

## REVIEW ON PEPTIC ULCER AND ITS MANAGNEMT

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### ABSTRACT

We study the various research papers to aware the peptic ulcer disease.so our aim to study about various aspect of this disease. It is the most vulnerable gastrointestinal disease. Normally stomach mucosa maintains a balance between aggressive and protective factor. Peptic ulcers are of two types-acute and chronic ulcers, both are caused by helicobacter pylori and NSAIDs. It is diagnosed with some tests i.e. blood test, stool test, breath test, upper endoscopy.

**Key Words:** Helicobacter pylori, NSAID, peptic ulcer etc..

### INTRODUCTION

Peptic ulcers are open hollows or lesions. It is developed in the mucosa of the stomach or the duodenum i.e. the first section of the small intestine. Normally coating of mucus and other chemicals they shield the stomach and duodenum from digesting themselves. When protective mechanisms are disrupted so powerful digestive acids can erode into the mucosa of these organs and they cause peptic ulcers [1]

Types of ulcer-Peptic ulcer are of following types-

Type-I- gastric ulcers are the most common in several patients and it occurs along the lesser curvature of the stomach i.e. specifically at the site of incisura angularis along the locus minoris resistentiae. They totally affected the fundic & antral mucosa regions of the stomach.

Type-II gastric ulcers occur in the body of the stomach in conjunction with duodenal ulceration. In this type of

ulcer hypersecretion of stomach acid occurs.

Type-III gastric ulcers, this type of ulcer occurs along the pyloric channel but they are also hypersecretion of stomach acid.

Type-IV gastric ulcers, this type of ulcer are located near the top of the stomach lesser curvature at the proximal gastro-esophageal region; they occur usually because of hyposecretion (in which secretion is low) of stomach acid.

Type-V gastric ulcers, this type of ulcer can occur throughout the stomach, but they are mostly related with prolong use of NSAID (Non-steroidal anti-inflammatory drug). [2]

CAUSES-various causes of peptic ulcer are stated below-

1) Helicobacter Pylori - The utmost common cause of peptic ulcers is infection. It is infected by a bacterium i.e. Helicobacter-Pylori. HP, it breaks down the protective mucous barrier and thus exposing the stomach

and duodenum to digestive juices. Some serious conditions occur, so this type of condition is chronic inflammation. It may lead to develop inflammation in duodenum i.e. called duodenitis and inflammation in stomach i.e. called gastritis. [3]

2) NSAIDS - Prolong use of non-steroidal anti-inflammatory drug, they cause peptic ulcer. Mainly it is caused by Aspirin.

3) Tumors— certain rare tumors, they cause peptic ulcer.

4) Viral illnesses,

5) Genetics,

6) Smoking,

6) Alcohol consumption— prolongs and excess amount of alcohol may lead to peptic ulcer.

7) Psychological stress and diet[4]

#### SYMPTOMS-

1) Pain- The main and commonest symptom of peptic ulcer is pain, in this regard various types of pain occur, and Pain occurs in the epi-gastric region, i.e. Between the breastbone and belly-button. The pain may be like as a “hunger pain” or in this continuous burning sensation occurs. Peptic ulcer pain felt during sleep and may be strong enough to awaken the patient in the middle of the night. Duodenal ulcer pain usually occurs 2-5 hours after eating, or worsens when the stomach is empty. Gastric ulcer pain occurs soon after eating or when the stomach is full. [5]

2) Bloating- after eating, patient feels bloating like feeling.

3) Indigestion,

4) Burn heart.

DIAGNOSIS- Helicobacter Pylori infection diagnosed with following method-

1) Blood test

2) Stool test

3) Breath test

4) Upper Endoscopy

1) Blood Test- The diagnosis is initially based on a history, physical exam; however which is determined by threat factors and the typical symptoms, these symptoms conquered by stomach burning sensation. [6]

In blood test we are measured level of antibodies, while it is controversial because in this test if test is positive without confirming inflammation or ulceration through endoscopy, it is adequate to permit suppression therapy through antibiotics.

Additional, an incorrect negative result is possible with a blood test; uncertainty the patient has recently taken some certain medicine that is proton pump inhibitors or antibiotics.

