

A Detailed Analysis On Acidity And Ulcers In Esophagus, Gastric And Duodenal Ulcers And Management

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Abstract: Gastric ulcers are erupted when there is an disproportion between the digestive juices generated by the stomach and the diverse factors that defend the mucosal lining of the stomach. Acute gastric problem reduces quickly but Chronic gastric problems lead to ulcers. Nine out of ten Peptic ulcer disease (PUD) or peptic ulcer or stomach ulcer (Gastric and duodenal ulcers) are sore on the inner lining of stomach or duodenum and caused by an infection from the bacterium *H. pylori* and they are liable to reappear if left untreated. An ulcer in the stomach is called as a gastric ulcer, an ulcer in the duodenum is known as a duodenal ulcer, and a peptic ulcer of the esophagus is an esophageal ulcer. Peptic ulcer disease is suspect in patients with epigastric distress and pain. Peptic ulcers are usually caused by either *Helicobacter pylori* (*H. pylori*) bacteria or non-steroidal anti-inflammatory drugs such as Aspirin, Ibuprofen or other NSAIDs. Worldwide mostly 85 % of gastric ulcers and 95 % of duodenal ulcers build up as a result of infection due to bacterium known as *H. pylori* which colonizes the gastric mucosa, inflammation generally results and owing to improvement of latest diagnosis and treatment techniques, the occurrence of *H. pylori* and the ulcers caused by the bacterium has declined. Acid reflux is extremely common and in infants and children, due to an immature digestive tract. Esophagitis is inflammation of the esophagus which may be acute or chronic. Consumption of alcohol, highly spicy food stuffs, non-vegetarian diets, and Non Steroidal Anti-Inflammatory Drugs (NSAID's) also influence to gastric acidity. Acidity and gastric ulcers are more common in the developed and industrialised nations, and it has been prevailed and fast increasing in the developing countries also.

Key words: Deodenal ulcer, Gastric ulcer, Gastroesophageal Reflux Disease, *Helicobacter pylori*, Peptic ulcer, Acid reflux.

I. Introduction

An acid (Latin acidus meaning sour) is a chemical substance whose aqueous solutions are distinguished by an unlikeable taste, the ability to turn blue litmus red, and the skill to react with bases and certain metals (like calcium) to develop salts. Acidity implies a medical condition in which the liquid in the stomach changes into too much acid. The English word "ulcer" come from the Latin word *ulcus* (genitive: *ulceris*), which stand for "sore, wound, or an ulcer" and thus peptic ulcer literally means tissue corrosion in the digestive system. Gastroesophageal Reflux Disease (GERD) is a situation in which the liquid contents in the form of acidic digestive juices in the stomach drive back into the esophagus. A peptic ulcer is "an ulcer of the alimentary mucosa, located in the stomach the initial part of the small intestine is termed the duodenum." The English word "peptic" emerges from the Latin word *pepticus* stand for "to digest" or promoting digestion. An ulcer is a sore or erosion that constitute when the lining of the digestive system stained by acidic digestive juices which are secreted by the stomach cells where as a peptic ulcer is a wound or hole on the lining of the stomach or duodenum or esophagus. A peptic ulcer is a hole in the lining of the stomach, duodenum, or esophagus whereas an ulcer is a sore or erosion that forms when the lining of the digestive system is corroded by acidic digestive juices. Peptic ulcers that form in the stomach are called gastric ulcers and exist in the in the duodenum are called duodenal ulcers and ulcer of the esophagus is known an esophageal ulcer. Reflux esophagitis is occurred owing to reflux of stomach acid into the esophagus.

1.1 Brief Statistical Data:

Approximately seven million people in the United States have certain symptoms of GERD in 2004. Primary or secondary GERD diagnosis increased from a totality of 995,402 individuals diagnosed in 1998 to 3,141,965 by 2005 which comes to 216 %. Children with GERD symptoms who were hospitalized with a primary GERD diagnosis enhanced by 42 % in infants and 84 % in children between the ages of 2 and 17. From 1998 to 2005, other esophageal ailments also had a high rate of diagnosis of GERD with dysphagia boosted to

(264 %), esophageal adenocarcinoma (195 %) and esophagitis (94 %). Women are more prone to be hospitalized for GERD symptoms than men with 62 % hospitalizations 2005 over the age of 40 to 65 on the whole. As per the International Foundation for Functional Gastrointestinal Disorders (IFFGD) reports that American Gastroenterological Association estimated that 33 % of people in the U.S have acid reflux disease. It is estimated that worldwide, approximately 5 to 7 % of the total population has symptoms of GERD. About 10 % to 15 % of patients with GERD go on to develop Barrett's esophagus and out of them 0.5 % of patients acquire cancer. In the past, H. pylori were detected in more than 80 % of patients with gastric and duodenal ulcers. About 25 million Americans develop at least one ulcer during their life span. It is estimated that half of the United States older population over 60 age has been infected with H. pylori. Today, research shows that most ulcers (85 % of gastric ulcers and 95 % of duodenal ulcers) develop as a result of infection with a bacterium called H. pylori. Infection which is general, affecting more than a billion people worldwide. 20 % of adults experience heartburn every week. Peptic ulcers are by and large caused by either H. pylori bacteria or NSAIDs[1-5] H. Pylori bacteria are responsible for about four-fifths of all gastric ulcers and 95 % of duodenal ulcers, while NSAIDs are responsible for about 20 % of gastric ulcers and 5 % of duodenal ulcers. H. pylori are spiral-shaped bacteria that can form peptic ulcer disease by damaging the mucous coating that protects the lining of the stomach and duodenum.[6-25] Once H. pylori have damaged the mucous coating, powerful stomach acid can go through to the sensitive lining. The stomach acid and H. pylori irritate the lining of the stomach or duodenum and forms a peptic ulcer. Peptic ulcers are generally present in around 4 percent of the population and also about 10 percent of people develop a peptic ulcer at some point in their life. Fig 1 shows the structure of digestive system of human body which covers total abdomen consists of the small intestine and large intestine, stomach, liver, gallbladder, spleen, pancreas and colon.

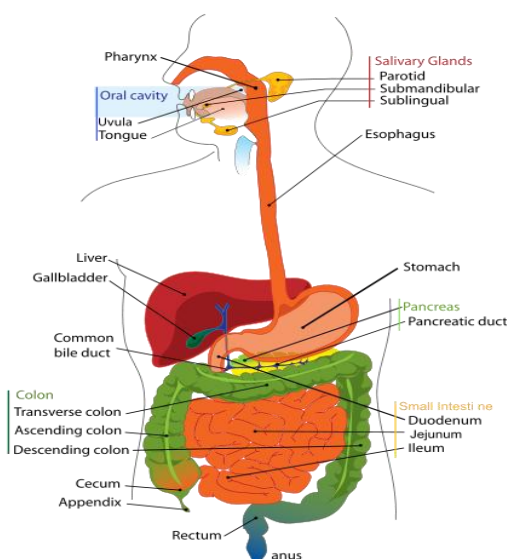


Figure 1. Anatomy of the digestive system.

The term abdominal ache is generally used to explain the pain originating from the organs within the abdominal cavity. The abdomen is an anatomical area that is situated and encircled by the lower margin of the ribs and diaphragm above, the pelvic bone (pubic ramus) below, and the flanks on each side. Although abdominal pain can arise from the tissues of the abdominal wall that surround the abdominal cavity (such as the skin and abdominal wall muscles). Organs of the abdomen include the stomach, small intestine, liver, gallbladder, spleen, pancreas and colon. Abdominal pain can occur from a mild stomach ache to severe acute pain. The pain is found often unclear and can be caused by a variety of conditions.

Generally common people make use of the therapeutic terms the abdomen and stomach are one and the same, but technically there exists a difference between the two. Abdomen is a major part of the body which is comprised with all the parts between the chest and the pelvic region. But stomach is a part of abdomen and aids in digestion. Abdominal pain can be due to several reasons like pulled muscle, indigestion, constipation, pains due to gas, stomach cramps with bloating or diarrhoea, but if the pain turns into severe and unbearable, it necessitates medical consideration. One of the most important sign to the abdominal pain is its location. Sometimes, the pain can be in diverse locations and become difficult to diagnose. Some of the signs of a common abdominal pain which aren't focused in one area are irritable bowel syndrome, appendicitis, diabetic ketoacidosis, injury, crohn's disease, pancreatitis, sickle cell anemia, urinary tract infection, viral gastroenteritis and lead poisoning.

1.2 Causes Of Gastric Mucosa Inflammation:

Acidic food, alcohol, smoking, stress, drugs, less water intake, lack of fiber in the diet, irregular diet routine, lack of physical activity, stress, artificial additives in food, consuming spicy food and side effects of medicine and physical and mental stress can also lead to form ulceration.

1.3 Grounds Leading To Abdominal Pains:

Get relief by taking antacids or milk, may occur 2 to 3 hours after meal, it may become worse if not eat, make the patient to wake up at night, nausea, vomiting, abdominal indigestion, vomiting blood, blood in stools, black tarry stools, weight loss without cause, fatigue, constant pain, loss of appetite, and diarrhoea.

1.4 Symptoms Of Constipation:

Inadequate weight, gas and acidity, complicated bowel movements, swelling and pain in abdomen, hard or small stools, feeling of incomplete excretion, and gas formation in stomach, heartburn and stomach pain. Abdominal pain is caused by inflammation (for instance, appendicitis, diverticulitis, colitis), by stretching or distention of an organ (for example blockage of a bile duct because of gallstones, obstruction of the intestine and enlargement of the liver due to hepatitis), or by loss of supply of blood to the organs, however, abdominal pain also can occur for indecisive reasons devoid of inflammation, distention, or lack of blood supply. These latter types of pain such as IBS are often referred to as functional pains since no identifiable reasons for the pain have not been forthcoming. Depending on the causes like characteristics of the pain, and based on the physical examinations, lab tests, endoscopy and surgery, the abdominal pain can be identified.

1.5 Gastric Problems:

Gastric problems are common problems experienced by everyone at some time or the other that some may be a minor character while others may involve a severe pain which require treatment. The term gastric pain is usually used to describe any kind of discomfort in the stomach or other organs in the upper abdomen which starts below the rib cage and extends up to the navel. The organs situated in the upper abdomen include the esophagus, stomach, liver, pancreas and gall bladder and any discomfort associated with any of these organs can create gastric pain. In both adults and children, gastric pain may be accompanied by stomach bloating, heartburn and at times headaches and commonly occurred at some stage in pregnancy due to the pressure applied by the growing uterus and against the digestive organs. It causes the stomach and other organs to be pushed up against the diaphragm resulting in gastric reflux and ache.

At times, gastric pain may also be caused by conditions elsewhere in the body such as the lungs or the ovaries and due to pancreatitis. To know well about gastric pain one needs to examine the different causes of gastric pain. The stomach of a person produces approximately 2 liters of acid everyday which destroys bacteria in the consumed food, enhance absorption of dietary calcium and iron, and activate pepsinogen enzyme which is responsible to break proteins. Acid production is stimulated due to secretion of hormone called gastrin in the stomach in response to vagus nerve excitation, stomach swelling, partially digested proteins, amino acids in the stomach, and hypercalcemia.

Soon after swallowing, the food passes from the throat to the stomach through the esophagus and a ring of muscle fibers called the lower esophageal sphincter (LES) stops food to travel to leak backup again through the valve into the esophagus. Sometimes, however, the acidic contents of the stomach are repeated to leak backup through the valve into the esophagus which situation is known as acid reflux. Generally, the stomach functions to absorb food, and allows to travel food downward but reflux is a sign that the stomach is incapable to carry out these functions. The chemistry of the body develop into acidosis is an imbalanced condition due to production of too much acid. Symptoms connected with acidosis involve repeated sighing, retention of water, insomnia, recessed eyes, arthritis, migraine headaches, remarkable low blood pressure, acid or strong perspiration, constipation and diarrhoea, difficulty swallowing, halitosis, dry hardness with foul-smelling of stools and burning feeling in the mouth or under the tongue or both and anus, sensitivity of the teeth to vinegar and acidic fruits, bumps on the tongue or in the mouth.

