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Herbal Wonders in Anti-Ulcer Therapy



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ABSTRACT

Ulcer disease is the formation of lesion on the GIT. Several factors induces ulcer. There are number of synthetic/ marketed drug available for ulcer. Herbal medication is one of the suitable medications for ulcer. Plant extracts are non-toxic and safer. These are bio-degradable and biocompatible in nature. Plants can be used individually or can be used in combination (e.g.: polyherbal formulation). Herbal medication is cheaper in price and possesses less adverse effect than allopathic medication. Indian was used traditional medication anciently. In this review, we explain some herbs for curing ulcer disease.



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INTRODUCTION

Ulcer disease is gastro-duodenal disorder. The sores are formed on the gastric or duodenal mucosa due to acid secretion. Around 10% of the world population struggled by ulcer disease. Probability is more in male than female¹. There are different type of ulcer like peptic ulcer, aphthous ulcer and esophageal ulcer. The reason of gastric ulcer may be due to *Helicobacter pylori* infection, non-steroidal anti-inflammatory drugs (NSAIDs), prostaglandin, cytokinin, leukotrienes etc². Proton pump inhibitors and H2 blockers are synthetic medications commonly used and which produce some adverse drug reaction (ADR). This leads to an increase the interest of herbal drug in world. Herbal treatments are known as the most popular forms of traditional medicine. In this era several studies are conducted in medicinal plants³.

Importance of herbal drugs⁴

- These have less chance for unwanted reactions.
- Cost effective.
- Wide availability.
- Can be cultivated anywhere.



Large number of medication reported having anti-ulcer property. Here listed some plants possess such property. Sometimes polyherbal formulations may use for anti-ulcer therapy. The multiple plant extracts are combined to form a single medication is called polyherbal formulation. The outcome expected to be synergic effects. It acts against multiple problems and reduce diseases. By this patient, compliance can be increase. We can take a single formulation instead of multiple formulations⁵.

1. *Catharanthus roseus L.*

Catharanthus roseus is also called as vinca plant or vinca rosea of family Apocynaceae. It contains flavonoids, terpenoids, tannins, and triterpenes are reason for anti-ulcer property. It also contains other constituents ie. Alkaloid, catharanthine, vindoline, vindolinine, vincalucoblastine, leurosidine and vincristine. Methanolic extract of leaves is prepared by using soxhalet apparatus and treat ulcer using animal models⁶.

2. *Cissus setosa Roxb*

Cissus setosa Roxb is herb which belongs to the family Vitaceae. Methanolic extract of areal part was used and treat the ethanol induced ulcer. It contain large amount of flavonoids which have importance in protective mechanism. Soxhlet method is used for extraction ⁷.

3. *Carica papaya L.*

Carica papaya is a plant of family Caricaceae. Leaves extracted by using maceration technique in the solvent ethanol. The constituents are alkaloids, flavonoids, tannins, saponins, carbohydrates, glycosides, proteins, steroids, terpenoids, and fats. Which helps to increase gastric pH, decrease gastric juice secretion and decrease ulceration reported in the study using aspirin induced ulcer ⁸.

4. *Ricinus communis L.*

Oil obtained from seeds of *Ricinus communis* of family Euphorbiaceae. This also called as castor oil. Castor plant has anti-ulcer constituents which are flavonoids, tannins, alkaloids and saponins. It possesses H⁺, K⁺- ATPase inhibitory activity more than 90%. Extraction is done by kept in chloroform. It also possesses analgesic, anti-arthritic anti-inflammatory, anti-asthmatic, anti-dandruff, anti-nociceptive, antimicrobial, antifungal activities ⁹.

5. *Hibiscus rosasinensis L.*

Hibiscus rosa Sinensis is a flowering plant belong the family Malvaceae. It used as anti-ulcer agent in herbal medication traditionally. Aqueous - Ethanol mixture is used for preparing extract. It contains sterols, carbohydrates, glycosides, tannins and flavonoids. It acts against ulcer through calcium channel blocking activity. Thereby blocking calcium influx leads to decrease in gastric secretion ¹⁰.

6. *Gynura cusimbua*

The plant *Gynura cusimbua* is also known by name purple passion and terapaibi belongs to the family Compositae. Aqueous extract of leaves proved to decreased stress induced ulcer. It prepared by using soxhlet apparatus. The major constituent found as flavonoid. It contains wound healing property also ¹¹.

7. *Mussaenda philippica*

Mussaenda philippica is a shrub belongs to the family Rubiaceae. It commonly found in Philippines, India and South-East Asia. The leaves can be extracted by using water as solvent. The anti-ulcer activity proved by using animal models in some studies. Flavonoid in plant plays major role in anti-ulcer effect. Other than those saponins, tannins, phenols, triterpenoids and glycosides also found. It also possesses antioxidant, antimicrobial, anti-inflammatory activities ¹².

8. *Phyllanthus niruri L.*

Phyllanthus niruri L. also called as stonebreaker and seed-under-leaf belongs to the family Euphorbiaceae. It found in Asian or American region. Phytoconstituent are carbohydrates, saponins, alkaloids, terpenoids, steroids and flavonoids. The anti-ulcer activity proved by ethanol induced ulceration. The constituents responsible for protective effect were flavonoid, triterpenoids, steroids, saponins and tannin contents ¹³.

COMBINATION OF HERBS FOR ANTI-ULCER

- *Moringa oleifera*, *Raphinus sativus*, and *Amaranthus tricolor* PHF.

Its gastroprotective effects were proved by some studies using different gastric ulcer models. Phytochemical constituents were carbohydrates, proteins, saponins, flavonoids, tannins and glycosides. Synergic effect also produced by plants ¹⁴.

- **Polyherbal formulation RO12**

The PHF composed of plants *Glycyrrhiza glabra*, *Rosa damascena*, *Citrus aurantifolia*, *Aegle marmelos*, *Saccharum officinarum* and *Eletteria cardamom*. Formulation helps to increase in endogenous antioxidant enzyme. It reduces acid secretion thereby reduce ulceration ¹⁵.

CONCLUSION

Ulcer is a disorder which affects the GI tract. This article gives some herbal extracts suitable for ulcer therapy. All listed plants reduce ulceration in different animal models. All plant extract contains flavonoid constituent commonly and this expected to be act against ulcerogenic substances. *Catharanthus roseus L.*, *Cissus setosa Roxb*, *Carica papaya L.*,

Ricinus communis, *Hibiscus rosa sinensis*, *Gynura cusimbua*, *Mussaenda philippica* and *Phyllanthus niruri* L. are some anti-ulcer herbs. Instead of giving single drug, we can give multiple drugs together as a polyherbal formulation thereby can be increased activity.

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