy
- Mild enough to be ignored or it may interfere with daily activities

- Malnutrition is exceedingly rare
- Sleep deprivation is unusual
- Severe IBS frequently wake repeatedly
- Nocturnal pain is a poor discriminating factor between organic and functional bowel disease
- Exacerbated by eating or emotional stress
- Improved by defecation
- Worsening symptoms during the premenstrual phases.

Altered Bowel Habits

- Most common pattern is constipation alternating with diarrhea
- Sense of incomplete evacuation
- Weeks or months of constipation interrupted with brief periods of diarrhea
- Volumes of < 200 mL
- *Mucous colitis* has been used to describe

- Bleeding is not a feature of IBS unless hemorrhoids are present,
- No malabsorption or weight loss
- ~33% prevalence rates of IBS-diarrhea predominant (IBS-D), IBS-constipation predominant (IBS-C), and IBS-mixed (IBS-M)
- 75% of patients change subtypes
- 29% switch between IBS-C and IBS-D over 1 year

Gas and Flatulence

- Abdominal distention and increased belching or flatulence,
- IBS patients generate no more than a normal amount of intestinal gas
- Impaired transit and tolerance of intestinal gas loads
- Reflux gas from the distal to the more proximal intestine

Upper Gastrointestinal Symptoms

- 25 - 50% of patients complain of dyspepsia, heartburn, nausea, and vomiting
- Abnormalities in the small bowel during the waking period; nocturnal motor patterns are not different from those of healthy controls
- It is conceivable that functional dyspepsia and IBS are two manifestations of a single, more extensive digestive system disorder

Pathophysiology

- Altered GI motility,
- Visceral hyperalgesia,
- Disturbance of brain-gut interaction,
- Abnormal central processing,
- Autonomic and hormonal events,
- Genetic and environmental factors,
- Psychosocial disturbances

- Increased rectosigmoid motor abnormalities are prominent under stimulated conditions
- Inflation of rectal balloons both in IBS-D and IBS-C patients leads to marked distention-evoked contractile activity
- In transverse, descending, and sigmoid colon, the high-amplitude propagating contractions (HAPCs) in diarrhea-prone IBS patients were greatly increased

- exaggerated sensory responses to visceral stimulation
- Rectal balloon inflation produces nonpainful and painful sensations at lower volumes,
- Similar studies show gastric and esophageal hypersensitivity in patients with NUD, raising the possibility that these conditions have a similar pathophysiologic basis

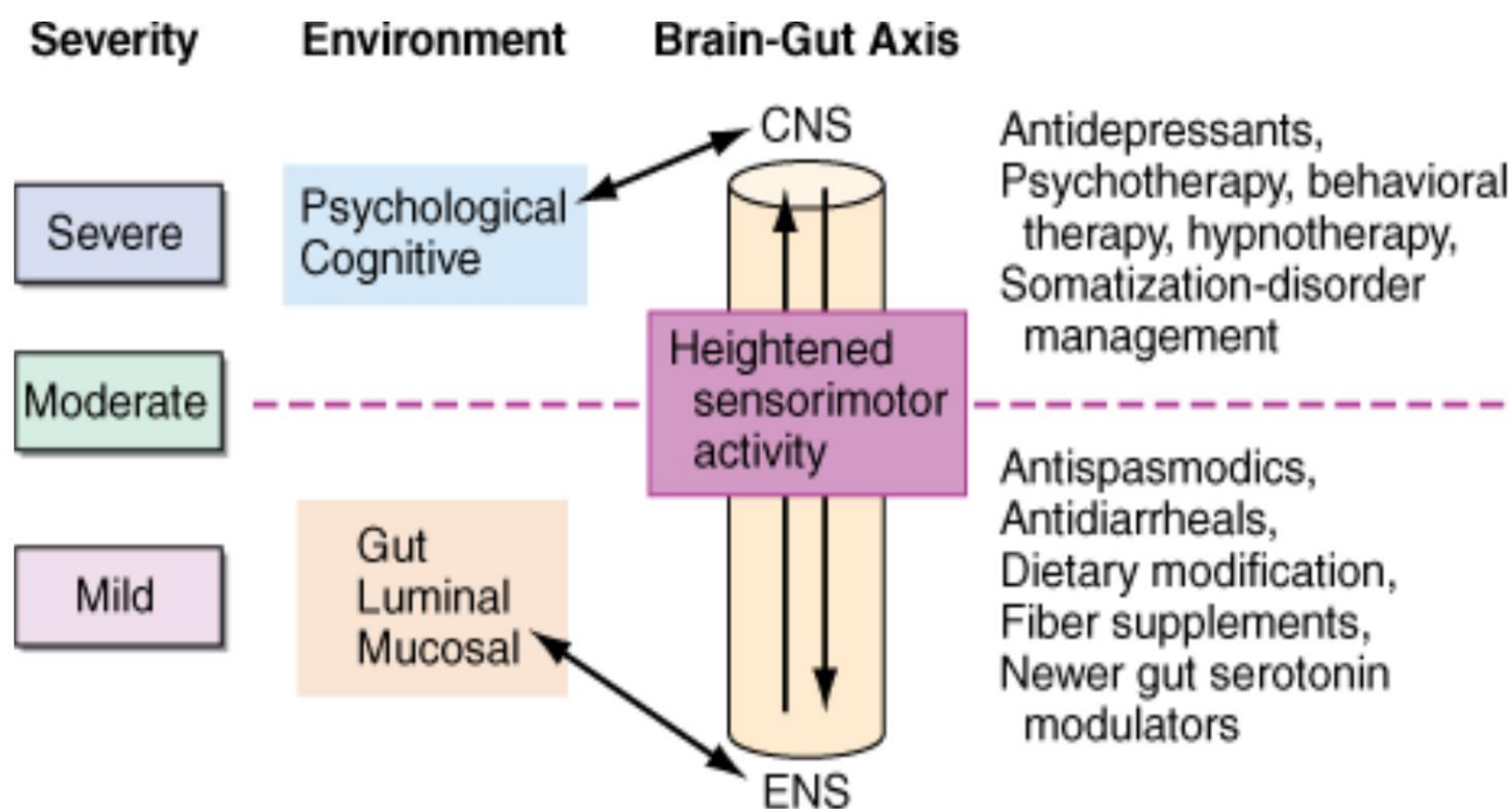
- Lipids lower the thresholds for the first sensation of gas, discomfort, and pain
- Afferent pathway disturbances in IBS appear to be selective for visceral innervation with sparing of somatic pathways

