

HERBAL DRUGS IN TREATMENT OF PEPTIC ULCER

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ABSTRACT

Ulcer is a common gastrointestinal disorder which is seen among many people. It is basically an inflamed break in the skin or mucous membrane lining the elementary tract. Ulceration occurs when there is a disturbance of normal equilibrium caused by either enhanced aggression or diminished mucosal resistance. It may occur due to the regular usage of drugs, irregular food habits, stress and so forth. Peptic ulcers are a broad term that includes ulcers of the digestive tract in the stomach or the duodenum. The formation of peptic ulcers depends on the presence of acid and peptic activity in gastric juice plus a breakdown of mucosal defenses. A number of synthetic drugs are available to treat ulcers. But these drugs are expensive and are likely to produce more side effects when compared to herbal medicines. The ideal aims of treatment of peptic ulcer disease should be to relieve pain, heal the ulcers and delay ulcer recurrence. In this review attempts have been made to know about some common medicinal plants which are being used in ayurvedic or modern science for the treatment or prevention of peptic ulcer and also some natural and easy ways in which available herbs can be used in treatment of ulcers.

Keywords-: Peptic ulcer, Medicinal plants, Antiulcer activity, Herbal drugs.

Introduction

The most common cause of stomach ulcer is a bacterium called *Helicobacter pylori*. Similarly ulcer may be caused by over use of pain killers, such as aspirin and non steroidal anti-inflammatory such as ibuprofen, naproxen etc. A peptic ulcer is essentially a wound that affects the mucous membrane of the digestive tract. Different names are given to ulcers depending on where they are located (gastric ulcers are located in the lining of the stomach, duodenal ulcers are located in the duodenum). Many times in clinical practice we see a lack of digestive enzymes to be the root cause of the ulcer. A lack of enzymes can create an imbalanced environment leading to a growth of *H.pylori* which can infect the mucous membrane. The pathophysiology of peptic ulcer disease involves an imbalance between offensive (acid, pepsin, *Helicobacter pylori*) and defensive factors (mucin, prostaglandin), bicarbonate, nitric oxide and growth factors. Peptic ulcers are once believed to be caused by spicy food and stress; these have been found merely to be aggravating factors and the real cause has been found by research to include bacterial infection (*Helicobacter pylori*). The gram-negative bacterium *Helicobacter pylori* remains present between the gastric epithelium and mucous layer and is strategically designed to live within the aggressive environment of the stomach. Initially, *Helicobacter pylori* reside in the antrum but over time migrate towards the more

proximal segments of the stomach. Peptic ulcer is one of the world's major gastrointestinal disorders and affecting

10% of the world population. About 19 out of 20 peptic ulcers are duodenal. In the Indian pharmaceutical industry, antacids and antiulcer drugs share 6.2 billion rupees and occupy 4.5% of the market share. In this modern era also 75-80% of the world population still used herbal medicine mainly in developing countries, for primary health care because of better compatibility with the human body, and lesser side effects. Preliminary photochemical screening of this medicinal plant identified in the presence of important secondary metabolites like flavonoids and tannins which are the active principle of anti ulcer activity. Materia medica provides lots of information about ethno medicinal herbs, which are valuable as antiulcer agents and their use experimentally evaluated and proved by many researchers for its suggested that medicinal plant those are evidently reported for its antiulcer activity. [1, 2]

Symptoms.

The pain is described to be sharp growing and burning. Depending on the where the ulcer is located the symptoms of ulcer can vary. The symptoms of some peptic ulcer and duodenal ulcer are given below

- Pain can be felt anywhere from the belly button to the breast bone. Sometimes it felt in back.
- The pain can be last from small minutes to several hours.
- Typically a duodenal ulcer elicits more pain when the stomach is empty and it temporarily relived when eating.

- In case of bleeding ulcer accompanied by vomiting or dark to black stool.
- Typically a peptic ulcer is worse during the night or when a person lays down.

Prevention.

For prevention you will want to consume foods that increase digestive function .bitter greens as a salad and warming spices such as turmeric and garlic can be helpful, if there is systematic inflammation and heat, then focusing on eliminating and draining heat systemically will be a strong focus. Cooling foods, berries, and healthy fats should be emphasized while heating foods such as alcohol and excessive hot peppers should be eliminated.[3]

The natural herbs used in natural treatment of ulcers.

Demulcent herbs:

Help to coat and soothe the irritated mucous membranes. These can provide symptomatic relief quite quickly.

Astringent herbs:

Help to frighten and tone the mucous membrane to help the wound they can also limit any infection

Antimicrobial herbs:

Can address infection of the wound. In the case of a peptic ulcer we want to helicobacter herbs that are specific to *H.pylori* such as goldenseal or garlic.

Valnerary herb:

Help to heal wounds.