1.6 Respiratory Acidosis And Metabolic Acidosis

Respiratory acidosis can occur owing to asthma, bronchitis, or any sort of obstruction of the airway. It is either mild or severe caused by disruption of the acid control of the acid-base balance in the body, resulting in surplus flow of acidic fluids or the reduction of alkali (base) if the lungs are incapable to remove carbon dioxide. When chemical changes in the body disturb the body's acid-base balance which generate an excessive amount of acid in the body fluids is known as metabolic acidosis. Various aiding factors to develop acidosis can include liver and adrenal disorders, stomach ulcers, improper diet, malnutrition, obesity, ketosis, anger, stress, fear, anorexia, toxemia, fever, and the consumption of excessive amounts of niacin and vitamin C and diminishing

of Alkaline base owing to kidney failure, diabetes mellitus, consumption of huge quantity of aspirin, and certain metabolic diseases.

II. Ulcer

It is a hole or sore in the inner lining of the stomach, duodenum (upper small intestine), or esophagus (tube that transmit food from the throat to the stomach). A peptic ulcer of the stomach is called a gastric ulcer, an ulcer of the duodenum duodenal (say "doo-uh-DEE-nul" or "doo-AW-duh-nul") ulcers.[26-33] A peptic ulcer crops up when the lining of these organs are decomposed the intestine or stomach's protective layer by the acidic digestive juices consists of hydrochloric acid and pepsin(enzyme) generated by the stomach cells which can injure the esophagus leads to ulcer formation. Peptic ulcer formation pertains to H. pylori bacteria exist in the stomach and NSAIDs (non-steroidal anti-inflammatory medications) in 50 % of patients[34-35]. For the rest of 50 % there lies unidentified causes. Treatment cures most of the ulcers, ultimately symptoms go away swiftly. A peptic ulcer differs from erosion because it expands deep into the lining of the esophagus, stomach, or duodenum and increases additional inflammatory reaction from the tissues that are deteriorated. Peptic ulcers may create recurrent problem and reappear unless due treatment is executed to avert their return. For years together it is considered excess gas than essential is the prime cause of ulcer ailment, thus treatment is necessary to neutralize and control the secretion of excess stomach.

2.1 Formation Of Ulcers

The stomach, intestines, as well as digestive glands ooze hydrochloric acid and a variety of enzymes, including pepsin that break down and digest food. The stomach must also be guarded from the said acid and enzymes, or else it can also be assaulted by the gastric juices. The acid may enter the lower part of the Oesophagus (Gastro-Oesophageal Reflux), due to some fault in the normal sphincter mechanism which stops such reflux that causes heartburn mostly after meals. It commonly occurs after meals and excess intra-abdominal pressure like lifting weights or straining. Ulcers also come about as a result of excess secretion of acid than required and this may take place when due to inequality among the digestive juices utilised by the stomach to break down food and the various factors that protect the lining of the stomach and duodenum. A peptic ulcer in the lining of the upper part of the small intestine known as duodenal ulcer and the stomach ulcers called as gastric ulcers, whose protective mucosal lining has been wearied away by the gastric juices. Duodenal ulcers are thrice more than gastric ulcers. Hydrochloric acid, secreted in the stomach, is one of the prime factors in the growth of ulcers, but is not entirely responsible. Excessively large amounts of acid secretion occur in Zollinger-Ellison Syndrome, in which large amounts of secretion are stimulated by tumours located in the pancreas or duodenum. Pepsin breaks down proteins and hydrochloric acid cause damage to the stomach or duodenum if the stomach's protective system is altered or damaged. The mucous layer, which coats the stomach and duodenum, act as defence against acid and pepsin. The body also secretes bicarbonate into the mucous layer, which neutralises the acid. The defence system also consists of substances known as prostaglandins, which help to keep the blood vessels in the stomach dilated, ensuring adequate blood flow thus help protect the stomach. Lack of adequate blood flow to the stomach contributes to form ulcers. If any of these defence mechanisms are incomplete, acid and pepsin can attack the stomach lining causing an ulcer. Below fig 2 shows the ulcers effected to different sites in the digestive system.



1. Esophageal ulcer

2. Gastric ulcer

3. Duodenal ulcer

Figure 2. shows the ulcer effected to different sites in the digestive system.

2.2 The Specimens And Symptoms Of Pain

Contraction like pain that occurs in waves may be indicative of an intestinal problem such as a blockage of the intestine. A steady pain that typically lasts for up to several hours at a time may be due to the presence of gallstones. Severe pain that does not let up and radiates from the upper abdomen to the upper back may be due to pancreatitis. Pain from irritable bowel syndrome may last for years and appears periodically

while biliary colic will last for a few hours only. Gastric pain can be minimized by eating easily digestible foods and drinking lots of fluids. In order to avoid symptoms such as vomiting and diarrhoea one should consume only those foods that are comfortable with them but small amounts. Dyspepsia and heartburn are often the foremost symptoms of acidity. Heartburn is characterised by a severe burning pain in the chest behind the sternum (breast-bone). It happens after meals due to excess intra-abdominal pressure like lifting weights or straining. It can also crop up at night on lying position and is alleviated when the individual sits up. The symptoms of ulcers are mainly pain that can be either restricted or dispersed. Sometimes it may spread out to the back or to the chest. The most common symptom of dyspepsia is severe and aching pain in the upper abdomen now and then described as a "stabbing feeling penetrating across of the gut" and now and then, no pain is seen at all, except a feeling of indigestion or nausea. Consuming a small quantity of meal routinely relieves the pain in duodenal ulcer, but there may be no change in a gastric ulcer, rather the pain may become worse. Without symptoms peptic ulcer disease may occur for a short time. Symptoms may also be seen when there is no existence of ulcer which is known as non-ulcer dyspepsia.

2.2.1 Portrait Of Esophagus Connecting Its Lower End To The Top Of The Stomach

The esophagus is the tube a connection to the stomach that conveys food from the throat to the stomach. It is a muscular tube suitably connecting the throat (pharynx) with the stomach which measures nearly 8 inches long, built by humid pink tissue called mucosa. The esophagus runs behind the windpipe (trachea) and heart, and in front of the spine passes through the diaphragm at which lies the entrance of stomach. The upper esophageal sphincter (UES) is build-up with cluster of muscles at the high point of the esophagus and supportive when breathing, eating, belching and vomiting duly keeping food and secretions going downwards properly through the windpipe and stops acid and substances in the stomach from moving backwards from the stomach.

2.2.2 Esophagitis (Reflux Disease, Gastroesophageal Reflux Disease, Or GERD):

The contents of the stomach again go back (reflux) into the esophagus is called GERD. The food in the stomach is partially digested by the stomach acid and enzymes and partly digested acid content in the stomach is sent by the muscles of the stomach downwards into the small intestine for additional digestion. But due to GERD stomach acid content flow backward into the esophagus, irregularly reach the breathing passages, which generate inflammation and irritation and harm to the tissues of esophagus and its lining, lungs and the voice box called as larynx. Esophagitis generate, infection, chest pain, allergies and difficult in swallowing. Treatments for esophagitis depend on the severity of tissue damage and it should be treated properly and timely. Fig 3 shows the esophageal sphincter allowing reflux.

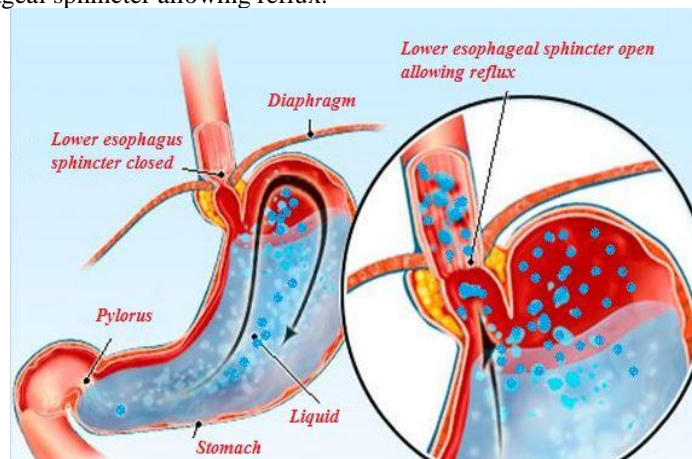


Figure 3. Refluxes regards to lower esophageal sphincter.

2.2.3 GERD (Gastroesophageal Reflux Disease):

Weak point or malfunctioning of the muscle that makes the stomach closed (sphincter) and in turn allow stomach acid again leak back into the esophagus (acid reflux) resulting irritation of the inner lining which is also known as GERD esophagitis, if it is severe it is called erosive esophagitis. According to the Los Angeles classification based on the severity of esophagitis depending on the mucosal breaks and esophageal circumference it is separated into 4 grades namely A, B, C and D.

2.2.4 Common Symptoms Of Esophagitis:

Heartburn, pain or trouble while swallowing, food or liquids, chest pain just akin to the pain of a heart attack and causing cough, nausea, vomiting, fever, abdominal ache, indigestion, difficult or painful swallowing, immovability of food on the way down, heartburn, acid reflux, mouth sores, sore throat, unpleasant taste in the mouth, hoarseness, cough and pain in the middle portion of the chest. Cancer esophagitis is a symptom of cancer of the esophagus,

2.2.5 Causes Of Esophagitis (Gastroesophageal Reflux Disease):

Esophagitis occur on account of viral infection or irritation of the esophagus, bacteria, viruses, or fungi, including Candida a kind of yeast infection. This disease is more common and build-up in patients with feeble immune systems, diabetic, HIV, aids patients treating with chemotherapy and people who are taking antibiotics or steroids.

Weakness or dysfunction of the muscle that keeps the stomach closed (sphincter) can allow stomach acid to leak into the esophagus (acid reflux), causing irritation of its inner lining which is also called GERD esophagitis. In severe cases it can become erosive esophagitis. When vomiting is frequent, chronic, excessive or vigorous vomiting may cause small tears of the inner lining of the esophagus, can pave way to damage the esophagus. Hiatus hernia abnormality occurs when a part of the stomach moves above the diaphragm producing a small abnormal pouch, or hiatal hernia, which can lead to excess acid refluxing into the esophagus. People with achalasia have a higher than normal risk of esophageal cancer. Certain surgeries, including bariatric surgery meant for weight loss, can direct to increased risk of esophagitis. Radiation to the chest for cancer treatment may cause scars and inflammation of the esophagus. Medicines that irritate the esophagus, including, Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), such as Aspirin, Ibuprofen, or Naproxen, medicines for osteoporosis, Antibiotics, like Tetracycline or Clindamycin, other medicines namely Mycophenolate or Quinidine, vitamin and mineral supplements, such as vitamin C, iron, and potassium medications and food allergies, toxic substances, high acidic foods and excessive caffeinated drinks or such beverages. People who have a weak immune system and also suffering from HIV, diabetes, or kidney problems and older adults and people who take steroid medicines are more likely prone to esophagitis.

2.3 Esophagitis Diagnosis:

In the endoscopy test, a thin, flexible tube is inserted down to the throat of the patient to perceive and examine the esophagus duly obtaining a sample of the cells for examination of infection and a piece of tissue is cut and take out for biopsy to identify existence of inflammation or cancer cells. In the barium X-ray of the throat and esophagus the patient has to drink barium liquid which forms a clear coating inner side of the esophagus which shows clear indications of the location and amount of damage to the esophagus.