Proposed Mechanisms for Visceral Hypersensitivity

- End-organ sensitivity
- Long-term hyperalgesia
- "Silent" nociceptors
- Tonic cortical regulation
- CNS modulation
- Neuroplasticity
- Cortex
- Brainstem

- Mid-cingulate cortex, a brain region concerned with attention processes and response selection, shows greater activation
- Cerebral dysfunction leading to the increased perception of visceral pain
- Psychological factors influence pain thresholds
- Association between prior sexual or physical abuse and development of IBS

- Increased motor reactivity of the colon and small bowel to a variety of stimuli and altered visceral sensation associated with lowered sensation thresholds.
- These may result from CNS–enteric nervous system dysregulation



- "postinfective" IBS occurs more commonly in younger females
- *Campylobacter*, *Salmonella*, and *Shigella*
-
- (5HT)-containing enterochromaffin cells in the colon are increased in a subset of IBS-D patients
- Also postprandial plasma 5HT plasma levels were significantly higher

Approach to the Patient

- Diagnosis relies on recognition of positive clinical features and elimination of other organic diseases
- Clinical features suggestive of IBS include :
 - Abdominal pain with altered bowel habits without progressive deterioration,
 - Onset of symptoms during periods of stress
 - No systemic symptoms (fever and weight loss)
 - Small-volume stool without blood

Alarm features

- Onset of the disorder in old age,
- Progressive course,
- Persistent diarrhea after a 48-h fast,
- Nocturnal diarrhea or steatorrhea argue
- Anemia,
- Elevated sedimentation rate,
- Leukocytes or blood in stool,
- Stool volume >200–300 mL/d

- Few tests are required for patients who have typical IBS symptoms and no alarm features
- Younger individual with mild symptoms requires a minimal diagnostic evaluation, while an older person or an individual with rapidly progressive symptoms should undergo a more thorough exclusion of organic disease

- Patients should have a CBC and sigmoidoscopic examination;
- S/E in IBS-D.
- In those >40 years, an air-contrast barium enema or colonoscopy
- lactase deficiency should be ruled out with a hydrogen breath test or a 3-week lactose-free diet
- Testing for celiac sprue in IBS-D
- With concurrent symptoms of dyspepsia, upper GI radiographs or endoscopy

Treatment

- Reassurance and careful explanation of the functional nature of the disorder and of how to avoid obvious food precipitants are important first steps
- Eliminate any foodstuffs that appear to produce symptoms

Stool-Bulking Agents

- High-fiber diets and bulking agents speeds up colonic transit
- Because of their hydrophilic properties, stool-bulking agents bind water and thus prevent both excessive hydration or dehydration of stool. This may explain the clinical experience that a high-fiber diet relieves diarrhea
- Fiber may have positive affect on visceral afferent function

- Benefits in patients with alternating diarrhea and constipation, pain, and bloating
- No responses in patients with diarrhea- or pain-predominant IBS
- Stool-bulking agents worth trying in patients with IBS-C

Antispasmodics

- temporary relief for symptoms such as painful cramps related to intestinal spasm
- beneficial effects of anticholinergic drugs for pain
- synthetic anticholinergics such as dicyclomine that have fewer undesirable side effects

Antidiarrheal Agents

- Peripherally acting opiate-based agents are the initial therapy of choice for IBS-D
- increases in segmenting colonic contractions, delays in fecal transit, increases in anal pressures, and reductions in rectal perception
- loperamide, 2–4 mg every 6 h up to 12 g/d
- bile acid binder: cholestyramine

Antidepressant Drugs

- In IBS-D patients, imipramine slows jejunal migrating motor complex transit propagation and delays orocecal and whole-gut transit, indicative of a motor inhibitory effect
- desipramine showed improvement in diarrhea, pain, and depression
- benefits for the bowel symptoms occur faster and at a lower dosage
- selective serotonin reuptake inhibitor (SSRI) paroxetine accelerates orocecal transit, may be useful in IBS-C

Antiflatulence Therapy

- aerophagia or disaccharidase deficiency
- dietary exclusion trial
- exercising, losing excess weight, and taking activated charcoal
- simethicone
- Antibiotics, probiotics
- Pancreatic enzymes after high-calorie, high-fat meal ingestion
- Tegaserod

Summary

- treatment strategy of IBS depends on the severity of the disorder