2) Stool Test- The feces examination includes in the stool test to find out the excessive number of HP. [7]

3) Breath tests – In this test the level of urea is checked by the indication of urease activity by HP proliferation. In this test includes examination for HP proliferation through radioactive compounds i.e. Urea - $^{14}C$  &  $CO_2$ . When we use radioactive carbon dioxide, in this test the patient drinks a fluid which is contain radioactive carbon atoms, then which are broken down by H. pylori. After some time, the patient blows into a sealed bag. If infection of HP is present, the breath test sample will contain considerable levels of radioactive carbon dioxide. [8]

4) Upper Endoscopy- We performed the test of upper endoscopy i.e EGD. This test only performed on those patients in whom a peptic ulcer is doubted. We treat patient under light tranquility, the doctor inserts a thin pipe with a small camera at the end (an endoscope) down the esophagus and into the duodenum & stomach. This test permits for optical identification of the mucosal membranes of the gastrointestinal tract and after that, doctor proceeds a sample of tissue to examine for HP. [9]

By direct optical identification, through this identify the location and severity of an ulcer can be described. If this identification test is negative there is no ulcer present, so the EGD can frequently provide an analysis.

If a biopsy sampling is taken, histological investigation and staining are assumed and a culture is developed in order to authorize H. pylori infection.

Additional, direct exposure of urease activity in a biopsy sample is accomplished by a rapid test of urease. [10]

Barium containing chalky liquid is used for X-ray of the upper digestive tract. A chest x-ray can recurrently determine. In case of disease ulcer has perforated the tissue for the reason that air will leak from the inside of the gastrointestinal tract (g.i.t) into the peritoneal cavity below the diaphragm, which is visualized on radiographs as darker areas. In X-Ray report, air in the peritoneal cavity is shown. It is a warning of perforated peptic ulcer [11]

#### PATHOPHYSIOLOGY-

The pathogenesis of gastric and duodenal ulcers is multi-factorial and most probable imitates a combination of pathophysiologic irregularities and genetic & environmental factors. [15]

- Mostly peptic ulcers occur in the presence of pepsin and acid. Some factors are disrupting healing and mucosal defense mechanism like as-NSAIDs and HP.
- Acid is a self-governing factor that contributes to disruption of mucosal integrity. Patients with Gastric Ulcer, they generally have normal or reduced rates of acid ooze. [16]
- Variations in mucosal defense mechanism prompted by NSAIDs or HP.
- Both are the play an important role as co-factors in development of peptic ulcer.

- Mucosal defense & repair mechanisms both are plays an important role in pathophysiology of this disease it may be include bicarbonate & mucus secretion, intrinsic epithelial cell defense, and mucosal blood flow.

- Infection of H. pylori causes gastritis[17]

- Non-selective NSAIDs (including aspirin) cause gastric mucosal damage by

two mechanisms:

a) Systemic inhibition of the cyclo-oxygenase-1 (COX-1) enzyme, which results in decreased synthesis of protective prostaglandins.

b) A direct or topical irritation of the gastric epithelium [18]

**TREATMENT OF PEPTIC ULCER-**  
in modern era, various types of treatment available in the market. Its treatment totally depend upon the its type and causes. According to researcher there is only two causes i.e. NASID use and Helicobacter Pylori. So we are discussed how to treat this type of causes of peptic ulcer. Treatments are following as:-

1.The acid reduces in a two week by the two antibiotics. These two antibiotics are based on dose regimen. The peptic ulcer usually caused by HP. [12]

2. We select other recommended treatment may include the following:

- We can use Antacids can be used during ulcer treatment, but should not be used within 1 hour before or 2 hours after taking other ulcer medication .

- Avoid Stop smoking and NSAIDS if possible.

- Take Small amounts of alcohol safe stress. the diet plays a significant role in developing ulcers,

- For a general health stress management is suitable.

- For an alternative medication is necessary for continuing an NSAID.

- The spicy and acidic foods cause the peptic ulcer.so avoids these foods it may decrease symptoms. [13]

- During peptic ulcer Alcohol must be avoided.

- These types of foods & beverages (coffee, tea, chocolate) can stimulate secretions of acid; after that secretion is higher ulcer pain was worsening. [14]

Homeopathies remedies for treating ulcer:-

These are the some remedies for peptic ulcer.

S.N	Homeopathic medicine	uses
1.	Argentums Noricum	Gastric pain, bloating, belching
2.	Arsenical alum	Ulcer with penetrating burning pain & nausea

3.	Lycopodium	Bloating after eating
4.	Kali bichromicum	Shooting or burning abdominal pain(i.e. worsen in the night)
5.	Nitric acid	Sharp and shooting pain(i.e. worsen in the night)
6.	Nux- vomica	Heart burn and indigestion
7.	Phosphorus	Burning stomach pain (worsen at night)
8.	Pulsatilla	For symptoms that change sharply

Additional accepted therapies-

We used traditionally some type of techniques and manipulations. We have to use some adjustments like as may take pressure off spinal nerves and after that we restore function of normal organs. [28]

The Curative Treatment of Gastric Ulcers-We use Triple therapies, following as-

- PPI or H<sub>2</sub> blockers, which is help in reducing secretion of gastric acid.
- Antibiotics.
- Another antibiotic combined with bismuth salicylate.