Bitter herbs:

Help to stimulate digestive secretions (often a lack of digestive secretion is the underlining cause of the ulcer).

The following drugs are used for treatment of peptic ulcer

1. CABBAGE

Cabbage is a best remedy for a stomach ulcer, being a lactic acid food; cabbage helps to produce secretion of amino acid that stimulates blood flow to the stomach lining.

This in turn helps strengthen the stomach lining and heal the ulcer.

Plug cabbage contains a good amount of vitamin-C. Which has been found to be particularly beneficial for patient with *H.pylori infection*.

Also experiments indicate that fresh carrot juice contains an anti-peptic ulcer factor (vitamin).

Method of uses:

Cut one half of a raw head of cabbage and two carrots in to small pieces and put them in a blender to extract the juice.

Drink one half of this juice before each meal and at bed time.

Repeat daily for a few weeks. Be sure to use fresh juice each time.[5]

2. BANANAS

For stomach ulcer treatment both ripe and unripe bananas are very effective.

There are certain antibacterial compounds in banana that inhibit the growth of ulcer causing *H.pylori*. Banana also protects the system by wiping out the acidity of gastric juice. This helps reduce inflammation and also strengthens the stomach lining.

Method of uses:

To treat an ulcer eat at least three ripe bananas a day .If you do not eating banana, you can make banana milk shakes. Alternatively, peel two or three bananas and cut them and to thin slices.

Put the slices in the dried banana pieces in the sun until they become dried .Grind the dried banana pieces in to a fin powder. Mix together two tab teaspoon of honey.

Take this mixture three times a day for about a week.[6]

3. COCONUT

Coconut is very good for people, suffering from stomach ulcer because of its anti bacterial qualities. It kills the bacteria that cause ulcer. More ever, coconut milk and coconut water have anti ulcer properties.

Method of use:

Drink few cups of coconut fresh milk tender coconut water daily .Also eat the Kernel of the tender coconut follow this treatment for at least one weak to get +ve result.

Alternatively take one table spoon of coconut oil in the morning and another at night for one week.

As coconut oil is mainly composed of medium chain fatty acid, it can be easily digested.[7]

4. LIQUIORICE

Several studies suggest that licorice works effectively for treating and preventing stomach ulcer. It helps the stomach and intestine produce more productive mucous that forms a coating over the stomach lining .This in turn eases the pain form ulcer and speeds up the healing process.

Method of use:

Mix one half tea spoon of licorice root powder in one cup of water .Cover it and let it sit over night the next morning ,add one cup of cooked broken white rice in to this infusion and eat it .Repeat daily for one week to get +ve result .[8]

5. FENUGREEK

Fenugreek is known for its power full healing properties and health benefits .You can use it to treat stomach ulcer also. Being rich in a mucilaginous compound, fenugreek protects the stomach lining by coating it like mucus, there by facilitating the process of healing.

Method of use:

Boil one tea spoon of fenugreek seeds in two cups of water. Strain and drink it after adding a little honey to it.[9]

6. CAYENNEPEPPER

Surprisingly ,cayennepepper is another very effective remedy for treating stomach ulcer .according to a review published in food science and nutrition .The compound capsaicin present in cayenne pepper inhibit the secretion of stomach acid ,boots the production of alkali ,and stimulate mucosal secretion and gastric mucosal blood flow ,there by preventing and healing ulcers.

Method of use:

Mix one-eight tea spoon of cayenne pepper in a glass of worm water drink it twice a day for the 1st two to three days.[10]

7. HONEY

Raw honey has potent healing properties that help a lot in the treatment of stomach ulcer .An enzyme called Glucose oxides in honey produces hydrogen peroxide, which in turn kills harmful bacteria that

cause ulcer. Plus it soothes and reduces the inflammation of stomach lining.

Method of use:

Take two table spoons of raw honey daily early in the morning on an empty stomach.

It will help cleans the bowl strengthen the stomach lining and also treat the stomach ulcer.[11]

8. GARLIC

Garlic helps in treatment of stomach ulcer .The anti bacterial and anti microbial properties of garlic can keep levels of the *Helicobacter pylori* bacterium in check, which contribute to the development of stomach ulcer.

Method of use:

Simply take 2-3crushed garlic followed by a glass of water during the day. Do this on a daily basis to ease inflammation in the stomach and prevent stomach ulcer.[12]

9. SLIPPERYELM

Slipperyelm is another good remedy for stomach ulcer. The inner bark of the slipperyelm contains a good amount of mucilage that soothes and clams inflammation and pain .Plus the mucilage helps the removal of excess fats in the intestines.

Method of use:

Take the inner bark of the slipperyelm and grind it in to a powder. Mix one tea spoon of this powder in one cup of warm water.

Drink this mixture three times a day for one week.[14]

10. WOOD APPLE

Leaves of wood apple ,also known as Beal, is also very useful in the treatment of stomach ulcer .The tannins present in the leaves help

protect the stomach agents damage from treatment of stomach acid.

