Peptic ulcer disease is a common ailment marked by ulcerations in the lining of the stomach, duodenum (small intestine), or esophagus. For years, doctors believed these ulcers were caused by stress or a diet of spicy foods. It is now known there are two proven causes of peptic ulcer disease: infection with a bacterium called *Helicobacter pylori* or the use of nonsteroidal anti-inflammatory drugs (NSAIDs), a group of medicines used to treat pain and inflammation.

Although *H. pylori* can be found in the stomach and duodenum and is not harmful to most people, if the bacteria are able to multiply within the mucous lining, they can cause inflammation and pain at the site of an ulcer. NSAIDs such as aspirin, ibuprofen, naproxen, ketoprofen, and others are excellent drugs to treat pain and inflammation. But when they are used in high doses or over an extended period to treat chronic pain caused by inflammation, such as arthritis, they can cause ulceration in the mucosal lining.

The primary symptom of peptic ulcer disease is pain. The type and location of the pain depends on where the ulcer is located. It can be felt anytime, but it is most common when the stomach is empty or during the night. Peptic ulcer pain is often described as a burning sensation in the chest. It can last for a few minutes or a few hours and is often relieved by eating food or drinking liquids. Along with pain, signs of a serious ulcer include nausea, vomiting, or blood in the vomit or stool.

Treatment is based on a determination of the cause of the ulcer. If an *H. pylori* infection is present, a drug regimen is prescribed that includes one or two antibiotics, an acid blocker or proton pump inhibitor to reduce exposure to acid, and a protectant for the mucous lining of the stomach. If no bacteria are present, a similar regimen is prescribed but without antibiotics. Most peptic ulcers heal within weeks if the treatment regimen is followed. These ulcers have a better chance of healing when irritants are eliminated, including smoking, caffeine and alcohol consumption, certain foods, and stress.

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Peptic ulcer disease is a common ailment. It is estimated that 500,000 people develop a peptic ulcer each year in the U.S. The most common causes for peptic ulcer formation are a bacterial infection with *Helicobacter pylori* and the use of nonsteroidal anti-inflammatory drugs (NSAIDs). *H. pylori* is the more common cause of *duodenal* (small intestine) ulcers, while NSAIDs are more likely to cause *gastric* (stomach) ulcers. *Esophageal* ulcers are the result of acid reflux from the stomach into the esophagus, typically seen in patients with gastroesophageal reflux disease.

**Symptoms and Diagnosis:** Risk factors for peptic ulcers include alcohol and caffeine (both are irritants to the mucous lining), smoking, and physical or emotional stress. Eliminating these factors is also an important part of treatment, since they can slow down the healing process.

Most peptic ulcers cause a burning, painful sensation somewhere between the upper chest and navel, although some patients do not report symptoms. The pain results from acid coming in contact with the open ulcer and is often relieved when the acid is diluted with food, beverages, or antacids. If an ulcer begins to bleed, the symptoms become more serious. The blood may show up in the patient’s vomit or stool. Blood in vomit appears either bright red or dark. Blood in the stool has been digested, making the stool black and sticky. The patient may complain of chest pain, dizziness, or feeling faint. These danger signs require a doctor’s immediate evaluation, since a bleeding ulcer can be a medical emergency.

An ulcer is diagnosed using one or more tests, including an upper gastrointestinal (GI) x-ray after the patient swallows a liquid that contains barium. The barium liquid coats the inside of the GI tract and allows the x-ray to show the location of an ulcer. The most accurate test for diagnosis of an ulcer is *endoscopy*. Endoscopy is a procedure that allows the doctor to look at the inside of the esophagus, stomach, and duodenum through a thin tube with a tiny camera on one end, inserted down the throat when the patient is sedated. A tiny piece of mucous lining tissue can be sampled using the endoscope, so the physician can also test the tissue near the ulcer for the presence of bacteria.

**Common Causes:** In 75% to 95% of all ulcers, an infection with *H. pylori* is the cause. It is a common GI infection that is likely transmitted by fecal contamination (e.g., poor sanitation), close oral contact such as kissing, or through contaminated food or water. The presence of *H. pylori* is confirmed by one or more tests, including the tissue biopsy from an endoscopy. Less invasive tests to detect *H. pylori* include a blood test, a breath test, and a stool test.

In 10% to 15% of ulcers, the use of NSAIDs is the cause. Many of these drugs are available without a prescription and are used in high doses for extended periods of time by people suffering from chronic inflammation that causes pain, such as arthritis. NSAIDs stop the body from producing a substance that protects the stomach lining from acid, and the result is that the acid is able to eat through the lining and produce an ulcer.

**Treatment:** Treatment for peptic ulcers depends on the cause. If the ulcer is a result of an infection with *H. pylori*, a combination of antibiotics is used along with an acid blocker (e.g., cimetidine, ranitidine, famotidine, nizatidine), a proton pump inhibitor (e.g., omeprazole, esomeprazole, lansoprazole, pantoprazole, rabeprazole), and a lining-protective medication such as bismuth subsalicylate, sucralfate, or misoprostol. Using several types of medications to kill the bacteria while protecting the ulcer from further acid damage helps to speed healing. These medicines are usually used for two weeks, although some patients may require longer treatment. If the ulcer is the result of chronic NSAID use and there is no *H. pylori* present, the NSAID is discontinued and a regimen of acid-blocking agents along with a lining-protective medication is usually prescribed.