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Review Article

**A REVIEW ON SOME HOME REMEDIES ACT AS
GASRTOPROTECTIVE ACTIVITY****Karthek Cheggu***, Innaiah Nallaboina, Divya Billi, Ajay Babu Palaparathi
MAM College of Pharmacy, Kesanupalli, Narasaraopet, Guntur (Dt.) Andhra Pradesh**Abstract:**

Ulcer is a common gastrointestinal disorder which is seen among many people. It is basically an inflamed break in the skin or the mucus membrane lining the alimentary tract. Peptic ulcers include Gastric ulcers that occur on the inside of the stomach and duodenal ulcers that occur on the inside of the upper portion of your small intestine (duodenum). The most common causes of peptic ulcers are infection with the bacterium Helicobacter pylori (H. pylori) and long-term use of aspirin and certain other painkillers, such as ibuprofen and naproxen sodium. The most common peptic ulcer symptom is burning and stomach pain. Peptic ulcer disease (PUD) is a main source of morbidity and mortality in worldwide. Non-steroidal anti-inflammatory drugs (NSAIDs) and Helicobacter pylori are mainly responsible for peptic ulcer disease. Histamine receptor blockers and proton pump inhibitors are most prominent therapies in the treatment of peptic ulcer. However, severe adverse effects of NSAIDs have been reported. Therefore, focus is now diverted towards herbal formulations of medicinal plants for the treatment of ulcer. Plants contain different phytoconstituents which are responsible for increasing defensive mechanisms of body against peptic ulcer. The current review focuses on the commonly used gastroprotective plants as antiulcer agents.

Keywords: *Ulcer, Gastroprotective, NSAIDs***Corresponding author:**

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INTRODUCTION:

Ulcers are an open sore of the skin or mucous membrane characterized by sloughing of inflamed dead tissue [1]. Ulcers are lesions on the surface of the skin or a mucous membrane characterized by a superficial loss of tissue. Ulcers are most common on the skin of the lower extremities and in the gastrointestinal tract, although they may be encountered at almost any site. There are many types of ulcer such as mouth ulcer, esophagus ulcer, peptic ulcer, and genital ulcer. Of these peptic ulcer is seen among many people. The peptic ulcers are erosion of lining of stomach or the duodenum [2]. The two most common types of peptic ulcer are called “gastric ulcer” and “duodenal ulcer.” The name refers to the site of ulceration. A person may have both gastric and duodenal ulcers at the same time. Gastric ulcers are located in the stomach, characterized by pain; ulcers are common in older age group. Eating may increase pain rather than relieve pain. Other symptoms may include nausea, vomiting, and weight loss. Although patients with gastric ulcers have normal or diminished acid production, yet ulcers may occur even in complete absence of acid [3]. Duodenal ulcers are found at the beginning of small intestine and are characterized by severe pain with burning sensation in upper abdomen that awakens patients from sleep. Generally, pain occurs when the stomach is empty and relieves after eating. A duodenal ulcer is more common in younger individuals and predominantly affects males. In the duodenum, ulcers may appear on both the anterior and posterior walls [4]. In some cases, peptic ulcer can be life threatening with symptoms like bloody stool, severe abdominal pain, and cramps along with vomiting blood [5].

In this modern era also 75–80% of the world populations still use herbal medicine mainly in developing countries, for primary health care because of better cultural acceptability, better compatibility with the human body, and lesser side effects [6]. Histological studies revealed that these medicinal plants did not show any acute toxicity. Preliminary photochemical screening of this medicinal plant identified the presence of important secondary metabolites like flavonoids and tannins which are the active principles of antiulcer activity [7].

Present study was conducted to review medicinal plants considered as gastroprotective and healing agents on ulcers in ayurvedic resources and beside that to gather evidence for their effectiveness and biological mechanisms in modern investigation.

