Advanced pathophysiology

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**Gastritis**

Soreness of the protective coating of the stomach resulted in gastritis. It may happen for a short duration and prolonged disorder, depending on the severity of the inflammation. Acute gastritis includes unexpected, acute inflammation (Baker & Blakely, 2017). Chronic gastritis implicates continuing and prolonged inflammation as a result of non-treatment.

**Diagnosis and Treatment**

A physical exam is performed to check for the signs and indications such as abdominal pain, nausea, fever, or black or glittery black feces. Blood test diagnosis is performed using a blood count test, liver functions test, H pylori test, and kidney function test. Urinalysis is also performed to check for the urine detailed examination. Endoscopy is performed to view stomach lining using an endoscope (de Bortoli et al., 2013). Occasionally biopsy is suggested to check for gastritis and other gastrointestinal tract disorders. Treatment methodologies lie on the cause of gastritis. Depending upon the severity of the disease, different treatment prescriptions are utilized, such as antacids, proton pump inhibitors, acid-reducing medicines, and probiotics are used. Proton pump inhibitors are the drugs that block the cells which produce stomach acid. It includes omeprazole and esomeprazole drugs (de Bortoli et al., 2013). However, prolonged use can cause dementia and other nutrient deficit disorders. Medications used for acid reduction are usually recommended for minor cases of gastritis because these drugs can aid in pain reduction as well as restores stomach lining (Baker & Blakely, 2017). These drugs are ranitidine and famotidine. Antacids are the drugs that help in relieving pain as it neutralizes the acid. The use of probiotics is essentially important as it helps in restoring and reproducing healthy and digestive flora.

**Epidemiology**

The prevalence of gastritis and gastrointestinal tract related disorders in the United States is around more than 40%. In this number prevalence of Helicobacter pylori is the highest. Prevalence among 100,000 population is approximately 30,000 in children in South America. Whereas it is 43000 in Central America. In the adult, it is even higher that is 82,000 in South and 65,000 in Central America (Baker & Blakely, 2017). The prevalence of gastric disorders is higher in developed countries. All age groups may develop this condition, but the prevalence increases with the age of the individuals. It is more often observed in Native Americans (54%).

**Clinical Presentation**

Patients with a positive medical history of heartburn, acidity, and gastritis often develop this condition with time. Clinical signs and symptoms comprise of throwing out, abdominal burning, pain, indigestion, and incomplete digestion, nausea, and vomiting. The primary cause of the disorder is gram-negative bacteria that is Helicobacter pylori (de Bortoli et al., 2013). Symptoms of clinically diagnosed patients with gastritis involve upper abdominal area ache, bloating, and feeling full. In chronic cases of gastritis, patients subsequently have vomiting with blood or dark-colored fluid.

**Pathophysiology**

Numerous researches specify a noteworthy grade of overlay among irritable bowel syndrome (IBS) and gastroesophageal reflux disease (GERD). Similarly, together with functional heartburn and IBS have been seen in some patients (Dunlap & Patterson, 2019).

**Acute gastritis**

Due to the impairment and inflammation of the stomach lining, erosive gastritis evolves. Use of painkiller usually block the production of cyclooxygenase-1; this is a vital enzyme that works in the biosynthesis of the stomach wall (de Bortoli et al., 2013). It leads to the development of ulcers in the stomach lining. Painkillers, NSAIDs, and aspirin damage and decline the levels of prostaglandin. Prolonged use of these drugs causes permanent damage that leads to the constant declining in the stomach lining (Baker & Blakely, 2017). The use of alcohol also corrodes the inner stomach lining.

**Chronic gastritis**

Prolonged use of drugs that damage the inner stomach wall, immune system dysfunction, and certain disorders become the cause of chronic gastritis. Disorders such as HIV/AIDS, connective tissue disorders, and liver damage can lead to gastritis. The immune system works in the production of antibodies, and it maintains homeostasis. However, due to some disorders or surgery, antibodies produced by the immune system could not recognize the stomach cells as body cells and attack them (de Bortoli et al., 2013). As a result, the stomach wall, intestine wall injuries ended up in gastritis. Age is an important factor in the development of chronic gastritis.

**Metaplasia**

It is a result of consistent damage to the mucosal replacement mechanism of the stomach coating. This outcome as a result of constant damage to gastric glands. The stomach wall has a mechanism in which it progressively replaces damaged cells with a new active protective sheet of cells. The underlying causes of the mucosal glands impairment are unknown; however, it is a chronic inflammation of the mucous cells.

**Changes**

Gastroesophageal reflux illness arises when gastric acid recurrently streams back into the esophagus. This backwash exasperates the lining of the esophagus. This effect aggravated with increasing age (Buttaro, 2019). The continuous flow of gastric acids results in complications that may include mucosal damage. Patients suffering from gastritis often develop other gastrointestinal tracts related disorders such as gastroesophageal reflux disorder and peptic ulcer disease. The constant flow of gastric acid in the lining results in hoarseness of the throat. It may outcome in laryngitis and chronic dry coughing. Bad breath and sometimes difficulty breathing. The damage that outcome because of the immune system dysfunction, can aggravate the condition (de Bortoli et al., 2013). Peptic ulcer disorder and gastritis, if left untreated or due to constant gastric acid flow, can result in stomach bleeding, permanent loss to esophageal lining, and stomach cancers.

**Mind Map**

Foreign protein (pathogen)

Antibiotics

Antacid

Proton pump blockers

Bile, liver and kidney failure

Endoscopy

Gastritis

Connective tissue disorders

Abdominal bloating

40% population observed with H-pyloric in the US

Nausea

Vomiting

Blood test

Loss of appetite

54% in Native Americans

Stool test

Severe Abdominal pain

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