Fungal or viral mainly causes infectious esophagitis. Esophageal manometry test is meant to measure the pressure inside the lower part of the esophageagus where in a thin, pressure-sensitive tube is passed through the mouth or nose and into the stomach, which is then pulled slowly back into the esophagus. Herpes simplex called as herpes esophagitis and cytomegalovirus can be identified by gastroenterologist with specialized tests to decide the proper cause and the size of the esophagitis which include esophagogastroduodenoscopy (EGD) where in an endoscope is used to directly examine the esophagus, stomach and first part of the intestines.

2.4 Treatment Of Esophagitis:

Reflux esophagitis is occurred owing to reflux of stomach acid into the esophagus. Infectious esophagitis affected by bacteria, viruses, or fungus. If esophagitis is identified early suitable medications and diet and lifestyle changes are adequate to cure this disease. If the damage to esophagus is harsh or directs to scar tissue followed by swallowing necessarily more difficult treatment is direly needed. If esophagitis due to an infection, it is treated with proper medications to eradicate the infections If it is due to acid reflux it is treated with medications to reduce or block acid production with heartburn drugs. If the cause of esophagitis is due to taking medications, the patient may need to alter those medications. In the case of Barrett's esophagus (untreated inflammation in the esophagus resulting a change in the type of cells that make up the inner lining called mucosa of the esophagus which enhances the risk for esophageal cancer), where the risk of cancer is increased, surgery might be the treatment of choice to remove any damaged portions of the esophagus. Eosinophilic esophagitis (inflammation of the esophagus due to raise in the white blood cells known as eosinophils in the lining of the esophageal) is treated with gentle stretching of the esophagus (dilatation) and medications to decrease excess white blood cells (eosinophils) exist in the lining of the esophagus. Achalasia (disorder where the lower end of the esophagus does not open usually) may be treated with stretching of the esophagus (dilatation) when oral medications are not effective to cure it.

2.5 Lifestyle Changes:

Smoking, remain upright while eating and for a time (about 2-3 hours) afterwards, take small and slow bites and chew food unhurriedly, avoid eating within 3 hours of bedtime or lying down. If GERD symptoms appear at night, raise the head side of the bed 6 inches height by keeping certain frame or blocks beneath the legs of the head side cot to keep slant towards legs. Pillows should not be used to avoid pressure on the abdomen, lose of weight, wearing loose clothing and avoiding of aspirin or ibuprofen is compulsory.

2.6 Esophagitis Diet:

Diet is often a key factor to reduce the symptoms of esophagitis. If the esophagitis is due to acid reflux or GERD, complete change of diet is to be adopted to curtail over weight. It is always better to eat four small meals instead of two large meals. The GERD diet is aimed at reducing acid reflux which is the foremost cause of esophagitis. Eat soft foods which are easily digested in smaller quantities at more times, and avoid permanently coffee, tea, alcohol, and soda. Eat low fat, high protein meals and at the same time keep away from fatty spicy foods, acidic foods, foodstuffs that may trigger or worsen heartburn including chocolate, mint, onions or garlic.

2.7 Pain Relief For Esophagitis:

Many over-the-counter medications will aid to neutralize acid in the stomach and provide temporary relief from the pain occurred due to esophagitis but such drugs should not be taken for lengthy period and if there is no gradual decrease of disease even after 15 days at the latest one month corticosteroids may be employed as additions to alleviate inflammation take place owing to esophagitis.

2.8 Complications Of Esophagitis:

If untreated, esophagitis caused by GERD can lead to bleeding, ulcers, and chronic scarring which contracted the esophagus, finally interfere adversely with the swallowing capacity and may lead to hard or painful swallowing apart from malnutrition. A major complication, which occurs in about 10 % to 15 % of people with chronic or longstanding GERD, turns to Barrett's esophagus, which augments the risk of esophageal cancer.

2.9 Image And Parts Of The Stomach:

2.9.1 Cardia:

The first portion (closest to the esophagus). Fundus: The upper part of the stomach next to the Cardia. Body (corpus): The main part of the stomach, between the upper and lower parts. Antrum: The lower portion (near the intestine), where the food is blended with gastric juice. Pylorus: The last part of the stomach, which performs as a valve to control emptying of the stomach substances into the small intestine. The first 3 divisions of the stomach (cardia, fundus, and body) are called the proximal stomach and the lower 2 parts (antrum and pylorus) are named the distal stomach.

The stomach is a muscular sack (bag) shaped organ located on the left side of the upper abdomen which is a digestive system organ in which food travels from the esophagus and is further broken into pieces before its nutrients are suck up in the small intestine. The stomach has 2 curves, which form its inner and outer borders. They are called the lesser curvature and greater curvature, respectively. The inside wall of the stomach is defended from the acid. It collects food from the esophagus and come into the stomach through a muscular valve called the lower esophageal sphincter. It also generates acid apart from various enzymes that break down food into simple substances and enzymes by a mucous lining. The stomach muscles (rugae line) contract regularly, stirs up food to enhance digestion. The pyloric sphincter is a muscular valve located at the end of stomach opens to allow food to pass from the stomach end part into the small intestine. Ulcers begin to erupt when there is unevenness between the digestive juices produced by the stomach and the lining of the stomach causes bleeding. At times, an ulcer may completely wear away the stomach wall. A major cause of stomach ulcers is the bacteria called *Helicobacter pylori* (*H. pylori*) and the treatment include medications to suppress the stomach acid and antibiotics to exterminate the infection.

Gastric ulcers are normally classified as stated by the Johnson classification, which divides the ulcers as type I to type IV.

Type I

Type I gastric ulcers are typically present near the angular is incisura on the lesser curvature, close to the border between the antrum and the body of the stomach. Patients with type I gastric ulcers generally have normal or decreased gastric acid secretion.

Type II

Type II gastric ulcers are a combination of stomach and duodenal ulcers and are normally associated with normal or increased gastric acid secretion.

Type III

Type III gastric ulcers are prepyloric and are generally associated with normal or increased gastric acid secretion.

Type IV

Type IV gastric ulcers happen near the gastroesophageal junction, and gastric acid secretion is normal or below normal.

2.9.2 Stomach Problems

Some of these problems may be isolated with the stomach or surrounding parts of the gut, like the end of esophagus before the stomach and small intestine far-away after the stomach. Sometimes, the whole gastrointestinal tract may be affected thereby produce different signs and symptoms which may often misunderstood a problem only within the stomach.

The most common stomach problems are inflammation of the stomach called as gastritis and ulcers known as gastric ulcer. Other common conditions like gastroesophageal reflux disease affects the esophagus due to a weak lower esophageal sphincter (LES) which cannot prevent the back flow of stomach acid into the esophagus and is usually associated with stomach problems. However, GERD is often not a result of any stomach problem, either structural or functional. At times, stomach problems may not be related to any disease process but is rather a result of physiological and psychological changes in the stomach.

Gas is frequent indication of indigestion and can develop if a person consume too much more than requirement or too quickly. Added to this it can also happen owing to allergies or deficiency of enzymes like enzyme called lactase can't adequately digest the sugars in dairy products as a result of which sugars contain the milk products ferment in the colon, producing gas. High-fiber foods like beans and cabbage can also create gas. Drugs like Aspirin, Nicotine, Corticosteroids, Erythromycin and Beta- Blockers create gastric troubles. Persons release gas 10 to 20 times a day but babies and kids exhibit different symptoms. Some of indicators of stomach ache include fever, significant vomiting, weight loss, and severe diarrhoea, blood in the stool, vomiting, pain observed in the upper right or lower right abdomen. Child's ache occurred beneath the belly indicates irritable bowel syndrome (IBS), constipation, colitis, or certain allergic reaction. The paediatric inflammatory bowel disease (IBD) symptoms include diarrhoea (sometimes with blood and mucus), stomach aches, loss of appetite, weight loss, unexplained fever and tiredness and late growth.

2.9.3 Symptoms Of Stomach Problems:

Belching, dyspepsia (indigestion), bloating, nausea, vomiting, heartburn, abdominal pain, flatulence, constipation and diarrhoea. belching is due to Aerophagia or air swallowing and the consumption of carbonated beverages are the more common causes of excessive belching (burping) which is not related to any pathology although it can be quite uncomfortable and distressing. Other grounds of gas production are a result of chemical digestion of foods and bacteria within the gut which may emanate from the stomach or small intestine. discomfort or pain, cramps, heartburn and or nausea is often present especially after eating. Often, indigestion is just mild upper abdominal discomfort that is temporary and rare and not related to any pathology. Nausea: It may be accompanied by vomiting or exist on its own. Both conditions are a sign of upper gastrointestinal irritation, although there are general causes, like drug and alcohol intoxication, pregnancy, chronic metabolic conditions, trouble to the head and eating disorders that may trigger nausea and/or vomiting. Swelling due to gas will often present with excessive belching and flatulence, although the preceding would be pertaining to gas accumulation in the lower gut, particularly the large intestine. universal upper gastrointestinal causes of nausea and vomiting are, gastritis, gastroenteritis, dyspepsia and peptic ulcers, and causes of delayed gastric emptying.

2.9.4 Hiatus Hernia

It is a condition in which part of the stomach sticks up into the chest through an opening in the diaphragm, Mallory-Weiss syndrome (tear in the esophagus), Narrowing of the esophagus, tumours or cancer in the esophagus, stomach, or duodenum (first part of small intestine), Ulcers - gastric (stomach) or duodenal (small intestine).

2.9.5 Heartburn

It is a common cause of centrally situated non-cardiac chest pain or discomfort. It is often associated with GERD and irritates the esophagus lining but not the stomach, although other causes involving the stomach, like a hiatal hernia, may also be responsible.

The three gastrointestinal problems namely gastric pain, flatulence, constipation and diarrhoea are often associated with the lower gut, however, pathology (the study of diseased body) in the upper gut could be a factor. Some of the stomach problems that may affect bowel movement and flatulence are, Infective gastroenteritis, Zollinger-Ellison syndrome, Achlorhydria, Gastric outlet obstruction and perforated peptic ulcer.

Sometimes fresh blood in the stool, which is known as hematochezia, may also be related to bleeding in the stomach but will only be evident when there is speedy transfer in diarrhoea.

2.9.6 Causes

Gastric pain can be felt anywhere in the upper abdominal region while in most cases it may be nothing more than a simple matter of indigestion, acidity or heartburn, in many cases it could signify something more serious that would require immediate medical attention. The severity of the pain by no means indicates the seriousness of the condition. Even minor causes such as stomach bloating or distension can result in severe pain. However, even mild pain may be an indication of a serious condition such as appendicitis or even cancer. For this reason it is important especially in cases where the pain persists for a long time consultation of doctor is inevitable. Improper food digestion is another cause for production of gas. Even though high fiber foods (like beans) are good for health but they create problems regarding flatulence.]

2.9.7 Identification Of Type Of Pain:

Generalized pain usually occurs in cases of indigestion, gas or a viral infection. Severe generalized pain may be indicative of a blockage of the intestine. Localized pain on the other hand may be symptomatic of a problem with any of the organs in the abdominal region. Pain that comes in waves, somewhat akin to colic, that is severe and starts and ends in a sudden manner may be caused by gallstones or kidney stones. Cramping pain may be a sign of a bacterial infection in the stomach. Other possible causes of gastric pain are appendicitis, bacterial or viral infections, cholecystitis or inflammation of the gallbladder, constipation, cancer, dissecting abdominal aortic aneurysm, diverticulitis, food poisoning such as salmonella or gastroenteritis, irritable bowel syndrome, inflammatory bowel disease, kidney stones, lactose intolerance, menstrual cramps, pancreatitis, Shingles, tumours and ulcers. Gastric trouble is not actually a disease but it is a kind of health condition that is an outcome of some other disease or a disorder. Gas problem may be very annoying at times. Generally gas is formed in the stomach due to numerous reasons such as: intake of too much alcohol, consuming extremely spicy food, inappropriate chewing the food, great extent of anxiety and stress, intestinal malfunction, eating sauces and condiments frequently and in large quantities and digestive disorders. It is also termed as flatulence any one may suffer severe gastric trouble due to infections caused due to bacteria such as H. Pylori. Some of the symptoms of gas in stomach are coated tongue, abdominal bloating and belching, bad breath, flatulence and short of appetite but this condition can be treated with simple and natural home remedies. By disturbing the protective layer of mucus, that bacterium produces ulcers which are sores in the lining of the stomach or first area of the small intestine. Other grounds include smoking which can bump up stomach acidity, and excessive NSAID use, consumption of alcohol may also be an added factor, stress can heighten symptoms of peptic ulcers and cause delay in healing. If left untreated, ulcers can bring about internal bleeding and may generate a hole in the stomach wall and small intestine or both which can lead to formation of serious infection. Ulcer scar tissue can also obstruct the digestive tract and long-term H. pylori infection can increase the risk of gastric cancer.

