CODEN [USA]: IAJPBB ISSN : 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES
SJIF Impact Factor: 7.187

Available online at: http://www.iajps.com Review Article

REVIEW ON HERBAL ORAL ANTI-ULCER SYRUP

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Abstract:

Peptic ulcer disease remains a prevalent gastrointestinal disorder often associated with gastric acid imbalance, oxidative stress, Helicobacter pylori infection, and mucosal damage. Conventional synthetic anti-ulcer drugs provide symptomatic relief but may lead to adverse effects with long-term use. Increasing interest in herbal medicine has encouraged the development of oral anti-ulcer syrups prepared from plant-based ingredients with proven gastro protective potential. This review summarizes the therapeutic roles of selected medicinal plants such as Glycyrrhiza glabra, Aloe vera, Zingiber officinal, Ocimum sanctum, and Mentha piperita, which are commonly incorporated in herbal anti-ulcer formulations. Their phytoconstituents—flavonoids, tannins, saponins, mucilage, and essential oils—exhibit anti-secretory, antioxidant, anti-inflammatory, and mucosal-protective activities. The review also highlights the mechanisms of action, safety profile, dosage considerations, and formulation advantages of herbal syrups as a patient-friendly dosage form. Overall, herbal oral anti-ulcer syrups represent a promising complementary approach for managing gastric ulcers with fewer side effects, supporting their potential use in future phytopharmaceutical development.

KEYWORDS: *Herbal, Oral, Anti-Ulcer Syrup, Glycyrrhiza Glabra, Anti-Ulcer, Sugar etc.*

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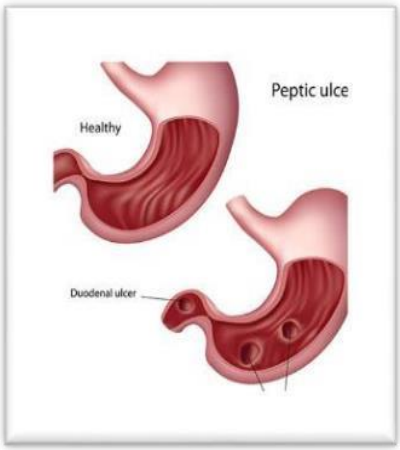
Please cite this article in press ***Chaitali Sanjiv Gawai*** *et al.,* ***Review On Herbal Oral Anti-Ulcer Syrup****, Indo Am. J. P. Sci, 2025; 12(11).*

INTRODUCTION:

An ulcer is a discontinuity or break in a bodily membrane that impedes normal function of the affected organ. According to Robbins's pathology, "ulcer is the breach of the continuity of skin, epithelium or mucous membrane caused by sloughing out of inflamed necrotic tissue Peptic ulcers are open sores on the inner lining of the stomach and the upper part of the small intestine. The most common symptom of a peptic ulcer is stomach pain.

Peptic ulcers are open sores on the inner lining of the stomach and the upper part of the small intestine. The most common symptom of a peptic ulcer is stomach pain. Peptic ulcer disease (PUD) is characterized by discontinuation in the inner lining of the gastrointestinal (GI) tract because of gastric acid secretion or pepsin. It extends into the muscularis propria layer of the gastric epithelium. It usually occurs in the stomach and proximal duodenum. It may involve the lower esophagus, distal duodenum, or jejunum. Epigastric pain usually occurs within 15-30 minutes following a meal in patients with a gastric ulcer; on the other hand, the pain with a duodenal ulcer tends to occur 2-3 hours after a meal. Today, testing for Helicobacter pylori is recommended in all patients with peptic ulcer disease. Endoscopy may be required in some patients to confirm the diagnosis, especially in those patients with sinister symptoms.

