

## A REVIEW ON ANTI-ULCER ACTIVITY OF OF *JASMINUM OFFICINALE* L. LEAF

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### ABSTRACT

Jasmine (taxonomic name *Jasminum*) is a genus of shrubs and vines in the olive family (Oleaceae). It contains around 200 species native to tropical and warm temperate regions of Eurasia, Australasia and Oceania. Jasmines are widely cultivated for the characteristic fragrance of their flowers. *Jasmine* or Jessamine is any of the more than two hundred species of shrubs and vines comprising the plant genus *Jasminum* of the olive family (Oleaceae). The term also refers to the perfume made from these plants. Jasmine is native to tropical and warm temperate regions of the Old World, chiefly Asia, with some species native to all continents except Antarctica and North America. It is widely grown throughout the tropics as an ornamental plant for its strongly scented flowers. Jasmine flowers are used in decorations and in producing jasmine tea, and the fragrant flowers are used in aromatherapy. Peptic ulcer disease is a group of disorders characterized by the presence of ulcers in any portion of gastrointestinal tract (GIT) exposed to acid in sufficient concentration and duration. Although these ulcerations most commonly occur in the stomach (gastric ulcer), or small intestine (duodenal ulcer), this disease also includes Barrett ulcer of the esophagus (Barrett's esophagus or Barrett's metaplasia) and other upper GI ulcers. A bacterium, *Helicobacter pylori* bacteria commonly live in the mucous layer that covers and protects tissues that line the stomach and small intestine.

**KEY WORDS:** Jasmine, *Helicobacter pylori*, *Jasminum Officinale*, Anti-Ulcer

### INTRODUCTION

The Word 'peptic' derives from the Greek term 'peptikos,' meaning related to digestion. Peptic ulcer is due to exposure of stomach and duodenum to pepsin and gastric acid.<sup>1</sup> Imbalance occurs between aggressive factors like acid, pepsin, H.

*pylori* and defensive factors such as gastric mucus, bicarbonate ions, and prostaglandins along with innate resistance of mucosal cells. Peptic ulcers are open sores that develop on the inside lining of your stomach and the upper portion of your small intestine. The most common symptom of a peptic ulcer is stomach pain.

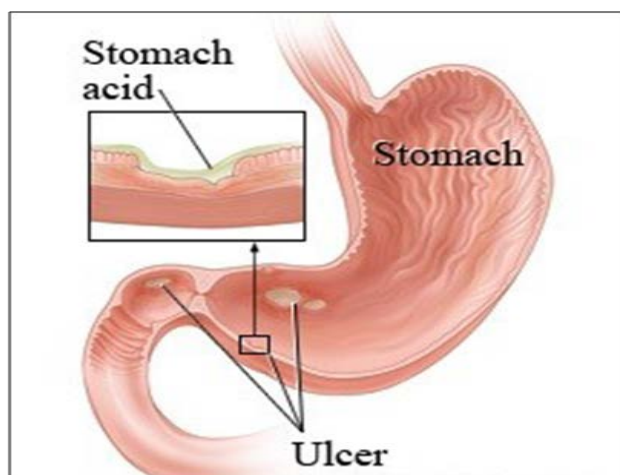


Fig. 1: Stomach acid secretion Fig. 2: Stomach ulcers

## PEPTIC ULCERS INCLUDE:

**Gastric ulcers** that occur on the inside of the stomach

**Duodenal ulcers** that occur on the inside of the upper portion of your small intestine (duodenum)<sup>4</sup>

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 (Advil, Motrin, others) and naproxen sodium (Aleve, Anaprox, others). Stress and spicy foods do not cause peptic ulcers. However, they can make your symptoms worse.

**Ulcer healing mechanism:** Three basic levels of defense underlie the remarkable ability of normal gastroduodenal mucosa to resist injury from the acid and peptic activity in gastric juice. 1. Surface epithelial cells secrete mucus and bicarbonate, creating a pH gradient in the mucus layer and change the very acidic gastric lumen to the nearly neutral surface of the mucosa. 2. Gastric mucosal cells have a specialized apical surface membrane that resists the diffusion of acid back into the cell. 3. Mucosal cells may directly resist injury by intrinsic mechanisms, such as the extrusion of back-diffused hydrogen ions by means of basolateral carriers (e.g. sodium-hydrogen or sodium bicarbonate exchange).

**Treatment:** Treatment for peptic ulcers depends on the cause. Usually treatment will involve killing the *H. pylori* bacterium, if present, eliminating or reducing use of aspirin and similar pain medications, if possible, and helping your ulcer to heal with medication.