PATHOPHYSIOLOGY OF ULCER:

Hydrochloric acid is secreted by gastric parietal cells due to stimulation of H⁺ K⁺ ATPase (proton pump), Histamine (through H₂ receptors), acetylcholine (through M₁ and M₃ receptors) and gastrin (through Cholecystokinin receptors) are important stimulators of proton pump. ACh and gastrin exert their action directly as well as through release of histamine. Antral G-cells produce gastrin on stimulation by dietary peptides. Gastrin mainly stimulates release of histamine from entero-chromaffin like (ECL) cell and weakly stimulates proton pump itself. Parietal cells secrete H⁺ in the lumen through H⁺ - K⁺ - ATPase (proton pump). Vagus nerve (via ACh) help in increasing acid by three mechanisms:

- Direct stimulation of proton pump
- Stimulation of ECL-cells to release histamine
- Direct release of gastrin (by action of G-cells) and inhibition of somatostatin by action on D-cells (later inhibits release of gastrin).

The main strategies employed for the treatment of peptic ulcer disease and gastritis are:

- Neutralize gastric acid by antacids.
- Decrease secretion of acid in stomach.
- Increase protective factors like mucus and bicarbonate.
- Protect the ulcer by forming a layer over it.
- Stimulate the healing of ulcer.
- Kill *H. pylori* associated with peptic ulcer disease.

TREATMENT:**Drugs Used in Acid-Peptic Diseases**

1. Antacids—Antacids are weak bases that neutralize stomach acid by reacting with protons in the lumen of the gut and may also stimulate the protective functions of the gastric mucosa. Popular antacids include magnesium hydroxide (Mg[OH]₂) and aluminum hydroxide (Al[OH]₃). Magnesium hydroxide has a strong laxative effect, whereas aluminum hydroxide has a constipating action.

2. H₂-receptor antagonists—Cimetidine and other H₂ antagonists (ranitidine, famotidine, and nizatidine) inhibit stomach acid production, especially at night. They are effective in the treatment of GERD (Gastro Esophageal reflux disease, peptic ulcer disease, and non ulcer dyspepsia) and in the prevention of stress-related gastritis in seriously ill patients.

3. Proton pump inhibitors—Omeprazole and other proton pump inhibitors (esomeprazole, lansoprazole, pantoprazole, and rabeprazole). There they undergo conversion to compounds that irreversibly inactivate the parietal cell H⁺/K⁺ ATPase, the transporter that is primarily responsible for producing stomach acid. Proton pump inhibitors are more effective than H₂ antagonists for GERD and peptic ulcer and equally effective in the treatment of non ulcer dyspepsia and the prevention of stress-related mucosal bleeding. They are also useful in the treatment of Zollinger-Ellison syndrome. Adverse effects of proton pump inhibitors occur infrequently and include diarrhea, abdominal pain, and headache. Chronic treatment with proton pump inhibitors may result in hypergastrinemia. Patients taking proton pump inhibitors may have a small increase in the risk of respiratory and enteric infections.

4. Sucralfate—An aluminum sucrose sulfate, sucralfate is a small, poorly soluble molecule that polymerizes in the acid environment of the stomach. The polymer binds to injured tissue and forms a protective coating over ulcer beds. Sucralfate accelerates the healing of peptic ulcers and reduces the recurrence rate. Unfortunately, sucralfate must be taken 4 times daily. Sucralfate is too insoluble to have significant systemic effects when taken by the oral route; toxicity is very low.

5. Misoprostol—An analog of PGE₁ (Prostaglandin E₁), misoprostol increases mucosal protection and inhibits acid secretion. It is effective in reducing the risk of ulcers in users of nonsteroidal anti-inflammatory drugs (NSAIDs) but is not widely used because of the need for multiple daily dosing and poorly tolerated adverse effects (gastrointestinal upset and diarrhea).