PEPTIC ULCERS



- **Location:** Usually found in the stomach (gastric ulcers) or the upper part of the small intestine (duodenal ulcers)
- **Causes:** Most often caused by infection with the bacterium Helicobacter pylori (H.
- pylori) or the long-term use of nonsteroidal anti-inflammatory drugs (NSAIDs).
- **Symptoms:** Burning stomach pain, bloating, nausea, and in severe cases, bleeding or perforation of the ulcer.

ORAL ULCER (MOUTH ULCER)



- **Location:** Found in the mouth, including on the inner cheeks, lips, tongue, and gums.
- **Causes:** Multiple factors can contribute, such as minor injury, stress, certain Medical conditions, or autoimmune disorders.
- **Symptoms:** Pain or discomfort, especially while eating or drinking, and sometimes accompanied by redness and inflammation.
- Ulcers can vary in severity, and complications may arise if left untreated. Diagnosis often involves endoscopy, imaging studies, or other laboratory tests. Treatment

The history of ulcers, particularly peptic ulcers, has evolved over time with changing perspectives on their causes and treatments. Here's a brief overview: Ancient Times:

-In ancient times, people attributed ulcers to various factors, including dietary habits, stress, and supernatural causes.

-Ancient Greek physicians like Hippocrates described symptoms similar to peptic ulcers and suggested dietary and lifestyle modifications for treatment.

19th Century:
-The prevailing belief during this period was that excessive stomach acid, often caused by stress, led to the development of ulcers.

- Surgical interventions were attempted, but they were often crude and risky.

Early 20th Century:
-In the early 20th century, the focus shifted to the role of bacteria in ulcer development. However, this idea faced skepticism and criticism for several decades.

-Surgeon Barry Marshall and pathologist Robin Warren, in the 1980s, rekindled interest in the bacterial theory by identifying Helicobacter pylori as a significant factor in peptic ulcer disease.

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Late 20th Century:
-The discovery of H. pylori challenged the prevailing notion that excess stomach acid alone caused ulcers. Marshall and Warren's work ultimately led to a paradigm shift in understanding the etiology of peptic ulcers.

-Antibiotic treatments to eradicate H. pylori became a key component in managing and curing peptic ulcers, reducing the reliance on acid-suppressing medications.

21st Century:
-Advances in diagnostic tools, such as endoscopy and imaging techniques, have improved the accuracy of ulcer diagnosis.

-Treatment strategies continue to evolve with a more personalized approach, taking into account factors such as H. pylori infection, NSAID use, and lifestyle.

-The history of ulcers illustrates how medical understanding and treatments have progressed over time. The identification of H. pylori and its role in ulcer formation has been a pivotal development, leading to more effective and targeted therapeutic approaches. Today, a combination of medications, lifestyle changes, and, when applicable, H. pylori eradication strategies are employed.

SYRUPS
A syrup is a pharmaceutical preparation that consists of a concentrated, viscous solution of sugar (usually sucrose) in water, often containing medicinal substances, flavoring agents, and preservatives.Herbal formulation means a dosage from herbs to consisting of provide specific one nutritional cosmeticbenefits and meant for Used to diagnose beat of human brings or animals. Tinctures cvential oils, expressed juice are the different herbal formulations Herbal Syrup solution of syrup is a concentrated. of sugar "(sucrose in water) The sucrose at the Contain water of 85%.

Classification -
Simple syrups:-
The syrup is a saturated or concentrated, viscous aqueous solution of sucrose/sugar substitute with or without flavor/medicinal substances in purified water. Simple syrup contain 85% w/v (65% w/w); specific gravity 1.313 (USP) or 66.7% w/w as per Indian Pharmacopeia/BP.

Medicated Syrup:-
Medicated syrup is amedicinal or therapeutic syrup that contains active ingredients.

Flavored syrups:-
Syrup flavored with flavorings, but not medicinal substances Flavored syrups typically consist of a simple syrup, that is sugar (fully mixed with water while heated), with naturally occurring or artificial (synthesized) flavorings also dissolved in them.

REVIEW LITERATURE
The occurrence of peptic ulcer in infancy was described over a hundred years ago by Cruveilhier in his Anatomie Pathologique du Corps Humain.

