

1880 Prescription Drugs Prescription drugs for GI diseases are a major focus of attention from pharmaceutical companies. Potent acid suppressants, including drugs that inhibit the proton pump, are advocated for acid reflux when over-the-counter preparations are inadequate. Cytoprotective agents rarely are used for upper gut ulcers. Prokinetic drugs stimulate GI propulsion in gastroparesis and pseudoobstruction. Prosecretory drugs are prescribed for constipation refractory to other agents. Prescription antidiarrheals include opiate drugs, anticholinergic antispasmodics, tricyclics, bile acid binders, and serotonin antagonists. Antispasmodics and antidepressants also are useful for functional abdominal pain, whereas narcotics are used for pain control in organic conditions such as disseminated malignancy and chronic pancreatitis. Antiemetics in several classes reduce nausea and vomiting. Potent pancreatic enzymes decrease malabsorption and pain from pancreatic disease. Antisecretory drugs such as the somatostatin analogue octreotide treat hypersecretory states. Antibiotics treat ulcer disease secondary to *Helicobacter pylori*, infectious diarrhea, diverticulitis, intestinal bacterial overgrowth, and Crohn's disease. Some cases of irritable bowel syndrome (especially those with diarrhea) respond to nonabsorbable antibiotic therapy. Anti-inflammatory and immunosuppressive drugs are used in ulcerative colitis, Crohn's disease, microscopic colitis, refractory celiac disease, and gut vasculitis. Chemotherapy with or without radiotherapy is offered for GI malignancies. Most GI carcinomas respond poorly to such therapy, whereas lymphomas may be cured with such intervention.

Alternative Therapies Alternative treatments are marketed to treat selected GI symptoms. Ginger, acupuncture, and acustimulation have been advocated for nausea, whereas pyridoxine has been investigated for nausea of first-trimester pregnancy. Probiotics containing active bacterial cultures are used as adjuncts in some cases of infectious diarrhea and irritable bowel syndrome. Probiotics that selectively nourish benign commensal bacteria may ultimately show benefit in functional disorders as well. Low-potency pancreatic enzyme preparations are sold as general digestive aids but have little evidence to support their efficacy.

ENTERIC THERAPIES/INTERVENTIONAL ENDOSCOPY AND RADIOLOGY

Simple luminal interventions are commonly performed for GI diseases. Nasogastric tube suction decompresses the upper gut in ileus or mechanical obstruction. Nasogastric lavage of saline or water in the patient with upper GI hemorrhage determines the rate of bleeding and helps evacuate blood prior to endoscopy. Enteral feedings can be initiated through a nasogastric or nasoenteric tube. Enemas relieve fecal impaction or assist in gas evacuation in acute colonic pseudoobstruction. A rectal tube can be left in place to vent the distal colon in colonic pseudoobstruction and other colonic distention disorders.

In addition to its diagnostic role, endoscopy has therapeutic capabilities in certain settings. Cautery techniques can stop hemorrhage from ulcers, vascular malformations, and tumors. Injection with vasoconstrictor substances or sclerosants is used for bleeding ulcers, vascular malformations, varices, and hemorrhoids. Endoscopic encirclement of varices and hemorrhoids with constricting bands stops hemorrhage from these sites, whereas endoscopically placed clips can occlude arterial bleeding sites. Endoscopy can remove polyps or debulk lumen-narrowing malignancies. Endoscopic mucosal resection and radiofrequency techniques can remove or ablate some cases of Barrett's esophagus with dysplasia. Endoscopic sphincterotomy of the ampulla of Vater relieves symptoms of choledocholithiasis. Obstructions of the gut lumen and pancreaticobiliary tree are relieved by endoscopic dilatation or placement of plastic or expandable metal stents. In cases of acute colonic pseudoobstruction, colonoscopy is used to withdraw luminal gas. Finally, endoscopy is commonly used to insert feeding tubes.

Radiologic measures also are useful in GI disease. Angiographic embolization or vasoconstriction decreases bleeding from sites not amenable to endoscopic intervention. Dilatation or stenting with fluoroscopic guidance relieves luminal strictures. Contrast enemas can reduce volvulus and evacuate air in acute colonic pseudoobstruction. CT and ultrasound help drain abdominal fluid collections, in many cases obviating the need for surgery. Percutaneous transhepatic cholangiography relieves biliary obstruction when ERCP is contraindicated. Lithotripsy can fragment gallstones in patients who are not candidates for surgery. In some instances, radiologic approaches offer advantages over endoscopy for gastroenterostomy placement. Finally, central venous catheters for parenteral nutrition may be placed using radiographic techniques.

SURGERY

Surgery is performed to cure disease, control symptoms without cure, maintain nutrition, or palliate unresectable neoplasm. Medication-unresponsive ulcerative colitis, diverticulitis, cholecystitis, appendicitis, and intraabdominal abscess are curable with surgery, whereas only symptom control without cure is possible with Crohn's disease. Surgery is mandated for ulcer complications such as bleeding, obstruction, or perforation and intestinal obstructions that persist after conservative care. Fundoplication of the gastroesophageal junction is performed for severe ulcerative esophagitis and drug-refractory symptomatic acid reflux. Achalasia responds to operations to relieve lower esophageal sphincter pressure. Operations for motor disorders have been introduced including implanted electrical stimulators for gastroparesis and electrical devices and artificial sphincters for fecal incontinence. Surgery may be needed to place a jejunostomy for long-term enteral feedings. The threshold for performing surgery depends on the clinical setting. In all cases, the benefits of operation must be weighed against the potential for postoperative complications.

THERAPY DIRECTED TO EXTERNAL INFLUENCES

In some conditions, GI symptoms respond to treatments directed outside the gut. Psychological therapies including psychotherapy, behavior modification, hypnosis, and biofeedback have shown efficacy in functional bowel disorders. Patients with significant psychological dysfunction and those with little response to treatments targeting the gut are likely to benefit from this form of therapy.

345 Gastrointestinal Endoscopy

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Gastrointestinal endoscopy has been attempted for over 200 years, but the introduction of semirigid gastroscopes in the middle of the twentieth century marked the dawn of the modern endoscopic era. Since then, rapid advances in endoscopic technology have led to dramatic changes in the diagnosis and treatment of many digestive diseases. Innovative endoscopic devices and new endoscopic treatment modalities continue to expand the use of endoscopy in patient care.

Current flexible endoscopes provide an electronic video image generated by a charge-coupled device in the tip of the endoscope. Operator controls permit deflection of the endoscope tip; fiberoptic bundles or light-emitting diodes bring light to the tip of the endoscope; and working channels allow washing, suctioning, and the passage of instruments. Progressive changes in the diameter and stiffness of endoscopes have improved the ease and patient tolerance of endoscopy.