6. Colloidal bismuth—Bismuth has multiple actions, including formation of a protective coating on ulcerated tissue, stimulation of mucosal protective mechanisms, direct antimicrobial effects, and sequestration of enterotoxins. Bismuth subsalicylate, a nonprescription formulation of bismuth and salicylate, reduces stool frequency and liquidity in infectious diarrhea. Bismuth causes black stools.

7. Antibiotics—Chronic infection with *H. pylori* is present in most patients with recurrent non-NSAID-induced peptic ulcers. Eradication of this organism greatly reduces the rate of recurrence of ulcer in these patients. One regimen of choice consists of a proton pump inhibitor plus a course of clarithromycin and

amoxicillin (or metronidazole in patients with penicillin allergy).

SOME OF HOME REMEDIES AS GASTRO PROTECTIVE ACTIVITY BASED ON PREVIOUS STUDIES:

- Cabbage juice contains compounds that may help prevent and heal stomach ulcers. Cabbage is also rich in vitamin C, which appears to have similar protective properties.
- Licorice may prevent and fight ulcers in some individuals.
- Regular consumption of Honey may help prevent ulcers, especially those caused by *H. pylori* infections.
- Garlic has antimicrobial and antibacterial properties that may help prevent ulcers and heal them quicker.
- Tulasi as Gastroprotective potential of aqueous and Ethanolic leaf extract of *Ocimum sanctum* has been investigated against pylorus ligation-, and stress-induced ulcerative damage in rats. There was a significant reduction in ulcer index, gastric volume, total acidity, ulcer scores and total acid output along with significant increase in pH of gastric mucosa. Aqueous and Ethanolic leaf extract of *O. sanctum* showed maximum gastro protection.
- The aqueous extract of ginger was able to protect the gastric mucosa from stress-induced mucosal lesions and inhibits gastric acid secretion probably by blocking H⁺, K⁺-ATPase action, inhibiting growth of *H. pylori* and offering anti-oxidant protection against oxidative stress-induced gastric damage
- A dietary natural drug (curcumin) could be used to protector treat the inflammation induced by the ulcer effectors. The biological effect of curcumin to combat these induced pathological disorders is due to its anti-inflammatory and antioxidant activities. Therefore, this review confirmed curcumin as an antiulcer potent agent.
- Mastic is a traditional anti-ulcer remedy that may help reduce symptoms and speed up recovery. It's considered safe, but its effects can vary from one person to another.
- Contrary to popular belief, regular consumption of chili peppers may help protect against ulcers and perhaps even enhance their healing.
- Aloe vera may be an easy, well-tolerated remedy against stomach ulcers. However, more research in humans is needed.
- Probiotics may help prevent and fight ulcers. They may also enhance the efficiency of anti-ulcer medications and reduce their side effects.

- For stomach ulcer treatment, both ripe and unripe bananas are very effective. There are certain antibacterial compounds in bananas that inhibit the growth of ulcer-causing *H. pylori*. Bananas also protect the system by wiping out the acidity of gastric juices. This helps reduce inflammation and also strengthens the stomach lining.
- Coconut is very good for people suffering from stomach ulcers because of its antibacterial qualities. It kills the bacteria that cause ulcers. Moreover, coconut milk and coconut water have anti-ulcer properties.
- Fenugreek is known for its powerful healing properties and health benefits. You can use it to treat stomach ulcers also. Being rich in a mucilaginous compound, fenugreek protects the stomach's lining by coating it like mucus, thereby facilitating the process of healing[16].

CONCLUSION:

From this study we can conclude that studies with plant sources can result in novel and effective pattern of treatment. Current stalemates of modern medicine in the management of various ailments incline research tendencies to traditional medicine. In this respect, traditional medicine has introduced good protocols for treatment of various gastrointestinal disorders. All of the remedies presented here had adequate evidence from traditional or scientific source for their efficacy in management of ulcers. In the present study the plants are contain high rich constituents are like tannins, flavonoids and Antioxidants etc. which are possesses significant antiulcer activity.

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