**Test Bank**

**MULTIPLE CHOICE**

1. A 47-year-old woman with a longstanding history of heartburn complains of severe heartburn. You make the diagnosis of gastroesophageal reflux disease (GERD). An upper endoscopy study is positive for Barrett’s esophagus. Which of the following correctly describes Barrett’s esophagus?

A. Replacement of the squamous epithelium of the esophagus with columnar epithelium

B. Replacement of the columnar epithelium of the esophagus with squamous epithelium

C. The presence of moderate-to-high grade dysplasia in the esophagus

D. The presence of low-to-moderate grade dysplasia in the esophagus

E. The presence of any stricture within the esophagus

**Answer**

A – Replacement of the squamous epithelium of the esophagus with columnar epithelium is correct. Barrett’s esophagus appears when the squamous epithelium of the esophagus is replaced by brownish metaplastic columnar epithelium extending up from the stomach in a tongue-like or circumferential fashion. Barrett’s esophagus is present in up to 10% of patients with chronic reflux and is associated with an increased risk of neoplasia.

**Other choices**

B – Replacement of the columnar epithelium of the esophagus with squamous epithelium is incorrect. Normal esophageal epithelium is squamous, and not columnar.

C – The presence of moderate-to-high grade dysplasia in the esophagus is incorrect. Esophageal dysplasia is thought to be premalignant, progressing from low to moderate to high grade dysplasia to carcinoma in situ, but does not describe Barrett’s esophagus.

D – The presence of low-to-moderate grade dysplasia in the esophagus is incorrect. Low or moderate grade dysplasia is not associated with Barrett’s esophagus.

E – The presence of any stricture within the esophagus is incorrect. Barrett’s esophagus is not described by esophageal stricture.

2. A 65-year-old woman with a history of congestive heart failure, osteoarthritis, and hypertension presents with pain and tenderness, which is relieved by food or antacids. Upper endoscopy reveals a gastric ulcer. Her current medications include digoxin, metoprolol, lisinopril, aspirin, and hydrochlorothiazide. Which of her medications is most likely to have contributed to her peptic ulcer disease?

A. Digoxin

B. Metoprolol

C. Lisinopril

D. Aspirin

E. Hydrochlorothiazide

**Answer**

D – Aspirin is correct. This patient is probably taking aspirin for her osteoarthritis. The risk of developing gastric ulcers is increased in all chronic nonsteroidal anti-inflammatory drug (NSAID) users. NSAIDs function as cyclo-oxygenase (COX) inhibitors, blocking prostaglandin production in the gastric mucosa. Prostaglandins are cytoprotective in the gastric mucosa preventing damage to the gastric mucosal barrier. Newer NSAIDs have been designed to reduce the risk of gastric complications of NSAID therapy.

**Other choices**

A – Digoxin has a variety of adverse effects, but does not predispose patients to peptic ulcer disease.

B – Metoprolol is a beta-blocker and beta blocking agents do not predispose patients to peptic ulcer disease.

C – Lisinopril is an angiotensin-converting enzyme (ACE) inhibitor and has not been linked to peptic ulcer disease.

E –Hydrochlorothiazide is a thiazide diuretic, and thiazides have not been linked to peptic ulcer disease.

3. A 45-year-old woman complains of episodic epigastric pain. She denies fevers, chills, diaphoresis, flushing, chest pain or shortness of breath. An upper endoscopy reveals severe and atypical peptic ulcer disease. Biopsy results are *Helicobacter pylori* negative and she denies taking NSAIDs. Continued workup should include serum levels of which of the following?

A. Serotonin

B. Gastrin

C. Vasoactive intestinal peptide (VIP)

D. Cholecystokinin (CCK)

E. Histamine

**Answer**

B – Gastrin is correct. Severe peptic ulcer disease in the absence of predisposing factors such as NSAID use or *H. pylori* infection should raise a suspicion for Zollinger-Ellison syndrome (also known as gastrinoma). In this syndrome gastrin-secreting gut tumors lead to hypergastrinemia and gastric acid hypersecretion.

**Other choices**

A –Serotonin has not been implicated in peptic ulcer disease.

C –VIP is incorrect. VIPomas are associated with watery diarrhea, leading to dehydration, but VIP, however, is not associated with peptic ulcer disease.

D – CCK is incorrect. It is produced by I cells in the small intestine and increases secretion of digestive enzymes from the pancreas and bile from the gallbladder, and is not associated with peptic ulcer disease.

E – Histamine is incorrect. Although histamine is an important secretagogue for gastric acid secretion, histamine excess is also associated with vasodilation, often leading to potentially fatal hypotension.