He records the presence of multiple gastric ulcers in three infants at the respective ages of one, two, and weeks. The lesions are clearly illustrated by drawings. Since then reports on oral ulcers in children have appeared in ever-increasing numbers in the literature (chiefly continental and American), Theile (1919a) having collected 248 cases under the age of sixteen. while Bird, Limper and Mayer review 243 cases up to the age of fifteen.

- In this country, however, according to Paterson, only three British cases were published prior to 1922.
- In view of this dearth a series of such cases is here reported in order to draw attention to the condition. the first essential for the diagnosis of oral ulceration in childhood is recognition of the fact that it actually does occur, even in the neonatal period.
- Theile, who saw it from the first day of life onwards, considers that it almost always arises after birth, and this is confirmed by Ballantyne (1902) in his Textbook of Antenatal Pathology.

Some authors, however, believe that the lesion may be present at birth.

- According to Ladd and Gross it has been described in stillborn infants. It is well known that acute oral ulcers can develop very quickly, having been seen as early as nineteen hours after a severe burn (Hurst & Stewart. 1929)

DRUGS AND EXCIPIENT PROFILE

Sr. No.	Drug	Synonym	Biological Source	Family	Uses
1.	Turmeric 	Haldi	Obtained from dried rhizome	Zingiberaceae	Reduce Pain and inflammation
2.	 Clove buds	Caryophyllum	Obtained from dried flower buds of eugenia caryophyllus	Myrtaceae	Antibacterial
3.	Guava leaves 	Lemon, guava, apple guava	Obtained from shrub or small tree of Psidium guajava	Myrtaceae	Antibacterial
4.	Liquorice 	Radix glycyrrhizae, Sweet glycyrrhizae	Consists of subterranean peeled &unpeeled stolon,roots& subterranean stem of glycyrrhizae glabra. Linn	Leguminosae	Antiinflammatory
5.	Tulsi 	Holybasil	Consists of fresh &dried leaves of Ocimum sanctum	Lamiaceae	Antibacterial Anti inflammatory
6	Pigeon pea leaves	Red gram, tur, Arhar	Obtained from legume crop of Cajanus cajan	Fabaceae	Antiinflammatory
7	Mint	Pudina	Obtained by steam steam distillation of flowering parts of plant	Labiatae Lamiaceae	Reduces inflammation

METHODOLOGY:

Firstly, we need to perform the decoction of Guava leaves, Pigeon pea leaves, Liquorice roots, turmeric, tulsi, and mint leaves which are previously dried.

- Now for decoction we have to take powerdered drug and water and placed in water bath until the one fourth of the water remain in the beaker. Drug exctracts are prepared.
- Add the clove tincture in the drug extract.
- After that add simple syrup in the drug extract.
- Add sodium benzoate as a preservative and raspberry for the flavor. Alternatives can be used.
- To stabilize the pH of the formulation citric acid can be used.
- Add glycerin in the syrup for the thickening of the formulation.
- Make the final volume by adding distilled water.
- Filter the final herbal formulation through a fine filter paper or sterile muslin cloth.
- Store the herbal syrup in the amber colour bottle.

PREPARATION OF MAIN EXTRACTS

Place the all herbal leaves in the stainless steel pot. Add water. Heat to gentle boiling and decoct it with occasional stirring. Allow it to cool and filter through muslin cloth.

PREPARATION OF CLOVE TINCTURE

Macerate the clove buds in ethanol. Filter it and add only the clear portion to the syrup so ethanol content remains low.

PREPARATION OF SIMPLE SYRUP

Add the 66.7gm of sucrose in 100ml water and gently heat it.

PREPARATION OF PRESERVATIVE

Dissolve the Sodium Benzoate in little water.

EVALUATION PARAMETERS

Physicochemical parameters

The herbal syrup was evaluated for various physicochemical parameters such as physical appearance (colour, odour, taste, pH).

