Conditions and Mechanisms of Digestive Tract and the Disorders

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**Q1 response**: The main function of the stomach glands is to secrete digestive fluids that will aid in the digestion of food which will be further absorbed by the intestine. Gastric acid is produced by the cell located on the stomach’s wall, known as a gastric parietal cell. These acid secretions into lumen occur in response to the messages from paracrine, hormonal, and neurocrine inputs. The G cells located in pyloric mucosa of the stomach are the causes of producing hormonal stimulation for gastric acid production. However, the Histamine 2 receptors are considered as the primary stimulus for the gastric acid secretion.

The stimulation and production of gastric acid indicate the balance of chemo transmitters. These transmitters are delivered to the gastric mucosa through different paths what links both stimulatory and inhibitory mechanism. While, the production and defense mechanism against any injury caused by the acid is regulated through overlapping neural, paracrine and endocrine pathways (Bandyopadhyay et.al, 2019).

The preservation of gastric acid production is an essential evolutionary advantage for the vertebrate population. These benefits include protein digestion and iron absorption. Gastric acid also suppresses the overgrowth of bacteria in the small intestine that will help in the reduction of infections caused by them.

**Q2 response**: Gastroesophageal reflux disease (GERD), also referred to as heartburn, is a digestive disorder caused by acid reflux in the stomach. The main function of the human stomach is to produce hydrochloric acid. In addition, it signals the gastric gland to secrete gastric acid which consists of digestive enzymes that help in breaking of protein molecules to aid in essay digestion. The human body sometimes produces too much and too little acid but when it produces too much acid it causes acid reflux to the esophagus resulting in severe heartburn and irritation. It is, therefore, important to provide guidance about dietary intolerance and maintaining a healthy lifestyle to avoid acid reflux.

Peptic ulcer disease (PUD) is a disease that causes sore in the duodenum and in the lining of the stomach. It can either be acute or if not treated, can be chronic. This is caused by the inflammation leading to a mucosal defect. Too much acid secretion is a major factor that causes PUD. Also, some anti-inflammatory drugs cause severe ulcers in the stomach (Lanas & Chan 2017).

Gastritis is generally a term that is caused due to inflammation in the stomach lining. It can also either be acute or chronic. If not treated it can cause severe ulcers and may even cause stomach cancer. This is caused by the factors that slow down the mucosal defense such as excessive secretion of gastric acid, excessive insulin production, and etc.

Q3 response: (The factor that I have selected is gender). Although there is extensive research in the field of GERD yet there is very limited detail on how GERD impact gender. According to the latest research, females are more prone to GERD as they are more likely to feel heartburn and chest pain. Most of the symptoms of PUD are similar to GERD. PUD is very common in females when they are expecting, due to the fact that they secrete less hormonal gastric acid. They have less immunity (Casimir et.al, 2018). While talking about gastritis, it is more common in men as they usually consume more alcohol that causes intense stomach pain. On the other hand, women use anti-inflammatory drugs more than men which makes them prone to gastritis.

Q4 response: It is important for both men and women to visit their local health care facility every month in order to get examined for this health condition. This will help them to identify the symptoms of the disease that occur and they can treat it in time. There are different acid-blocking medicines available that help in the diagnosis for PUD. It is recommended to both genders to take these medications to check for the PUD symptoms. If the results are positive it is important to change the lifestyle while taking the medicines regularly to prevent further complications.

In order to diagnose gastritis doctors often recommend taking a blood test or stool test if a person has a family ground of having this disease. Gastritis can be cured by taking antacids and by taking antibiotics if there is a pyloric infection. It is recommended to also avoid foods with spices or any other food that cause irritation (Jensen et.al, 2019).

**Q5 Response:** **Mind Maps**

Foreign protein (pathogen)

Antibiotics

Antacid

Bile, liver and kidney failure

Histamine H2 blockers

Under endoscopy

Chronic Gastritis

 Tissue disorders

Abdominal bloating

50% suffers from H-pyloric population worldwide

Nausea

Vomiting

Blood test

Loss of appetite

20% young people (below 40) and 50% older people (above 60) suffers from H pyloric

Stool test

Severe Abdominal pain

Upper digestive system X-Ray

system

NSAIDs

Antacids

Reduce alcohol consumption

Maintaining healthy lifestyle

COX-1

Acute gastritis

Alcohol consumption

Nausea

Abdominal pain

54% African American suffers from gastritis

Vomiting

Physical examination

Blood or stool test

52% Hispanics suffers from gastritis

**References**

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