2.9.8 Symptoms Of Gas:

Generally gas is formed in the stomach due to numerous reasons such as excessive alcohol intake, consuming very spicy food, chewing the food improperly, Too much of anxiety and stress, Intestinal malfunction, Eating sauces and condiments frequently and in large quantities leads to digestive disorders, excessive gas, indigestion, acid indigestion, heartburn, bloating, swollenness are the common symptoms of gastric problems. The normal gases are almost odourless and do not produce any smell. It's considered normal to pass gas as flatus between 10 to 20 times a day but it varies from day to day, if gas is accompanied by extended period abdominal pain, bloody stools, a change in stool colour or regularity, weight loss, chest pain, continual or recurrent nausea or vomiting and gas or gas pains. For most people, the signs and symptoms of gas and gas pains are understandable. Voluntary or automatic passing of gas, either as belches or as flatus. Sharp pains or cramps in the abdomen may occur everywhere in the abdomen and can change spots quickly and get improved swiftly. Sometimes, the pain may be felt as 'knotted' feeling in the abdomen and there may be swelling and tightness in the abdomen (bloating). The gas pains may be constant or so forceful that it is misunderstood by mistake as heart disease, gallstones and appendicitis. The patient may suffer severe gastric trouble due to infections caused due to bacteria such as H. Pylori. Some of the symptoms of gas in the stomach are coated tongue, abdominal bloating, Abdominal belching, and bad breath, lack of appetite and flatulence. smoking and drinking is very ghastly for gas. While smoking there is extra consumption of air, which leads to gas pains so that it can be avoided to get rid of gas cramps in the long run. Factors responsible for aggravation of acid is excessive intake of pungent and sour food items, alcoholic preparations, salt, hot and sharp stuff which cause burning sensations, anger, fear, excessive exposure to sun and fire, intake of dry vegetables and alkalis, irregularity in taking food, etc. should be avoided to the possible extent.

2.9.9 Diagnosis

The clinical symptoms and history are very important aspects of diagnosis. The symptoms that accompany gastric pain are acid indigestion, heartburn, bloating or abdominal distension along with the type of pain, play a most important role in the diagnosis. Some of the characteristics of the pain that need to be considered are a sudden onset of abdominal pain may suggest a blockage of the bile duct by a gallstone or insufficient blood supply to the colon. Pain in the lower right side of the abdomen may be caused by appendicitis while pain in the lower left side of the abdomen may be formation of diverticulitis. Pain in the upper right side of the abdomen may be due to a gallbladder disorder such as cholecystitis or biliary colic. Laboratory tests can help to confirm the diagnosis and ensure to decide suitable course of treatment. The location of the pain can help to diagnose cause of stomach diseases. The pain of appendicitis centralised in the middle of the abdomen, then moves to the right lower abdomen which is the normal location of the appendicitis. The pain of gallbladder is felt in the middle, upper or right part of abdomen where gallbladder is located. True cramp like pains is the signs of vigorous contractions of the intestine. Obstructions of the bile ducts by gallstones mostly severe unyielding steady pain in the upper abdominal as well as upper abdominal or upper back. Pain due to inflammation usually aggravated by sneezing, coughing, or jarring motion so that they should be directed to lie down. The Pains of IBS in general expands and decreases over months to years. The pains of biliary colic last for 30 minutes or numerous hours. Acid related diseases like gastroesophageal reflux (GERD) lasts for weeks or months with most awful pain but gradually reduced. The pain of IBS is often relieved by bowel movements and may be relieved tentatively by bowel movement. Antacids may for the time being provide relief from pain caused by ulcers in the stomach or duodenum as the antacids and food counter act (neutralisation) against the existed gas which is accountable for causing pain the of ulcers. Examining the patient will provide the doctor with additional clues to the cause of abdominal pain. The doctor will determine the presence of sounds coming from the intestines that occur when there is obstruction of the intestines, the occurrence of signs of inflammation by special manoeuvres during the examination, the location of any tenderness, the existence of a mass within the abdomen that symbolises a tumour, enlarged organ, or abscess (a collection of infected pus) and the presence of blood in the stool may signify an intestinal problem such as an ulcer, colon cancer, colitis, or ischemia.

2.9.10 Investigations:

Any present and past drug used, especially continual use of NSAIDs, record of family members with ulcers, consumption of alcohol and smoking, stress assessment and analysis are highly valuable in determining the cause of the condition. An experiment with acid-blocking medication is given with a four-week course of acid-suppressing drugs. In such cases, the symptoms may subside. Yet symptoms persist, and then further testing is needed. upper gastrointestinal endoscopy is done to detect the presence of ulcers. If Zollinger-Ellison syndrome is suspected, blood levels of gastrin should be measured. barium meal studies are also useful as these may show inflammation, active ulcer craters, or deformities and scarring due to ulcers. If an ulcer is present, a precautionary biopsy of the ulcer is usually taken to exclude malignancy as it is not uncommon for a malignancy to manifest as an ulcer.

2.9.11 Tests And Diagnosis:

Laboratory tests such as complete blood count (CBC), urine analysis, liver enzymes, pancreatic enzymes (amylase and lipase), and are frequently performed in the assessment of abdominal pain. Suffering from gastric problem indicates probably due to the lack of hydrochloric acid in stomach. For accurate diagnosis of stomach (abdominal) disorders various tests to be done are blood, stool, urine and neurological tests, food allergy and intolerance tests, skin tests, breath tests, elimination diet and food challenge tests, Low-FODMAP diet trial in IBS, low-fructose diet trial in fructose malabsorption, endoscopic investigations, upper endoscopy - Esophagogastroduodenoscopy, abdominal ultrasound, X-ray, upper and lower GI, CT, MRI, MRA, angiography, colonoscopy, small bowel or capsule endoscopy, double balloon enteroscopy and gallbladder tests, gallbladder ultrasound, HIDA scan, ERCP, MRCP.

2.9.12 Investigation Of The Stomach And Duodenum:

Breath test for *H. pylori*, gastric emptying test, upper endoscopy with biopsy liver tests are namely liver (hepatic) panel, liver enzymes and bilirubin levels in the blood. Hepatitis antigens and antibodies Investigations of pancreas are ultrasound of pancreas, CT of pancreas. pancreatic function tests are amylase, lipase, trypsin, CA 19-9 (pancreatic cancer antigen) and ERCP.

After reviewing the dietary habits, medical history and daily activity, a physical examination of the abdomen is performed to see if it is swelled up and listen to identify hollow sound by simply tapping the abdomen to know the presence of excess gas and on affirmation may recommend further tests if needed to rule out conditions that are more severe, for further suitable treatment. After a blood test is done to diagnose lactose

intolerance if lactase deficiency is the established ground of gas, the milk products should be avoided for some time. To decide if someone produces too much gas in the colon or is abnormally sensitive to the passage of normal gas volumes, the specialist consultant may ask the patients to count the number of times they pass gas during the day to confirm existence of gas.

2.9.13 Plain X-Rays Of The Abdomen:

Plain KUB (because they include the kidney, ureter, and bladder) X-rays of the abdomen also be done to show enlarged loops of intestines filled with abundant amounts of fluid and air if there exist intestinal obstruction. Patients with a perforated ulcer may have air escape from the stomach into the abdominal cavity and can be seen on a KUB on the bottom of the diaphragm and it may disclose a calcified kidney stone that has entered into the urethra and resulted in abdominal pain or calcifications in the pancreas that put forward chronic pancreatitis.

2.9.14 Endoscopy:

The most common instrument for investigating stomach problems is endoscopy. This procedure is performed as an outpatient. The procedure is done by inducing intravenous sedation and then the endoscope is inserted by way of the mouth and can visualize stomach and duodenum through the entire swallowing tube attached with a small flexible camera which takes nearly 30 minutes and the physician get biopsy samples if necessary. Endoscopy Available 4 procedures are Esophagogastroduodenoscopy (E G D) which is useful for detecting ulcers, gastritis where stomach inflammation occurs or stomach cancer. Colonoscopy or flexible sigmoidoscopy is valuable for diagnosing contagious colitis, ulcerative colitis or colon cancer. Endoscopic ultrasound (E U S) is helpful for diagnosing cancer and gallstones provided the C T scan or M R I scans unsuccessful to identify the said diseases. Ballon endoscopy, the most modern technique allows endoscopes to be passed through the mouth or anus into the small intestinal to detect abdominal pain or bleeding through biopsy.

2.9.15 Findings Through Endoscopy:

Oesophagitis (inflammation of the oesophagus). The operator will see areas of redness on the lining of the oesophagus. Duodenal and stomach ulcers. An ulcer looks like a small, red crater on the inside lining of the duodenum or stomach. Duodenitis and gastritis (inflammation of the duodenum and stomach). Cancer of the stomach and oesophagus. Various other rare conditions.

2.9.16 Facing Diagnosis Difficulties:

Tests are not always irregular. The CBC and other blood tests may be normal despite severe infection or inflammation, particularly in patients receiving corticosteroids. Ultrasound examinations often fail to spot gallstones, particularly tiny ones. CT scans may not succeed to show pancreatic cancer, particularly small ones. The KUB can fail to notice the signs of intestinal blockage or stomach perforation. Ultrasounds and CT scans may be unsuccessful to display appendicitis or small sores. IBS symptoms may wrongly deduce bowel obstruction, cancer, ulcer, gallbladder attacks, or appendicitis. Crohn's disease may be like appendicitis and infection of the right kidney can imitate severe cholecystitis, likewise, kidney stones as appendicitis or diverticulitis. Ruptured right ovarian as appendicitis, kidney stones as appendicitis or diverticulitis and shattered left ovarian cyst as diverticulitis.

Esophagogastroduodenoscopy (E G D):

This test is otherwise known as Upper endoscopy or Gastroscopy where in the lining of the esophagus (the tube that connects the throat to the Stomach), stomach, and first part of the small intestine are examined which is done with a minute camera (flexible endoscope) inserting down the throat. 6 to 12 hours preceding to the conduct of test not anything should be eaten and discontinue receiving aspirin and other blood-thinner medicines as a minimum 3 days before undertaking the test. Sedative and a painkiller is given to the patient to feel free from pain duly spraying local anaesthetic into the mouth to keep away from coughing or silence while the endoscope is inserted. Mouth guard is kept to safeguard teeth and the endoscope instrument. After lying on the left side of the patient and soon after the sedatives become effect, the endoscope is inserted through the esophagus into the stomach and duodenum duly sending air into the endoscope to enable the doctor to see and examine the lining of the esophagus, stomach, and upper duodenum and if essential biopsy (tissue samples) can be taken through the endoscope to examine under the microscope in different angles like stretching or widening a narrowed area of the esophagus for accurate diagnosis of nature of disease which go on 5 to 10 minutes. After the test is finished, the patient could not consume foods and liquids until suppressing reflex come again to normal state. This EGD may be done if the patient have symptoms that are new and cannot be explained, or are not responding to treatment, such as black or tarry stools or vomiting blood, carrying food back up

(regurgitation), feeling full than normal or after eating less than normal, sensing food is caught at the back of the breastbone, Pain or discomfort in the upper abdomen, low blood count (anemia) that cannot be explained and heartburn swallowing trouble or ache due to swallowing, weight loss that cannot be explained and nausea or vomiting that does not go away, containing cirrhosis of the liver, distended veins (called varices) in the walls of the lower part of the esophagus which may commence to bleed and have Crohn's disease. The test may also be employed to take a piece of tissue for biopsy.