Colour Examination

Five ml syrup was taken into watch glasses and placed against white back ground in white tube light. It was visually assessed for its colour.

Odour examination

Two ml of syrup was smelled individually. To minimize the impact of the previous smelling.

Taste examination

A pinch of syrup was taken and examined for its taste on taste buds of the tongue.

Determination of pH

Placed an accurately measured amount 10 ml of the syrup in a 100 ml volumetric flask and made up the volume up to 100 ml with distilled water. All through approximately 10 minutes, the solution was sonicated. Using digital pH metre, pH was measured.

Determination of Density

To take clean specific gravity bottle and Rinse the bottle at least two to three times with distilled water. If required, rinse the bottle with an organic solvent like acetone and dry. Take the capillary tube stopper's weight with an empty, dry bottle (w1). Fill the bottle with distilled water and place the stopper, wipe out excess liquid from outside the tube using tissue paper. Weight bottle with distilled water on analytical balance (w2). Fill the bottle with unknown liquid and place the stopper, wipe out excess liquid from outside the tube using tissue paper. Weight bottle with unknown liquid on analytical balance (w3).

Calculate the density of unknown liquid by using following formula, Density of unknown liquid (syrup)= Weight of a unknown liquid/ Weight of distilled water

Determination of Specific Gravity

To take clean specific gravity bottle and Rinse the bottle at least two to three times with distilled water. If required, rinse the bottle with an organic solvent like acetone and drv. Take weight of empty dry bottle with capillary tube stopper (w1). Fill the bottle with distilled water and place stopper; wipe out excess liquid from side tube using tissue paper (w2). Weight bottle with stopper and water on analytical balance (w2). Repeat the procedure for liquid under test by replacing the water after emptying and drying as mentioned in step 4 to 6. Weight bottle with stopper and liquid under test on analytical balance (w3). Calculate the specific gravity of unknown liquid by using following formula,

Specific gravity of unknown liquid (syrup) – Weight of unknown liquid/ Weight of distilled water

Determination of Viscosity

To take clean ostwald viscometer and rinse the bottle at least two to three times with distilled water. If necessary, rinse the bottle with an acetone-like organic solvent before drying. Install the viscometer on a suitable stand in the vertical position. Load the dry viscometer using water to the mark G. The number of seconds it takes for water to flow from mark A to mark B. To get an accurate reading, repeat step 3 at least three times. Determine the time it takes for liquid to flow to mark B after rinsing the viscometer with test liquid and filling it to mark A. Liquid density

determination in compliance with the density investigation.

DISSCUSSION:

Oral anti-ulcer herbal syrup is a polyherbal liquid formulation designed to prevent and treat gastric ulcers through a combination of anti-inflammatory, antioxidant, mucoprotective, and antimicrobial actions. The formulation typically incorporates herbs such as turmeric, liquorice, guava leaves, tulsi, mint, clove buds, and pigeon pea leaves, which act through multiple mechanisms that collectively protect gastric mucosa and enhance healing. The herbal oral anti-ulcer syrup possesses a range of pharmacological, physicochemical, and therapeutic properties that contribute to its effectiveness in the prevention and management of gastric ulcers. These properties arise from the synergistic actions of herbs which are used in the Formulation of syrup.

This herbal syrup is natural, safe and has anti-ulcer properties and helps to cure the oral anti-ulcer. The preparation of herbal syrup will evaluated for colour, odour, taste, viscosity, and pH determination.

CONCLUSION:

Anti-ulcer syrup is potentially effective or complement to conventional treatments, often exhibiting fewer side effects.

- It reduces acidity, enhances mucosal protection, shows anti-inflammatory and antioxidant effects.
- This syrup has antibacterial activity. It is safe for use, cost effective and natural approach to managing ulcers.
- Herbal anti-ulcer syrups are promising. They are relatively safe in studied doses.
- They are best used as complementary therapy.

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