

Herbs used in treatment of mouth ulcer: an overview

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ABSTRACT

While the mouth ulcer is healing, it frequently causes pain and discomfort and may change the person's eating preferences. The two most frequent causes of oral ulceration are aphthous stomatitis and local trauma. This review focuses on the mouth ulcer's causes and contributing elements. Due to its greater cultural acceptance, better compatibility with the human body, and less side effects, herbal medicine is the mainstay of primary healthcare.

Unless linked to some underlying systemic component, the ailment typically resolves in 10 to 14 days, with the potential for a quick recurrence. Eating, drinking, and swallowing are all impacted during the active disease phase, which lowers quality of life. Analgesics, antibiotics, and topical steroid application are the only medications used to treat symptoms in most cases. These over-the-counter medications occasionally have very negative side effects. An effective and safer alternative to synthetic medications is herbal medicine. The purpose of this article is to review the most widely

The medications used to cure mouth ulcers—Aloe vera, guava, capsicum annum, papaya, Glycyrrhiza glabra, turmeric, and noni fruit—along with their biological sources, families, morphologies, chemical components, and uses—are summarised in this article.

Keywords: Oral ulceration, Local trauma, Aphthous stomatitis.

I. INTRODUCTION¹⁻⁴

An ulcer that develops on the mucous membrane of the oral cavity is known as a mouth ulcer, also known as an oral ulcer or a mucosal ulcer. Usually on the inside of the cheeks or lips, these are painful round or oval sores that develop in the mouth. Mouth ulcers are fairly frequent and can be brought on by a variety of illnesses and procedures, although they often have no major underlying causes. Nutritional deficiencies, such as iron deficiency, vitamin deficiencies, particularly B12 and C, poor dental hygiene, infections, stress, indigestion, mechanical damage, food allergies, hormonal imbalance, skin conditions, etc. are common causes of mouth ulcers. Aphthous ulcers,

another name for mouth sores, might hurt while consuming food or beverages or when cleaning one's teeth. Mouth ulcers are caused by erosion or loss of the upper mucosal layer. This is one of the most commonly encountered pathological conditions of the oral cavity. These wounds are commonly painful and most commonly found on the medial side of lips and cheeks. The etiology of stomatitis is still unknown. Various conditions are thought to be involved in their appearance. Various viruses, fungi, treponema, autoimmune diseases, malnutrition, hormonal changes, psychological stress, malignant and other factors have been identified as involved in their creation.

Mouth Ulcer Types⁴⁻⁸

Mouth ulcers are classed as major, minor or herpetiform based on their size and quantity.

The following are the most common forms of mouth ulcers:

Minor ulcers:-

These are typically 2-8mm in diameter and heal in 10 days to 2 weeks.

Major ulcers -

Major ulcers are larger and deeper in size, with a raised or uneven border. It may take many weeks for this form of ulcer to heal and may leave a scar in the mouth.

Herpetiform ulcers -

Herpetiform ulcers are a collection of dozens of tiny lesions roughly the size of pinheads.

Ulcerative conditions⁸⁻¹¹

Mouth ulcers are fairly frequent and are caused mostly by trauma, such as ill-fitting dentures, shattered teeth, or fillings. However, a biopsy or other diagnostic procedure. Patients with ulcers that have been present for more than three weeks should get a biopsy or other testing to rule out cancer or other dangerous disorders such as persistent infections.

Causes of Ulcers-

MicrobialDisease	Malignant Neoplasms
Herpetic stomatitis	Blood disorder Anaemia Leukaemia Neutropenia Other whitecelldyscrasias
Chicken pox	Gastrointestinal disease Coeliacdisease Ulcerativecolitis Crohn’sdisease
Herpes zoster	Rheumatoid Diseases Lupuserythematosus
Hand, foot and mouth diseases	
HIV infections	

Factors responsible for the mouth ulcers

- Toothpastes and mouthwashes that contain sodium lauryl sulfate
- Emotional stress / Psychic stress
- Hormonal changes
- Nutritionaldeficiencies
- Mechanical trauma
- Viral infections
- Allergies and sensitivities
- Genetics
- Infectious agents (both bacterial and viral)
- Medical conditions

Mouth ulcers have been linked to a number of risk factors and triggers, but there is currently no known cause.

A higher risk of developing mouth ulcers is found in children, adolescents, and those with a family history of the condition.

Some triggers are:

an allergic reaction to oral bacteria bacterial, viral, or fungal infections in the mouth, such as hand, foot, and mouth disease sensitivities to acidic foods and beverages like strawberries, citrus fruits, pineapple, chocolate, and coffee certain nutrient deficiencies, especially vitamin B9 (folate), vitamin B12, zinc, and iron hormonal changes, such as those that occur during menstruation or pregnancy emotional stress lack of

sleep Mouth ulcers can also be a sign of conditions that are more serious and require medical treatment, IBD, including ulcerative colitis, celiac disease, diabetes, HIV, and a few autoimmune diseases, such as:

Behçet's disease, also known as lupus oral lichen planus, is a rare condition that causes blood vessel inflammation.