2.9.17 Normal Results:

The esophagus, stomach, and duodenum should be smooth and of normal colour. There should be no bleeding, growths, ulcers, or inflammation.

2.9.18 Abnormal Results:

They may specify increased levels of gastrin can cause enlarged release of acid and may lead to ulcers (Zollinger-Ellison syndrome). The presence of bile in the stomach point out material is backing up from the small intestine (duodenum) which may be normal and it may also take place after part of the stomach is removed with surgery. An abnormal EGD may be the outcome of celiac disease, esophageal rings, esophagitis (when the lining of the esophagus becomes inflamed or swollen), esophageal varices (swollen veins in the lining of the esophagus caused by liver cirrhosis), gastritis (when the lining of the stomach and duodenum becomes inflamed or swollen), gastroesophageal reflux disease (a condition in which food or liquid from the stomach leaks backwards into the esophagus).

2.9.19 Adverse Effects Of Biopsy:

There is a small likelihood of a hole (perforation) in the stomach, duodenum, or esophagus. There is also a minute risk of bleeding at the biopsy site. The patient may have a reaction to the medicine used during the procedure, which could cause not breathing easily (apnea), respiratory depression (difficulty in breathing), hypotension (low BP), Slow heartbeat known as bradycardia, extreme sweating, 1 out of 1,000 people face Spasm of the larynx (laryngospasm).

III. X- Rays

Other radiological studies frequently used to assess patients with continuous stomach problems include a barium swallow, where a dye is consumed and pictures of the esophagus and stomach are obtained every few minutes. Other tests include a 24-hour pH study, CT scans or MRI.

3.1 Existing 5 Radiology Examinations:

Abdominal ultrasound is constructive to diagnose gallstones, cholecystitis appendicitis, and ruptured ovarian cysts which cause pain. Computerised Tomography (CT) is valuable in identifying pancreatic cancer, pancreatitis and diverticulitis and swellings in the abdomen and also aid in diagnosing ailments like crohn's in the small intestine and bowel. Magnetic Resonance Imaging(MRI) is used to diagnose as in the case of CT scan but Barium X-rays is also useful to detect ulcers, blockages undoubtedly and in case of inflammation endoscopy is useful to diagnose crohn's disease, little bowel tumours and bleeding cuts which cannot be recognised by either X- rays or scans.

The stomach acid test is used to evaluate the amount of acid in the stomach and also computes the level of acidity in stomach contents. The patient should not to eat or drink for more than 4 hours previous to the test is executed. Fluids in the stomach are taken out through a tube duly inserting into the stomach through the esophagus (food pipe) and the patient may feel discomfort or a gagging sensation while the tube is inserted. A type of hormone called gastrin may be injected into the body to assess the ability of the cells in the stomach are discharging acid. Then the stomach contents are taken away and analyzed.

3.1.1 Acid And Alkaline Self-Test:

This test is meant to find out whether the body fluids are the nature of either too acidic or excessively alkaline. This test should be carried out prior to eating or in any case one hour after eating. Saliva or urine is spread over the litmus paper and red litmus paper changes blue in an alkaline medium and blue litmus paper turns red in an acid medium. If the test specified that the body of the patient is too acidic, examination is needed to know ulcer healing drugs are functioning. The standard capacity of the stomach fluid is 20 to 100 mL and the pH acidic is 1.5 to 3.5. Which may be translated to real acid production in units of mill equivalents per hour. Normal value ranges may vary slightly depending on the lab doing the test. If normal discharge of gas exceeds 20 times in a day or weight loss, chest pain, vary in stool colour or stool frequency, constant or repeated nausea or vomiting medical attendance is compulsory.

3.1.2 Gastric Trouble Treatment:

It is important always to remember everyone has gas in the digestive tract. Main source of gas are swallowed air and regular breakdown of certain foods by risk-free bacteria naturally exist in the large intestine. Carbohydrate foods can trigger gas while fats and proteins produce trivial gas. The common symptoms of gas are belching, flatulence, bloating and abdominal pain. The ways to reduce the discomfort caused by gas are changing diet, taking non-prescription medicines and also reduction of swallowing air. The foods that normally cause gas are vegetables, such as broccoli, cabbage, brussel sprouts, onions, asparagus, fruits namely pears, apples, peaches, whole grains like whole wheat and bran, soft drinks, fruit drinks, milk and milk products, for example cheese and ice cream, and packed foods prepared with lactose, for instance bread, cereal, and salad dressing.

3.1.3 Over-The-Counter Remedies:

Several non-prescriptions, medicines are available to render help to reduce signs and symptoms, including antacids with Simethicone. Lactase supplements contain digestive enzymes, immensely help to digest carbohydrate foods that normally produce gas. If there is lactose intolerable patients, lactase supplements consists of the enzyme lactase (Lactaid, Dairy-Ease), assists to digest lactose since lactose-free or reduced lactose dairy products may diminish gas. Mylanta II, Maalox II, and Di-Gel antacids, contain, a foaming agent known Simethicone blend with the gas bubbles in the stomach so that gas is more easily expelled away but the said medicines have no effect on intestinal gas. Charcoal tablets (Charco Caps, Charcoal Plus, others) taken before and after a meal also may help, but there's no enough distinct evidence that charcoal alleviates gas, like Simethicone. In addition, charcoal may discolour inside the mouth. Add Beano (which contain a natural digestive enzyme) that can help prevent gas from beans and vegetables helps to decrease the amount of gas they produce and it works maximum when there's only a modest gas in the intestines.

3.1.4 Remedies:

If unexplained stomach pain noticed and ulcers are suspected due to intake of aspirin or other NSAID (Non-Steroidal Anti-Inflammatory Drug) pain reducers," should be withdrawn since they worsen rather than help. Ten to 15 days of antibiotic treatment, often coupled with acid reduction therapy, can rid of H. pylori and surgery is an option in more severe cases. A study published in the World Journal of Surgery in 2008 explained that laparoscopic repair should be considered for all patients suffering with so-called perforated ulcers.

3.1.5 Lactose Intolerance:

Doctors can test lactose intolerance by using a breath test, which detects heightened levels of hydrogen, before the said test the patient drinks a lactose-containing beverage, and also a test for stool acidity. There's also a cheaper approach to diagnosis, 'do-it-yourself' Bickston said "Buy a tall container of milk, drink it, and call me the next day and tell me how the afternoon was," he said If experienced bloating, abdominal pain, or diarrhoea, such person probably lactose intolerant. Over-the-counter pills can replace the missed enzyme, called lactase, and some milk and milk substitutes are lactose-free. Avoiding all dairy products, in any case, may not be necessary. Bickston said many lactase-deficient people "can tolerate small amounts of lactose."

3.1.6 Diverticulitis:

It is a condition that develops when pouches (diverticula) formed in the wall of the outward through the colon, or part of a large intestine. When one or more of these pouches become aroused or infected, the condition is called diverticulitis. Fig 4 shows how the pouches formed in the walls of colon.

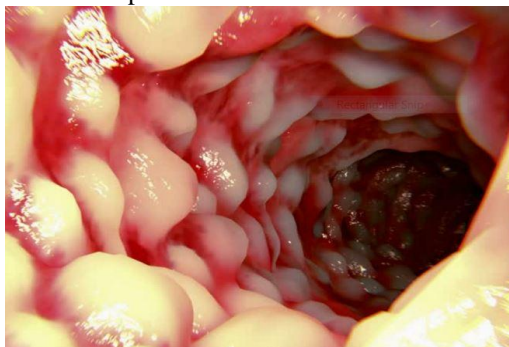


Figure 4. The diverticula formed in the wall of colon.

It is estimated that 3 in 5 Americans older than 70 years comprise the abnormal bulges called diverticula wherever in the wall of their intestinal tract. Yet only 20 percent will ever know of a problem like diverticulitis (inflammation of a pouch), a tear, or an abscess and such patients should avoid nuts, corn, including popcorn since such foods would get stuck in a pouch during digestion and inflict disorder. In extreme cases, a tear can lead to an outbreak (abscess) which can cause nausea, vomiting, fever, and intense abdominal inflammation that requires a surgical repair. Some specialists deem a diet too low in fiber may trigger the condition, which grows increasingly common with age and is most prevalent in western societies.

3.1.7 Inflammatory Bowel Disease:

People with Crohn's disease or ulcerative colitis, are the two most common inflammatory bowel diseases, with complain of abdominal pain and diarrhoea and at times experience anemia, rectal bleeding, weight loss, or other symptoms. R. Balfour Sartor, a chief medical adviser to the Crohn's & Colitis Foundation of America said that no perfect test exists for the said diseases, and thus patients prone to misdiagnosed initially and appendicitis, irritable bowel syndrome, an ulcer, or an infection is again and again wrongly imagined. Both disorders may arise from an unruly immune system that leads the body to attack the gastrointestinal tract.[43-48] Crohn's involves ulcers that may dig out deep into the tissue lining at any portion of the GI tract, leading to infection and thickening of the intestinal wall and blockages that need surgery. Ulcerative colitis, by contrast, cause troubles only the colon and rectum, causing ulcers and colitis is characterized by bleeding and pus. Treatment of these two disease require backing and then incessantly keeping in check the come again of inappropriate inflammatory. Both steps are achieved through some combination of anti-inflammatory drugs, steroids, and immune suppressants. Crohn's patients may also be given antibiotics or other specialized drugs. Surgery "cures" ulcerative colitis by removing the colon but patients must wear a pouch internally or externally for eliminated waste. IBD patients should take special care when popping NSAIDs like aspirin, as these painkillers can trigger further gut inflammation in 10 to 20 percent of patients, Themis Dassopoulos, director of inflammatory bowel diseases at Washington University in St. Louis states explained that fervent arguments are going on whether Crohn's patients can benefit if given highly potent drugs in the initial stage of treatment as against to increasing potency over time from milder initial treatments, as is conventionally done.

3.1.8 Celiac Disease:

About 1 percent of the U.S. population has celiac disease, an autoimmune and digestive disorder. Sufferers are unable to eat gluten a protein exists in rye, barley, wheat, and others without triggering an attack on their small intestine. Symptoms vary from person to person, but include, abdominal pain and bloating, vomiting, chronic diarrhoea, constipation, fatty stool and foul-smelling. This disease is normally diagnosed with blood tests and stool samples. Since there's no cure, people can manage celiac disease by adopting a gluten-free diet, inflammation in the small intestine will subside within few weeks. Even accidental eating a product contain gluten could be a reason to flare-up at any point of time.

3.1.9 Constipation:

But excessive uses of laxatives, which made the intestines to narrow at regular intervals, which make the gut, require more of the drugs in due course and finally rendering its service ineffective. Sandler said that it is not necessary to have daily bowel movement but between three times a day and three times a week is normal. Constipation, hard stools, and excreting stool with strain could lead to haemorrhoids or an anal fissure. If anybody feeling discomfort and can't make their bowels move, over-the-counter medicines such as genuine milk of magnesia are useful. Whether tried laxatives or not, without a bowel movement once in a week irrespective of taking laxatives or not is sufficient reason require examination. Constipation best is avoided through regular exercise and a diet high in fiber from whole grains, fruits, and vegetables. Old people liable to get constipation more frequently. It is estimated that Americans spend 725 million dollars a year on laxatives.