Juis secreted from wood apple fruit also help to reduce pain and inflammation due to its mucilage content.

Method of use:

Soak two to three wood apple leaves in one cup of water in a cupper vessel over night .The next morning strain the mixture and drink it an empty stomach .Fallow this treatment daily for few weeks.[15]

INHIBITION OF ACID PRODUCTION-:

Inhibition of acid production can improve gastric ulcer .Many herbal medicines with anti gastric ulcer activity reduce gastric acid secretion. For example, oral ocimwn tantalum extract for 3 day induced a > 50% reduction in total gastric acidity. Similarly oral solanum nigrum fruits extract as a dose of 400 mg/kg lowered gastric acid concentration comparable to omeprazole (10 mg/kg). Herbal medicine induced reduction in acid production could be due to -: (1) inhibition of H(+)/k(+) ATPase activity ,as demonstrated in human gastric ulcer ,or (2) stimulation of prosta- glandin E2 production.[16]

SOME HERBS AND THEIR ANTI ULCER ATIVITY-:

1. Myrtus communis-:

Myrtus communis (Myrtaceae) is commonly known as "myrtle". It is cultivated in many parts (in gradients) of India. Chemical constituents in the pant are ripe berries that contain an essential volatile oil (oil of myrtle), resin, tannin, citric acid, mallic acid and sugar.

Antiulcer activity-:

In Ayurvedic. Powder of leaves is useful application in wounds and ulcers.

The fruit, myrtle berry carminative and given in the form of infusion for internal ulcerations .Active constituents. Fixed oil euginol is considered.

2. **Acacia arabica-:**

Acacia arabica (family mimosaceae), is common all over India in dry and sandy locality. It is commonly known as "babul tree" and locally called as "karuvelum". The chemical constituents are gum containing Arabic acid combined with calcium, potassium, magnesium. It contains 14% moisture, ash 3-4 %. Bark contains large quantity of tannin pods contain 22.44% tannin.

Antiulcer activity-:

Bruised tender leaves formed in to a poultice and applied to ulcer act as stimulant and astringent. Active constituents is phenolic compounds, tannins and flavonoids are considered .

3. **Aegle marmelos-:**

Aegle marmelos which is commonly known as a "ball tree" belonging to the family Rutaceae is the plant that chiefly grows on throughout India. Chemical constituents are flavonoid, tannins and saponins.

Antiulcer activity-:

Ulcers are induced by aspirin plus pylorous ligated gastric ulceration in rats and aqueous extract of leaves is to be administrated orally for 21 days , daily dose of 1 mg/kg .

4. **Aloevera-:**

Aloevera belonging to family liliaceae is commonly known as "aloe gel ". It is locally called "kettalai" which is found all over India. Chemical constituents in this plant are aloin, isobarbalin and ematin.

Antiulcer activity-:

Aloevera powder was mixed with gumaccacia; the solution was administrated orally in rats at dose of 200 mg/kg against indomethacin induced gastric ulcer. Active constituents are Barbalin, isobarbalin.

5. **Allium sativum-:**

Allium sativum belonging to family liliaceae is commonly known as "garlic" and locally called as "vellupundu". It is cultivated all over India. Chemical constituent present in this plant are acrid volatile oil which is active principle.

Antiulcer activity-:

Garlic juice mixed with 3 Or 4 parts of ordinary or distilled water has been used as a lotion for washing wounds and toul ulcers. Active constituents are volatile oil, allin and allicin are considered.

6. **Ficus religiosa-:**

Ficus religiosa (urticaceae) is commonly known as "sacred fig ". It is locally called "arasha-maram". Chemical constituents in this plant are bark containing tannin, caoutchous and wax.

Antiulcer activity-:

Bark is useful in ulcers in infusion or decoction with a little honey. Active constituents are bioactive compounds like flavonoids, saponins and tannins are considered.

7. **Mimosa pudica-:**

Mimosa pudica (fabaceae) is commonly known as "touch me not". It is locally called "thottal sinungee". Chemical constituents in this plant are flavonoid, quercitin, naringin, tannins and mucilage.

Antiulcer activity-:

Decoction of the fresh leaves and seeds are consumed for intestinal ulcer. Active constituents are alkaloids, mimosine is considered. .

8. Annona squamosa:-

Annona squamosa (Annonaceae) is commonly known as “custard apple “. It is cultivated in gardens all over India which is locally called as “sitapalam“. Chemical constituent in this plant are alkaloids, flavonoid, saponins and tannins.

Antiulcer activity:-

Leaves made in to a paste without adding water are applied to unhealthy ulcers. The aqueous leaf extract protected against pylorus ligation and ethanol induced gastric ulcer in rats. As active constituents tannic acid is considered.