Above mentioned triple therapy or antibiotics are not prescribed to a patient, who is suffering with gastric ulcers which are caused by NSAIDs; reasonably, their pain medications are reduced, rejected or changed, and acid-reducing medications may be suggested for a few months to permit the ulceration to heal. [29]

Inhibitors of Proton-Pump -

They are potent inhibitors of acid secretion. PPI worked as an irreversible block the potassium ATPase energy & Hydrogen, which is called gastric proton pump of the stomach's parietal cells. This class of drug has given an

inactive form, this type of drug active in acidic environment. [30]

ADRs of PPI-

- Diarrohea
- Abdominal pain
- Nausea
- Constipation
- Dizziness
- Fatigue
- Flatulence

Some proton pump inhibitor are used in marketed preparation-

Some marketed preparation used in peptic ulcer.

S. N	DRUG	BRAND NAME
1.	Lansoprazole	Zoton, Inhibitol, Prevacid, Moonlit, Lupizole, Levant
2.	Omeprazole	Omez, Lomac,

		Omepral, Zegrid, Losec, Prilosec
3.	Dex- Lansoprazole	Dexilant, Kapide x
4.	Pantaprazole	Somac, Pantozol, Zentro, Controloc, Pontodoc, Protonix, Zurcal
5.	Esomeprazole	Esotrex, Nexium
6.	Rabeprazole	Rabecid, Nzole- D, Rabeloc, Aciphex, Zechin, Pariet

The huge majority of these medicines are known as derivatives of benzimidazole, but according to research we have found new derivatives i.e. imidazopyridine derivatives, it may be a more effective means of treatment. [31]

#### Blockers of Histamine-

This type of blockers used in peptic ulcer. It is also known as H<sub>2</sub> –receptor antagonists or histamine blockers, which are competitive antagonists of histamine in the stomach. These blockers suppress the secretion of HCl by parietal cells. This secretion is regulated by some mechanism i.e. histamine released by enterochromaffin cells, these cells are situated in the stomach, which is totally blocked from binding on parietal cell H<sub>2</sub> receptor, which stimulates secretion of

acid and other constituents that stimulate acid secretion, namely acetylcholine and gastrin. [32]

These blockers are quietly commonly used for the management of dyspepsia. Some drugs are used in the treatment of peptic ulcer and are categorized as H<sub>2</sub> blockers. Some drugs are available OTC like ranitidine, cimetidine, nizatidine, famotidine.

Histamine antagonists are generally well tolerated but there is some exception of cimetidine (Tagamet), which is non-tolerable.

Some researchers discovered a drug, which interferes with the body mechanism, so which interferes in elimination & metabolism.

In case of disease, we are using cimetidine. The resultant is an increase in the risk of toxicity of the drug. It has been linked with some adverse drug reactions, namely hypotension, gynecomastia, common in males, impotence, and loss of libido.

Ranitidine, its brand name is Zantac, this drug has better tolerance power. It has a longer action. This drug is more potent than cimetidine.

Researchers have found some side effects. Histamine blockers and PPI have some side effects. [33]

#### Antibiotics –

We use some antibiotics in the management of peptic ulcer. We prescribed antibiotics for two weeks. Some side effects occur: Anaphylaxis, Upset Stomach, Diarrhoea, Disruption of the intestinal flora and fauna,

Nausea, Sensitivity of sun, Pathogenic overgrowth of bacteria & yeast i.e. clostridium & candida albicans. [34]

We use Antibiotics in the treatment of peptic ulcer. We recommended this type of therapy because of its action to kill bacteria. In this therapy we recommended more than one type is frequently recommended to be taken at the same time due to resistance and adaptability. We use some medication in this diseases following as-

- Clarithromycin (Biaxin)
- Furazolidone (Foregone)
- Tetracycline
- Amoxicillin
- Metronidazole (Flaggy)

#### Cytoprotective Agents-

We treat peptic ulcer through cytoprotective agents. These agent works as a protective mechanism, they protect the stomach lining and small intestine. We use some medication used as-

- Misoprostol (cystic)
- Sucralfate (Carafate)
- Bismuth salicylate (Pepto – bismol)

We use bismuth compound in management of peptic ulcer, so these compounds work as a directly kill the H. Pylori. [35]

Salicylate compounds have some side effects i.e. mainly cause serious bleeding but this problem occurs when we used alone with bleeding ulcers patients.