### Medications can include:

**Aspirin-** Aspirin, also known as acetylsalicylic acid (ASA), is a medication, often used to treat pain, fever, and inflammation. Aspirin is also used long-term, at low doses, to help prevent heart attacks, strokes, and blood clot formation in people at high risk of developing blood clots. Low.

**COX-1 and COX-2 inhibition** At least two different types of cyclooxygenase occur: COX-1 and COX-2. Aspirin irreversibly inhibits COX-1 and modifies the enzymatic activity of COX-2. COX-2 normally produces prostanoids, most of which are

proinflammatory. Aspirin-modified PTGS2 produces lipoxins, most of which are anti-inflammatory.

**Antacids that neutralize stomach acid:** Your doctor may include an antacid in your drug regimen. Antacids neutralize existing stomach acid and can provide rapid pain relief.

**H<sup>+</sup>/K<sup>+</sup>-ATPase inhibitors:** Blockade of the gastric proton pump constitutes a more direct mechanism for acid secretion inhibition compared to blockade of histamine and cholinergic receptors. eg. Omeprazole.

**Prostaglandins:** PGs inhibit gastric acid secretion and protect against experimental ulcers caused by NSAIDs, diet and life styles (eg. alcohol, smoking and stress). Eg. Misoprostol (Cytotec) is a synthetic prostaglandin E analog with acid reducing and cytoprotective properties.<sup>8</sup>

**Role of H. Pylori infection in the pathogenesis of peptic ulcer:** *H. pylori* infection is present in almost all patients with duodenal ulcers and 70% cases with gastric ulcers. Duodenal ulcers - Usually associated with gastritis confined to the antrum. Gastric ulcers - Usually associated with pangastritis.

Jasmine (taxonomic name *Jasminum*)<sup>27</sup> is a genus of shrubs and vines in the olive family (Oleaceae). It contains around 200 species native to tropical and warm temperate regions of Eurasia, Australasia and Oceania. Jasmines are widely cultivated for the characteristic fragrance of their flowers.

## Taxonomy of plants-36 Kingdom Plantae – Plants

Subkingdom Tracheobionta – Vascular plants

Superdivision Spermatophyta – Seed plants

Division Magnoliophyta – Flowering plants

Class Magnoliopsida – Dicotyledons

Subclass Asteridae

Order Scrophulariales

Family Oleaceae – Olive family

Genus *Jasminum* L. – jasmine p



Fig. 11: *Jasminum officinale* plant



Fig. 12: Flower of *Jasminum officinale* plant

Jasmine (taxonomic name *Jasminum*) is a genus of shrubs and vines in the olive family (Oleaceae). It contains around 200 species native to tropical and warm temperate regions of Eurasia, Australasia and Oceania.<sup>11</sup> Jasmines are widely cultivated for the characteristic fragrance of their flowers. Jasmine can be either deciduous (leaves falling in autumn) or evergreen (green all year round), and can be erect, spreading, or climbing shrubs and vines. Their leaves are borne, opposite or alternate. They can be simple, trifoliate, or pinnate. The flowers are typically around 2.5 cm (0.98 in) in diameter. They are white or yellow in color, although in rare instances they can be slightly reddish. The flowers are borne in cymose clusters with a minimum of three flowers, though they can also be solitary on the ends of branchlets. Each flower has about four to nine petals, two locules, and one to four ovules. They have two stamens with very short filaments. The bracts are linear or ovate. The calyx is bell-shaped. They are usually very fragrant. The fruits of jasmines are berries that turn black when ripe.

*Jasmine* or *Jessamine* is any of the more than two hundred species of shrubs and vines comprising the plant genus *Jasminum* of the olive family (Oleaceae). The term also refers to the perfume made from these plants. Jasmine is native to tropical and warm temperate regions of the Old World, chiefly Asia, with some species native to all continents except Antarctica and North America. It is widely grown throughout the tropics as an ornamental plant for its strongly scented flowers. Jasmine flowers are used in decorations and in producing jasmine tea, and the fragrant flowers are used in aromatherapy.

In Thailand, jasmine flowers are used as a symbol of the mother, and in Indonesia the flower symbolizes purity, eternal life, nobility, and the beauty of a girl. It is the most important flower in wedding ceremonies for ethnic Indonesians, especially on the island of Java. *Jasminum molle*, commonly known as Indian Jui, is used as sacred offerings during Hindu religious ceremonies.

Some fragrant-flowered species of plants of other genera also use the common name of jasmine, including confederate or star jasmine (*Trachelospermum*), cape jasmine (*Gardenia jasminoides*), and night-blooming jasmine (*Cestrum nocturnum*). Carolina jasmine (*Gelsemium sempervirens*), also known as false jasmine or yellow jasmine, contains toxic alkaloid components which can be lethal in small doses.

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