9. Beta vulgaris:-

Beta vulgaris (Chenopodiaceae) is commonly known as “beetroot “. It is native of the sea-coasts of the tree Mediterranean, now extensively considered in Europe and America and is

known as sugar-beet. There are two kinds white and red .

Antiulcer activity :-

A decoction of the root with a little vinegar added is excellent for all kinds of ulcers and running sores.

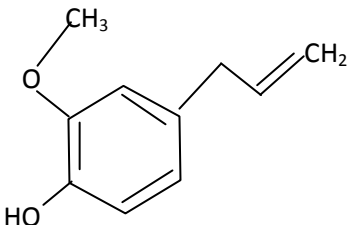
10. Galega purpurea -:

Galega purpurea (papilionaceae) is commonly known as “purple tephrosia“. It is locally called “kolluk – kay – welai“. It is found throughout India, especially in southern India . It is grows on hard stony ground too difficult to be rooted. Chemical constituents are yield gum, a fresh of albumen and colouring matter, resin, chlorophyll, glucoside rutin.

Antiulcer activity:-

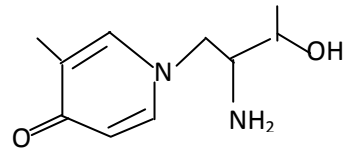
Root powdered and mixed with honey is applied to ulcers.[17]

Table 1:Ulcer protective effect of some active constituents isolated from herbal drugs.

Medicinal plants	Active constituents.	Chemical structure
Cimum sanctum	Fixed oil euginol	 <p>Eugenol C₁₀H₁₂O₂</p>
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Mimosa pudica

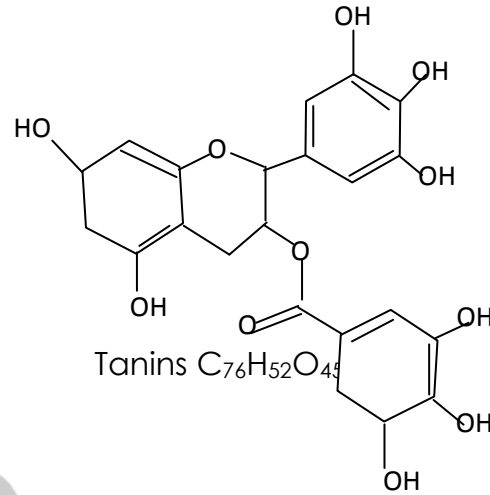
Alkaloid mimosine



Mimosine C₈H₁₀N₂O₄

Arnoma squamosa

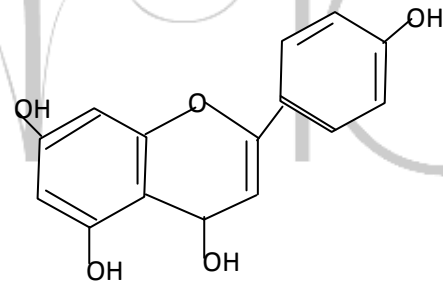
Tanicacid



Tanins C₇₆H₅₂O₄₈

Ficus religiosa

Flovonoids-Naringinin



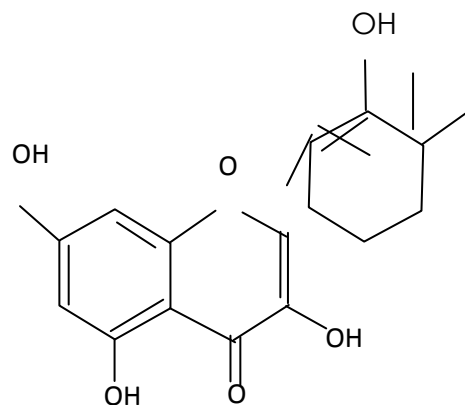
Naringenin

C₁₅H₁₂O₅

Maringa oleifera

Quercetin, beta sitostext

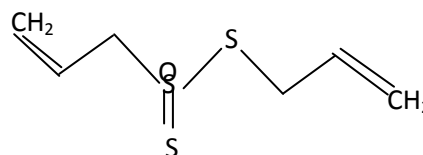
Beta carotene



OH

Allium sativum

Allin and allicin

Allium C₆H₁₂NO₂S

Conclusion -:

From this study we concluded that the above plants have efficacy to protect or treat peptic ulcer induced by various factors such as *H. pylori*, aspirin, intomethacin, alcohol, etc. These plants have been screened by in vivo and in vitro possessing anti-ulcer activity and can be used as an alternative source to treat ulcers. Now treatment of ulcers mainly targets the potentiating the defensive system along with lowering of acid secretion. There are various medicinal plants and their extracts (containing active chemical constituents, e.g. tannins and flavonoids) that have significant antiulcer activity. Plant drugs are more preferable than allopathic medicines. It is an efficacious and cost-effective, easily obtainable having less side effect.

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