We use bismuth therapy especially involves in combination of several drugs like as- [Bismuth salicylate with PPI +Tetracycline + Metronidazole] for 14 days.

Adverse drug reactions of bismuth salicylate are rarely considered but some are considered following as-

- darkening of the stools
- darkening of the tongue
- Metallic taste in the mouth[36]

#### Antacids-

In modern techniques of medication, we use over the counter drugs like antacids these drugs neutralized the stomach acid so after that relief of stomach burning sensation, indigestion & burning heart but antacids are not used in the treatment of gastric ulcer because they do not kill the bacteria or do not block the stomach acid production. [37]

We used commonly some antacids like-

- Magnesium hydroxide (milk of magnesia)
- Aluminium hydroxide (AlternaGel, Amphogel)

- Aluminium hydroxide combination with magnesium hydroxide (Mylanta, Maalox)
- Sodium bicarbonate (Alka - seltzer)
- Calcium carbonate (Tum, Titalac, Rolaid)

We recommended to take antacids at least 1 hr. before.

Adverse drug reactions of antacids, it may include– Diarrhoea and constipation. [38]

#### PREVENTION-

Prevention of gastric ulcers often involves -

- In case of gastric ulcer disease we should reduce uses of NSAID.
- We select altered treatments.
- We select alternative approaches to relieve pain.
- In Our Daily life some factors are responsible for decreasing the possibilities of peptic ulcers [19]
- We should include in our diet those foods rich in fiber, mainly fruits and vegetables.
- Flavonoid containing foods such as apple, cranberry, onion, garlic and tea may inhibit the growth of H. pylori. Some foods contain flavonoids such as garlic, apple, cranberries, tea and garlic. so we taken these foods it may be protect and inhibit the H.P.
- In our daily life we should avoid refined foods like as pasta, sugar & white bread.

- We should add in our diet less red meat and more cold-water fish.

- We use mainly healthy oils.

- During the disease we should reduce the consumption of coffee, alcohol and soda pop [20]

Leaving smoking-

It is also a vital approach for the reason that cigarette ingredients block with the defensive lining of the stomach. Cigarette Smoking, it also escalates acid production in stomach [21]

Psychological management-

Anxiety and stress both are play a vital role in ulcer prevention. It also symptoms of gastric ulcer [22]

Techniques for Relaxation-

Some techniques we are using for relaxation like as yoga, tai chi, meditation. These techniques we can use for reduce stress and peptic ulcer symptomatology both.

Homemade or nutritional or Natural Remedies-

These remedies we are using for treating or reducing the symptoms of ulcer. According to various researcher antioxidants and Flavonoids are plays an important role in medicinal or therapeutic values. They also inhibit the H.P growth [23]

Probiotic complements-

Lactobacillus acidophilus, this probiotics food supplements, it may be protecting peptic ulcer, and however it may help to maintain a balance between



digestive systems. These type of supplements, it may help suppress HP infection and reduce side effect[24]

#### Vitamin C–

Vit. C supplements used with the dose of 500to 1000mg and tds in a day. Vit.C help to detect the proliferation of HP and another work is treating the bleeding in gastric ulcer, which is caused by Aspirin[25]

#### Herbs-

Some herbs are used in this disease, so these herbs having medicinal properties. However these herbs proves, they are show beneficiary effect in gastric ulcer.so we can treat ulcer with these Herbs. We can use fresh leaves or dried extracts of herbs or tinctures. [26] Some herbs are namely-

- Black pepper
- Curcumin
- Menthapiperita
- Glycerrhizaglabra
- Green tea
- Pistaciatenticus

Above mentioned all herbs, which can be used to inhibit the growth of HP and secondly they protect stomach against NSAIDs. [27]

#### Conclusion

Iwas studied lots of research papers for collecting the each and every information of about this disease. Finally we collect lots of information and knowledge about my disease, how

to cure?, its introduction , types ,causes ,how to spread ? itis very vulnerable disease.so we have to prevented by lots of therapies just like as- leaving smoking, stop NSAIDs, used herbal remedies etc.We treat this type of disease our medicinal system i.e. homeopathic remedies and allopathic. In present we have to cure mostly disease through themedicinal system.

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