3.1.10 Over-The-Counter (OTC) Medicines:

These medicines may be obtained without prescription. There are 3 types of OTC medicines. Proton pump inhibitors (PPIs), H₂ blockers and antacids. [36-42] The following drugs may help to reduce gas so that they may be considered but dosage varies depending on the form of medication and the patient's age. Acidity-Treatment: It was also established that the quantity of blockage of acid secretion in response to anti-secretory treatment may depends on the genetic features as well as the presence of Helicobacter pylori infection. Routine useful drugs are proton pump inhibitors, H₂ blockers, antacids and prostaglandins. Antacids provide immediate relief of symptoms by neutralising the excess secretion of acid. A group of drugs called H₂ Receptor blocking drugs like Cimetidine, Ranitidine, Famotidine or Nizatidine enable the stomach to produce less acid by blocking histamine receptors. Another group of drugs called the proton pump inhibitors are more powerful and generate

mechanism in acid-making cells enable to prevent acid production. H₂ - receptor blocker medications can reduce acid production, and proton-pump inhibiting (PPI) can block acid production and heal the esophagus.

3.1.11 Proton Pump Inhibitors:

They greatly reduce the production of acid and relieved from heartburn not solved by antacids or H₂ blockers. It may take some more time by proton pump inhibitor to reduce the symptoms than an H₂ blocker, but relief stayed longer. These medicines are most helpful for people who are suffering from heartburn for more than 2 days in a week. The prominent proton pump inhibitors (PPIs) available orally are Pantoprazole, Rabeprazole, Omeprazole, Esomeprazole, Lansoprazole and Dexlansoprazole.

3.1.12 Pantoprazole:

It is used for short-term treatment of erosion and ulceration of the esophagus caused by gastroesophageal reflux disease. Pantoprazole is one of the most potent proton-pump inhibitors with long-term effect and reduces the too much gastric acid production such as Zollinger-Ellison syndrome. It works by decreasing the amount of acid made in the stomach. Initial treatment is by and large eight weeks' time, after which another eight-week course of treatment may be continued if necessary. It is used for treating acid-related diseases of the stomach and intestine like of peptic ulcer and gastro-oesophageal reflux disease (GERD) and Zollinger-Ellison syndrome. The scientific response of acidity treatment links directly with the extent of restraint of acid secretion achieved. If there are severe liver problems checking of liver enzymes more frequently is essential, especially when the patient is taking Pantoprazole as a long-term treatment. In the case of a rise of liver enzymes the treatment should be stopped

3.1.13 Rabeprazole, Omeprazole Magnesium, Lansoprazole, Dexlansoprazole, Esomeprazole (Latest Drug) Oral:

These PPI drugs are mainly used to treat certain stomach and esophagus problems (such as acid reflux, ulcers). It works by decreasing the amount of excess acid in the stomach and relieves symptoms of heartburn, difficulty swallowing, and relentless cough helps to heal acid damage to the stomach and esophagus, put off ulcers, and assists to stop cancer of the esophagus. All these drugs are more or less one and the same healing effects

The above explained proton pump inhibitors drugs can completely inhibit acid secretion and have a long duration of action duly supporting ulcer healing being key components of H. pylori eradication treatment. These proton pump inhibitors have substituted H₂ blockers in most clinical circumstances owing to their superior speedy action and more effectiveness.

For uncomplicated duodenal ulcers, Omeprazole 20 mg, or Lansoprazole 30 mg once in a day can be given for a period of 4 weeks, or those occurring in patients with serious underlying illness or complicated duodenal ulcers like multiple ulcers, bleeding ulcers over 1.5 cm to be treated with higher doses of Omeprazole 40 mg or Dexlansoprazole 60 mg once in a day. Gastric ulcers require treatment for 6 to 8 weeks where as Gastritis and GERD need 8 to 12 weeks treatment but GERD in addition necessitates long-term continuation.

It must be noted that continuing proton pump inhibitor treatment may bring about cell hyperplasia where in extraordinary increase in amount of tissue or growth of new normal cells. Yet there is no proof of dysplasia (change in cell or tissue) or malignant change in patients who get this treatment. Development of malabsorption of vitamin B₁₂ may happen.

3.1.14 H₂ Blockers:

H₂ blockers reduce the amount of acid produced by the stomach. While they don't relieve symptoms right away, H₂ blockers relieve symptoms for a longer period of time than antacids. These drugs (Cimetidine, Ranitidine, Famotidine, and Nizatidine) available orally without prescription are ready for action to inhibit histamine (H₂ receptor), by suppressing gastric acid secretion and proportionately decrease amount of gastric juice and well absorbed from the GI tract with commencement of action 30 to 60 minutes after intake and its peak effects at 1 to 2 hours. Duration of action is proportional to dose and ranges from 6 to 20 hours. But in aged patients doses should be reduced frequently. For duodenal ulcers, for effective treatment and good results are obtained with oral administration of Cimetidine 800 mg, Ranitidine 300 mg, Famotidine 40 mg, or Nizatidine 300 mg given at bedtime or after dinner once in a day for a period of 6 to 8 weeks is necessary. For gastric ulcers the same schedule be continued for 8 to 12 weeks, and morning administration may be equally or more helpful. Children more than 40 kgs weight may be given adult doses. Below 40 kgs, the oral dosage of ranitidine is 2 mg per kg and Cimetidine 10 mg per kg q 12 h. For GERD, H₂ blockers are now mostly used for pain management.

Cimetidine has minor anti-androgen effects expressed as reversible gynecomastia (overdevelopment of the male breast) less commonly erectile dysfunction with prolonged use. Change of mental status, diarrhoea, rash, drug fever, myalgias, thrombocytopenia, and sinus bradycardia and hypotension have been shown up with all H₂ blockers, normally in less than 1 % of treated patients but more commonly in elderly patients after rapid IV administrations. Cimetidine like other H₂ blockers interacts with the P-450 microsomal enzyme system and may cause delay metabolism of the drugs eliminated through this system. (Examples are Phenytoin, Warfarin, Theophylline, Diazepam and Lidocaine).

Antacids oral: Antacids available orally reduce the effect of acid in the stomach by neutralizing it. Antacids can provide almost instant relief for many stomach troubles such as indigestion. However, problems that are more serious may require additional treatments. Antacids act against stomach acidity by neutralizing gastric hydrochloric acid or preventing the secretion of acid. They are taken orally, usually in a tablet or liquid form and can be used to treat heartburn, indigestion, symptoms of acid reflux. Antacids can have laxative (bowel-loosening) or constipating effects. They can lead to alkalosis, a condition in which too little acid prevents the body from functioning properly. Antacids can also increase the risk of developing sensitivity to certain foods and have been linked to possible bone fracture and allergic reactions in some people. Excessive use of antacids can lead to an overdose on calcium carbonate with magnesium, two common ingredients in many antacids. Antacids may interfere with the absorption of other drugs (eg: Tetracycline, Digoxin). Antacids can only soothe some of the symptoms of acid reflux disease and peptic ulcers, but cannot cure them. Some heart attacks can impersonate stomach pains. Many antacids contain calcium, which could lead to excessive intake. Antacids can interact with Tetracyclines and Amphetamines. Antacids relieve symptoms, promote ulcer healing, and reduce recurrence. They are relatively inexpensive than PPIs. The optimal antacid treatment for ulcer healing is 15 to 30 mL of liquid or 2 to 3 tablets 1 hour and 3 hours after each meal and at bedtime. The total daily dosage of antacids should provide 200 to 400 mEq neutralizing capacity. However, antacids have been superseded by acid suppressive therapy in the treatment of peptic ulcer and are used only for short-term symptom relief. Digene or Gelusil chewing tablet can be used up to 4 tablets per day depending on the severity of acid secretion.

In general, there are 2 types of antacids namely absorbable and non-absorbable. Absorbable antacids (Example Na bicarbonate, Calcium carbonate) provide rapid, complete neutralization but may cause alkalosis and should only be used temporarily (1 or 2 days). Non absorbable antacids (e.g., aluminium hydroxide or Magnesium hydroxide) have fewer systemic adverse effects are preferred. In addition, some antacids adsorb pepsin.

3.1.15 Aluminium Hydroxide:

It is a relatively safe, commonly used antacid. With its chronic use, phosphate depletion occasionally develops due to binding of phosphate by aluminium in the GI tract. The risk of phosphate depletion increases in alcoholics, undernourished patients, and patients with renal disease (including those receiving haemodialysis). Aluminium hydroxide causes constipation.

3.1.16 Magnesium Hydroxide:

It is a more effective antacid than aluminium but may cause diarrhoea. To limit diarrhoea, combination of magnesium hydroxide and aluminium antacids are being manufactured. Because small amount of magnesium hydroxide is absorbed, these preparations should be used with caution in renal disease patients.

3.1.17 Antacid Oral, Comfort Gel Oral:

This medication is used to treat the symptoms of too much stomach acid such as stomach upset, heartburn, and acid indigestion. It is also used to relieve symptoms of extra gas such as belching, bloating, and feelings of pressure/discomfort in the stomach and gut. Simethicone helps break up gas bubbles in the gut. Aluminium and magnesium antacids work quickly to lower the acid in the stomach. Liquid antacids usually work faster and better than tablets or capsules. Simethicone helps break up gas bubbles in the gut. Famotidine is a drug that blocks acid release in the stomach and can help stop heartburn and acid indigestion from coming back. Calcium carbonate and magnesium hydroxide are antacids that work quickly to lower acid in the stomach and stop heartburn. The combination of these three medications is used to treat heartburn and other symptoms caused by too much acid in the stomach (acid indigestion).

3.1.18 General Side Effects Of OTC Antacids And Acid Reducers.

Antacids and acid reducers usually cause only minor side effects that go away on their own. These may include headaches, nausea, constipation, or diarrhoea. Kidney disease patients shall not use antacids consists of

calcium carbonate or aluminium hydroxide and magnesium carbonate unless without doctor's prescription. Proton pump inhibitors reduce calcium absorption from foods and supplements and may increase the risk for osteoporosis in respect of postmenopausal woman moreover they may create problems for pneumonia badly effecting immune system mainly in old people. More than one type of antacid or acid reducer should be used at a time, without advice of the doctor.

3.1.19 Digestive Enzymes Oral:

This medication contains digestive enzymes, which are natural substances needed by the body to help break down and digest food. It is used when the pancreas cannot make or does not release enough digestive enzymes into the gut to digest the food. Depending on the amount of enzymes in the product, can be used for indigestion, as a supplement, or as replacement therapy in chronic pancreatitis, cystic fibrosis, cancer of the pancreas, after surgery on the pancreas or gut. These agents neutralize gastric acid and reduce pepsin activity (which diminishes as gastric pH rises to > 4.0).

3.1.20 Prostaglandins:

Certain prostaglandins (especially Misoprostol) inhibit acid secretion by decreasing the generation of cyclic AMP that is triggered by histamine stimulation of the parietal cell, and enhance mucosal defence. Synthetic prostaglandin derivatives are used predominantly to decrease the risk of NSAID induced mucosal injury. Patients at high risk of NSAID induced ulcers in elderly ulcer patients; those taking corticosteroids are to take Misoprostol 200 mcg with food along with their NSAID. Common adverse effects of Misoprostol are abdominal cramping and diarrhoea, which occur in 30 % of patients. Misoprostol is a powerful abortifacient and is absolutely contraindicated in pregnant women who are not using contraception.

