

mucus by the epithelial and mucous glands throughout the stomach. The thick mucus layer acts to diffuse acid from the lumen to the gastric mucosal surface, thus protecting the gastric epithelium. The stomach and the duodenum produce bicarbonate, decreasing acidity on the epithelial cells and thereby minimizing the effects of the low pH. When abnormalities in the protective barrier exist, the mucosa is vulnerable to damage by acid and pepsin. Exogenous factors, such as aspirin and NSAIDs, cause gastric ulcers by inhibition of prostaglandin synthesis.

Zollinger-Ellison syndrome is rare but may occur in children who have multiple, large, or recurrent ulcers. This syndrome is characterized by hypersecretion of gastric acid, intractable ulcer disease, and intestinal malabsorption caused by a gastrin-secreting tumor of the pancreas.

Diagnostic Evaluation

Diagnosis is based on the history of symptoms, physical examination, and diagnostic testing. The focus is on symptoms such as epigastric abdominal pain, nocturnal pain, oral regurgitation, heartburn, weight loss, hematemesis, and melena ([Box 22-5](#)). History should include questions relating to the use of potentially causative substances such as NSAIDs, corticosteroids, alcohol, and tobacco. Laboratory studies may include a CBC to detect anemia, stool analysis for occult blood, liver function tests (LFTs), sedimentation rate, or CRP to evaluate IBD; amylase and lipase to evaluate pancreatitis; and gastric acid measurements to identify hypersecretion. A lactose breath test may be performed to detect lactose intolerance.

Box 22-5

Characteristics of Peptic Ulcers

Neonates

Usually gastric and secondary ulcers

Commonly a history of prematurity, respiratory distress, sepsis, hypoglycemia, or an intraventricular hemorrhage