3.1.21 Sucralfate:

This drug is a sucrose-aluminium complex that dissociates in stomach acid and forms a physical barrier over an inflamed area, protecting it from acid, pepsin, and bile salts. It also inhibits pepsin-substrate interaction, stimulates mucosal prostaglandin production, and binds bile salts. It has no effect on acid output or gastrin secretion. Constipation occurs in 3 to 5 % of patients. Sucralfate may bind to other drugs and interfere with their absorption. The finest way to stay away from acidity is to decrease oil and spicy things of foods normally followed. In addition timing is must for consumption of foods, for instance, breakfast should be taken around 7am to 8 am, lunch should be taken around 12 noon to 1:00 pm and dinner should be taken around 7 pm. Certain mild exercises, asanas and pranayam can aid to control the acidic condition as well as stomach wounds. Regular walking can reduce the health problems as well as acidity. Gastroenterologist Dr. Jose Filipe Alvares said "the best thing to do is avoid milk, cheese, milk sweets, chappatis, and chana"

IV. Home Remedies To Prevent Gastric Troubles

It is known fact that acidity is due to improper schedule and it can be easily tackled by following simple methods:

Fasting for two days or three will provide rest to stomach and washes out the toxic agents that are causing pain and gas. Drink water not less eight glasses everyday to cure gastric pain which will thrust gases to the excretory tract and create the empty space. Drinking coconut water will soothe the digestive system and gives the relief from gastric problem apart from acid reduction. The stomach can actually be returned to a normal condition simply by drinking nothing but small quantity of coconut water for a period of twenty four hours. Chewing a piece of ginger after the meals or mix with food will reduce the gas formation in stomach. Grind the turmeric leaves and consume it with in a glass of milk repeatedly for the better results since it is a fantastic remedy of gas ache. Drinking potatoes juice before having meals two times a day for better results. Blend the garlic with black pepper, cumin and coriander seeds boil for five minutes and drink the said juice at room temperature twice a day may yield better results. Boil cinnamon or it's powder in water duly permitting the water to cool, add honey and drink early in the morning before breakfast which give good relief from gastric trouble. Chew pods of cardamom 2 to 3 times every day or drink cardamom tea yield a quick relief from gas in the stomach. Drink peppermint herbal tea prepared with peppermint leaves 2 times a day after adding honey provides quick relief from gastric trouble. Take the warm water and add it two table spoons of apple cider vinegar to warm water and drink at room temperature for the immediate relief from the gastric problem. A combination of lemon and soda, with a pinch of baking soda is an outstanding antacid which demonstrate instant relief from gas. If there is burning sensation in the stomach, coriander leaf juice mixing with butter milk must be drunk to get abrupt relief from all sorts of indigestion as well as gastric problem. Black pepper can enhance flow of gastric juices and initiate the activity of digestion if taken with combination of milk to keep the stomach away from gastric troubles. Consumption of clove buds directly or uses the clove oil for reducing gastric

problem. Combination of radish with fresh tomatoes and carrots or vegetable salad without adding salt cleans out all acidic part from the blood eliminating through urine. Sucking a small piece of jaggery slowly which acts on digestive system and hold back the level of acidity. Chewing and swallowing basil leave juice is the good source to fight against acidity.

Sprinkle some salt over the carom (ajowain) seeds and slowly chew it or drink its juice after meal which removes uneasiness. Consumption of asafoetida by mixing a bit of this spice in a glass of warm water cures several digestive problems such as constipation, flatulence, stomach ache etc. Adding and drinking little fennel seeds powder to water yields encouraging result in curing acidity. Chamomile (ajwain) is an anti-inflammatory agent which is highly efficient to increase the digestive system. Tea of chamomile flowers to be consumed twice a day to get rid of from gastric trouble. Massaging the abdomen with three to four drops of lavender oil or chamomile oil offers relief from gastric troubles. Watermelon water as well as cucumbers remains the intestine humid and hydrated.

4.1 Warm Water:

Drinking lots of water will wash out all acidic matter from the body. To keep healthy life cultivates a habitual custom of drinking warm water once in the morning in empty stomach for indigestion and stomach problem. If heavy meal is consumed, drink a glass of warm water as this will absorb the fat that has spread due to eating of spicy food.

Eating fifty percent raw foods like apples, avocados, bananas, grapefruit, grapes, lemons, pears, pineapples, blackberries, strawberries, and all categories of vegetables, fresh fruits, particularly citrus fruits and vegetables enable to diminish acidosis and to put right acid and alkaline balance and the nutrients available in them absorbed restricting intricacy in the body. Ensure food is mixed well with saliva to form liquid paste evenness by chewing it well before swallowing gradually without eating too much but should be avoided intake of fluids throughout meals.

Two of the most regularly utilized home remedies for gastric pain include garlic soup and lemon juice with water which can be made by grinding together garlic, black pepper, coriander seeds and cumin seeds duly boil with water. Lemon juice with warm water should be taken early in the morning who are not allergic action to lime. Herbal teas prepared with some blackberry, mint, chamomile and raspberry will significantly facilitate with effective digestion. Drinking a glass of water with a little bit of baking soda mixed in it will provide almost instant relief. Coconut water is known to be extremely beneficial when it comes to treating gastritis as it provides the stomach with the required amount of rest along with a replenishment of essential nutrients and vitamins. Avoid beans, cereals, crackers, eggs, flour products, grains, oily foods, macaroni, and sugar. Plums, prunes, and cranberries do not oxidize and therefore remain acid to the body. Avoid these until the situation improves. Since excess vitamin C may lead to acidosis, reduce your intake of vitamin C for a few weeks. When taking vitamin C, use a non-acid-forming variety. Avoid any intake of alcohol, meat, red pepper, sour foods, strong teas and coffee or even pastries and cakes for faster recovery. Fasting for a period of two or three days will help the stomach to rest and allow the toxic conditions causing any inflammation to subside.

Avoid foods and beverages such as alcohol, coffee, and chocolate, fatty foods including fried food and cheese, carbonated beverages which accumulate gaseous carbon dioxide causes burping and acid to bubble upwards. In addition, carbon dioxide in aqueous solution forms carbonic acid, further eroding the mucus lining of the stomach. Tomatoes, tomato sauce and other ferments such as pickles and sauerkraut, preservatives irritate the esophagus and stomach and peppermint or spearmint in case of hyperacidity. Favour the foods and beverages such as steamed greens such as kale, carrots and foods with beta-carotene, Limes, pomegranate, cranberry, Aloe vera juice, Fennel seeds, fresh ginger, Okra and cooked, skinned cucumber. Even an excess intake of sweets can cause acidity as the sugar causes fermentation and produces acid in the stomach, particularly if wrongly combined with other food types. The drawback of the caffeine in coffee and tea is that it increases acid production in stomach if consumed excessively. Too much addiction to strong foods such as tea and coffee and smoking and alcohol may cause hyperacidity. It is imperative not to overeat, instead take small meals, three times a day. Completely avoid cigarette smoking which can increase the amount of air you swallow.

4.1.1 Foods To Be Avoid:

Avoid foods that are rich in oils and fats as they are not easy to digest, so that they may create the stomach to discharge more acids. Avoid candies and chewing gum, whole-wheat bread, bran cereals or cream, ice cream, ice milk, and beer, sodas and other types of carbonated beverages. The diet should contain a proper blend of all the tastes. Spicy food must be just one dish rather than the whole meal. Fibers are necessary in the diet as they help in the digestion. Do not consume sour foods such as pickles, tamarinds, vinegar as they consist acidic contents. Maintain upright position at least one hour after eating. If the odour from passing gas concerns limiting foods high in sulfur-containing compounds such as broccoli, brussels sprouts or other cruciferous

vegetables, beer, and foods high in protein is inevitable. Ensure consuming smaller portions of problem foods to avoid creating excess gas. Recognize and keep away from the foods that cause gas problems such as beans, cabbage, cauliflower, onions, asparagus, pears, apples, peaches, broccoli, sprouts, prunes, sugar-free. Using low-lactose dairy foods, such as yogurt, instead of milk and consuming small amounts of milk products at one time or consuming them with other foods also may make them easier to digest. In some cases, however, there is need to eliminate dairy foods completely.

Excessive FODMAPs intake may cause diarrhoea, bloating and flatulence, excessive belching (burping), abdominal pain, unintentional weight loss, symptoms of vitamin and mineral deficiency, like paleness, tingling, tiredness, depression, lactose intolerance, fructose malabsorption, small intestinal bacterial overgrowth (SIBO), celiac disease, inflammatory bowel disease (Crohn's disease, ulcerative colitis), dumping syndrome (rapid gastric emptying). When problematic FODMAPs are identified, they may be strictly avoid for life by certain people, if they want to be symptoms free. Generally do not eat FODMAPs (rich foods) in large amount in one sitting and do not eat them every day. If Low-FODMAP diet does not lessen the abdominal symptoms, dumping syndrome, celiac disease, and inflammatory bowel disease (Crohn's disease) consider tests for food allergies. Low-FODMAP diet should not be introduced by any person with diabetes, hypoglycemia or other metabolic disorders, or in malnutrition, without prior consultation with a doctor.

4.1.2 Lifestyle:

Keep a routine eating and sleeping schedule. Regular but gentle exercise improves digestion and clears stagnation. After eating a brief walk at least 100 meters help to get the digestive tract moving. Avoid bending over back or exercising soon after eating or tiring exercise, avoid tight fitting belts and clothing that restrict movement of the abdomen and avoid working in front of a hot oven and over exposure to sun and heat. Keeping the stomach empty in case feeling more gassy. It is best to release the gas in the form of motion or some other way since the air should not get stuck inside the stomach. Chewing food thoroughly can also reduce gas pain. As it will make the inner side more comfortable for the juices to digest easily and produce less gas. It is better to discontinue consuming carbonated beverages after eating fast foods which create bloating and gas pains. The changes to be observed are do not consume poultry and dairy products such as eggs, milk etc. Avoid using straw while drinking as you may swallow more air while using straws.

Acidity is high during digestion and during Pitta time at night (10 pm to 2 am). While sleeping, stomach acid reiterates more easily due to esophagus lies in horizontal position. consume meals at least three hours before bed to stop digestion. Do not lie down after eating, even during the day, Sleep keeping body ensuring that the head is raised nearly six inches above the feet by fixing six inch height blocks under the legs of the bedstead and lying on the bed in such a position that esophagus stretch out toward the left side of the body. Sleeping on the right side enable to raise the esophagus to evade acid back up.

Keeping the stomach empty in case feeling more gassy. It is best to release the gas in the form of motion or some other way since the air should not get stuck inside the stomach. Chewing food thoroughly can also reduce gas pain. As it will make the inner side more comfortable for the juices to digest easily and produce less gas. It is better to discontinue consuming carbonated beverages after eating fast foods which create bloating and gas pains.

4.1.3 Light Exercise:

In the form of walking or jogging can help food move through the digestion tract more quickly. This will help in making the gas come out earlier, in case it is produced. In addition, exercise helps for better production of juices which aid in digestion. Totally abandon warm Spicy foods, Smoking, unnecessary over eating, huge meals before going to bed, fatty foods, and Alcohol, at late nights.

4.1.4 Stress Management:

For stress related emotions, a head massage with coconut, sandalwood or almond oil can show some relief. Taking warm milk before sleeping can also lessen the impact of emotional stress. Physical stress will overcome by eating cooked apple every day. Also massage is a good therapy. Milk can also decrease the impact of mental stress. Do not eat when emotional. Lions pose, shaking it out, dancing, meditation and breathing exercises can relieve built-up emotions. Twisting yoga poses can also help move emotions and can improve digestion but also push acids upwards. Ashwagandha brings calm and focus to a scattered mind. Massage relieves stress and tension.

V. Conclusion

Gastric problem has become a chronic faced by maximum of people all over the globe due to indigestion as a result even a very healthy person ends up with irritation and improper bowel movement. Those with highly nervous and emotional temperament and those involved in high-stress jobs must be persuaded to adopt entire

lifestyle modification measures if ulcers build up, they ought to be diagnosed soon and treated to prevent further complications like perforations duly going for long term therapy if needed. Esophagitis caused by reflux, often manageable but Proper treatment is needed to prevent relapses. Ulcers due to acidity caused by infection or inflammation is generally treatable with medications, diet or behavioural changes and in some cases, surgery. Modern medical advances have enhanced the understanding of ulcer formation among the people owing to invention and implementation of advanced and more scientific and precise treatment options. Clinical trials observe harmless and effective new ways to detect, and treat these ailments. Researchers also apply clinical trials to look at other sides of care, like developing the quality of life for people suffering with chronic illnesses. Researchers are vigorously studying number of herbal extracts to find an alternative treatment. Added to this regular and intensive propaganda is highly imperative to create awareness through special drives among the rural and urban folk about various abdominal ailments and healthy food habits safe curing procedures. Eventually clinical trials look at safe and effective novel ways to stop, detect or treat disease. Researchers also utilize clinical trials to look at other aspects of care, such as getting better the quality of life for people with chronic illnesses.

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References

- [1]. Chey WD, Wong BC, American College of Gastroenterology guideline on the management of Helicobacter pylori infection, *Am J Gastroenterol*, 102 (8), 2007, 1808-25.
- [2]. Lai KC, Lam SK, Chu KM, Hui WM, Kwok KF, Wong BC, et al, Lansoprazole reduces ulcer relapse after eradication of Helicobacter pylori in non steroidal anti-inflammatory drug users a randomized trial, *Aliment Pharmacol Ther*, 18(8), 2003, 829-36.
- [3]. Koivisto TT, Voutilainen ME, Färkkilä MA, Effect of smoking on gastric histology in Helicobacter pylori-positive gastritis, *Scand J Gastroenterol*, 43(10),2008,1177-83.
- [4]. Sari YS, Can D, Tunali V, Sahin O, Koc O, Bender O, H pylori: Treatment for the patient only or the whole family, *World J Gastroenterol*, 14(8), 2008, 1244-7.
- [5]. Chey WD, Wong BC, Practice Parameters Committee of the American College of Gastroenterology, American College of Gastroenterology guideline on the management of Helicobacter pylori infection, *Am J Gastroenterol*, 102(8), 2007, 1808-1825.
- [6]. Najm, WI, Peptic ulcer disease, Primary care, 38(3), 2011, 383-94.
- [7]. Lai KC, Lam SK, Chu KM, Wong BC, Hui WM, Hu WH, et al, Lansoprazole for the prevention of recurrences of ulcer complications from long-term low-dose aspirin use, *N Engl J Med*, 346(26), 2002, 2033-8.
- [8]. Sung JJ, Tsoi KK, Ma TK, Yung MY, Lau JY, Chiu PW, Causes of mortality in patients with peptic ulcer bleeding: a prospective cohort study of 10,428 cases, *Am J Gastroenterol*, 105(1), 2010, 84-9.
- [9]. Vergara M, Catalán M, Gisbert JP, Calvet X, Meta-analysis: role of Helicobacter pylori eradication in the prevention of peptic ulcer in NSAID users, *Aliment Pharmacol Ther*, 21(12), 2005, 1411-8.
- [10]. Yuan XG, Xie C, Chen J, Xie Y, Zhang KH, Lu NH, Seasonal changes in gastric mucosal factors associated with peptic ulcer bleeding, *Exp Ther Med*, 9(1), 2015,125-130.
- [11]. Cai S, García Rodríguez LA, Massó-González EL, Hernández-Díaz S, Uncomplicated peptic ulcer in the UK: trends from 1997 to 2005, *Aliment Pharmacol Ther*, 30(10), 2009,1039-48.
- [12]. Svanes C, Lie RT, Svanes K, Lie SA, Søreide O, Adverse effects of delayed treatment for perforated peptic ulcer, *Ann Surg*, 220(2), 1994, 168-75.
- [13]. Ramakrishnan K, Salinas RC, Peptic ulcer disease, *Am Fam Physician*, 76(7), 2007, 1005-12.
- [14]. Zullo A, Hassan C, Campo SM, Morini S, Bleeding peptic ulcer in the elderly: risk factors and prevention strategies, *Drugs Aging*, 24(10), 2007,815-28.
- [15]. Elmunzer BJ, Young SD, Inadomi JM, Schoenfeld P, Laine L, Systematic review of the predictors of recurrent hemorrhage after endoscopic hemostatic therapy for bleeding peptic ulcers, *Am J Gastroenterol*, 103(10), 2008, 2625-32.
- [16]. Chiu PW, Ng EK, Cheung FK, Chan FK, Leung WK, Wu JC, et al, Predicting mortality in patients with bleeding peptic ulcers after therapeutic endoscopy, *Clin Gastroenterol Hepatol*, 7(3), 2009, 311-6.
- [17]. Gisbert JP, Calvet X, Feu F, Bory F, Cosme A, Almela P, et al, Eradication of Helicobacter pylori for the prevention of peptic ulcer rebleeding, *Helicobacter*, 12(4), 2007, 279-86.
- [18]. Hsu PI, Lai KH, Liu CP, Esomeprazole with clopidogrel reduces peptic ulcer recurrence, compared with clopidogrel alone, in patients with atherosclerosis, *Gastroenterology*, 140(3), 2011, 791-798.
- [19]. Andriulli A, Loperfido S, Focareta R, Leo P, Fornari F, Garripoli A, et al, High- versus low-dose proton pump inhibitors after endoscopic hemostasis in patients with peptic ulcer bleeding: a multicentre, randomized study, *Am J Gastroenterol*, 103(12), 2008,3011-8.
- [20]. McConnell DB, Baba GC, Deveney CW, Changes in surgical treatment of peptic ulcer disease within a veterans hospital in the 1970s and the 1980s, *Arch Surg*, 124(10), 1989, 1164-7.
- [21]. Bertleff M, Helm JA, Bemelman WA, van der Ham AC, van der Harst E, Oei HI, et al, Randomized clinical trial of laparoscopic versus open repair of the perforated peptic ulcer: The LAMA Trial, *World J Surg*, 33(7), 2009, 1368-1373.
- [22]. Grainek IM, Barkun AN, Bardou M, Management of acute bleeding from a peptic ulcer, *N Engl J Med*, 359(9), 2008, 928-937.
- [23]. Kim JI, Cheung DY, Cho SH, et al, Oral proton pump inhibitors are as effective as endoscopic treatment for bleeding peptic ulcer: a prospective, randomized, controlled trial, *Dig Dis Sci*, 52(12), 2007, 3371-3376.
- [24]. Ramakrishnan K, Salinas RC, Peptic ulcer disease, *Am Fam Physician*, 76(7), 2007, 1005-1012.
- [25]. Take S, Mizuno M, Ishiki K, et al, Baseline gastric mucosal atrophy is a risk factor associated with the development of gastric cancer after Helicobacter pylori eradication therapy in patients with peptic ulcer disease, *J Gastroenterol*, 42(17), 2007, 21-27.
- [26]. Pietrojusti A, Luzzi I, Gomez MJ, Magrini A, Bergamaschi A, Forlini A, et al, Helicobacter pylori duodenal colonization is a strong risk factor for the development of duodenal ulcer, *Aliment Pharmacol Ther*, 21(7), 2005,909-15.

- [27]. Aldoori WH, Giovannucci EL, Stampfer MJ, Rimm EB, Wing AL, Willett WC, A prospective study of alcohol, smoking, caffeine, and the risk of duodenal ulcer in men, *Epidemiology*, 8(4),1997, 420-4.
- [28]. Sonnenberg A, Müller-Lissner SA, Vogel E, Schmid P, Gonvers JJ, Peter P, et al, Predictors of duodenal ulcer healing and relapse, *Gastroenterology*, 81(6), 1981,1061-7.
- [29]. Udd M, Miettinen P, Palmu A, Heikkinen M, Janatuinen E, Pasanen P, et al, Analysis of the risk factors and their combinations in acute gastro duodenal ulcer bleeding: a case-control study, *Scand J Gastroenterol*, 42(12), 2007, 1395-403.
- [30]. Larssen L, Moger T, Bjørneth BA, Lygren I, Kløw NE, Transcatheter arterial embolization in the management of bleeding duodenal ulcers a 5.5-year retrospective study of treatment and outcome, *Scand J Gastroenterol*, 43(2), 2008, 217-22.
- [31]. Luo J, Nordenvall C, Nyren O, et al, The risk of pancreatic cancer in patients with gastric or duodenal ulcer disease, *Int J Cancer*, 120(2), 2007, 368-372.
- [32]. Pietroiusti A, Forlini A, Magrini A, et al, Shift work increases the frequency of duodenal ulcer in H. pylori infected workers, *Occup Environ Med*, 63(11), 2006, 773-775.
- [33]. Donovan AJ, Berne TV, Donovan JA, Perforated duodenal ulcer: an alternative therapeutic plan, *Arch Surg*, 133(11), 1998, 1166-71.
- [34]. Laine L, Curtis SP, Cryer B, Kaur A, Cannon CP, Risk factors for NSAID-associated upper GI clinical events in a long-term prospective study of 34 701 arthritis patients, *Aliment Pharmacol Ther*, 32(10), 2010, 1240-8.
- [35]. Lanza FL, Chan FK, Quigley EM, Practice Parameters Committee of the American College of Gastroenterology, Guidelines for prevention of NSAID-related ulcer complications, *Am J Gastroenterol*, 104(3), 2009, 728-738.
- [36]. Leontiadis GI, Sreedharan A, Dorward S, Barton P, Delaney B, Howden CW, et al, Systematic reviews of the clinical effectiveness and cost-effectiveness of proton pump inhibitors in acute upper gastrointestinal bleeding, *Health Technol Assess*, 11(51), 2007, 1-164.
- [37]. Boparai V, Rajagopalan J, Triadafilopoulos G, Guide to the use of proton pump inhibitors in adult patients, *Drugs*, 68(7), 2008, 925-47.
- [38]. Coté GA, Howden CW, Potential adverse effects of proton pump inhibitors, *Curr Gastroenterol Rep*, 10(3), 2008, 208-14.
- [39]. Laine L, Shah A, Bemanian S, Intragastric pH with oral vs intravenous bolus plus infusion proton-pump inhibitor therapy in patients with bleeding ulcers, *Gastroenterology*, 134(7), 2008,1836-41.
- [40]. Chan FK, Hung LC, Suen BY, Wu JC, Lee KC, Leung VK, et al, Celecoxib versus diclofenac and omeprazole in reducing the risk of recurrent ulcer bleeding in patients with arthritis, *N Engl J Med*, 347(26), 2002, 2104-10.
- [41]. Ford AC, Marwaha A, Lim A, Moayyedi P, What is the prevalence of clinically significant endoscopic findings in subjects with dyspepsia Systematic review and meta-analysis, *Clin Gastroenterol Hepatol*, 8(10), 2010,830-7.
- [42]. Talley NJ, Vakil N, Guidelines for the management of dyspepsia, *Am J Gastroenterol*, 100(10), 2005, 2324-37.
- [43]. Wang HM, Hsu PI, Lo GH, Chen TA, Cheng LC, Chen WC, et al, Comparison of hemostatic efficacy for argon plasma coagulation and distilled water injection in treating high-risk bleeding ulcers, *J Clin Gastroenterol*, 43(10), 2009, 941-5.
- [44]. Travis AC, Wasan SK, Saltzman JR, Model to predict rebleeding following endoscopic therapy for non-variceal upper gastrointestinal hemorrhage, *J Gastroenterol Hepatol*, 23(10), 2008,1505-10.
- [45]. Berezin SH, Bostwick HE, Halata MS, Feerick J, Newman LJ, Medow MS, Gastrointestinal bleeding in children following ingestion of low-dose ibuprofen, *J Pediatr Gastroenterol Nutr*, 44(4), 2007, 506-8.
- [46]. Gulmez SE Lassen AT, Aalykke C, Dall M, Andries A, Andersen BS, et al, Spironolactone use and the risk of upper gastrointestinal bleeding: a population-based case-control study, *Br J Clin Pharmacol*, 66(2), 2008, 294-9.
- [47]. Schubert ML, Peura DA, Control of gastric acid secretion in health and disease. *Gastroenterology*, 134(7), 2008, 1842-60.
- [48]. Barkun A, Bardou M, Marshall JK, Consensus recommendations for managing patients with nonvariceal upper gastrointestinal bleeding, *Ann Intern Med*, 139(10), 2003,843-57.