Herbal Remedies for Mouth Ulcers¹¹⁻¹⁶:

Herbalists have traditionally used phytogetic agents and indigenous healers for prevention and treatment Ulcer This article gives an overview of the anti-ulcer properties of the most commonly used medicinal herbs and its identified active ingredients. Botanical Compounds with antiulcer activity include flavonoids (e.g. quercetin, naringin, silymarin, anthocyanosides, soforadin derivatives) saponins (e.g.E. en Panaxjaponicus and Kochia scoparia), tannins (i.e. of Linderaeumbellatae), gums and mucus (i.e.guar gum and myrrh). Among the medicinal herbs are licorice, Aloe gel and capsicum (chili) were used far. Ethnomedical systems use different ones Plant extracts for the treatment of ulcers.

Benefits of Medicinal Herbs-

Herbal medicines have a long history of use and better patient tolerance and public acceptance.

- Medicinal plants have a renewable source, ie we can have sustainable supplies cheaper Medicines for the growing world population.
- Because of the agroclimatic, cultural and ethnic biodiversity of developing countries Indian availability of medicinal plants is none Output.
- Cultivation and processing of medicinal products the herbs are organic.

Disadvantages of Herbal medicines

- Herbal medicines can have many benefits. but it also brings with it a number of disadvantages.
- On the one hand, medicinal herbs a work longer than drugs. When a person decides to take the herb Alternative to drugs they must be very Patiently.
- Herbal medicines are often self-administered.As such, no dosages or warnings are given. When medicinal herbs are consumed together with drugs, the two can interact with each other others and lead to health impairments.
- It is also important to know that the plants used are like an herbal medicine can poison someone instead than to heal them It can be so true Part of a

plant is edible and part is edible poisonous. Take rhubarb, for example.

□ Rhubarb roots are used as a laxative and the stalk is edible. However, its leaves are poisonous.

A person may not be able to recognize a poisonous plant. This would put the person at risk of poisoning yourself or others.

Table No.1:Herbs used for the treatment of mouth ulcer

CommonName	Botanical Name	Parts Used	Uses
Aloevera	Aloebar badensis	Leaves, flowers, stems, roots, fruits, seed.	analgesic, antibacterial, antiviral, antifungal, antioxidant, immunomodulating, antiseptic, anti-inflammatory.
Guava	Psidiumguajava	Leaves, roots, fruits.	Guavas are extensively used to make candies, preserves, jellies, jams.
Capsicum	Capsicum annum	Fruit	As a spice: the sweeter variety are called as bell peppers and the hot ones as chillies. In GI disorders: Intestinal gas, upset stomach, cramps, stomach pain, diarrhea etc.
Papaya	Carica papaya Linn	bark, leaves and fruit	Papain is used extensively for tenderizing meat. Another use of this enzyme is as an ingredient in cleansing solution for soft lenses. Papain is used as a digestant for protein.
Turmeric	Curcuma longa	Rhizomes and stem	canned beverages, baked products, dairy products, ice cream, yogurt, yellow cakes, orange juice, biscuits, popcorn color, cereals, sauces, and gelatine.
Liquorice	Glycyrrhiza glabra L.	Roots and stem	tonic, demulcent laxative, mollifier are used in genitourinary diseases.
Nonifruit	Morinda citrifolia Linn	Fruit	abnormal menstruation, acne/boils, constipation, diarrhea, arthritis, diabetes, fever, high blood pressure, gastric ulcers.

Medicinal plants used in treatment of mouth ulcers¹⁶⁻²⁶

Aloe vera

Source- The natural source of Aloe vera is Aloe barbadensis.

Family - It belongs to the family Xanthorrhoeaceae. Morphology - Aloe vera is a stemless or veritably short-stemmed factory growing to 60 – 100 cm(24 – 39 in) altitudinous, spreading by equipoises. The leaves are thick and

fleshy, green to slate-green, with some kinds showing white flecks on their upper and lower stem shells. The Periphery of the splint is serrated and has small white teeth. The flowers are produced in summer on a shaft up to 90 cm (35 in) altitudinous, each flower being pendulous, with a unheroic tubular corolla 2 – 3 cm(0.8 –1.2 in) long. Like other Aloe species, Aloe vera forms arbuscular mycorrhiza, a symbiosis that allows the factory more access to mineral nutrients in soil. Factory part used Leaves, flowers, stems, roots, fruits, seed.

Chemical components - The chemical ingredients in Aloe vera are Anthraquinones, Saccharides, Prostaglandins and adipose acids. Others Enzymes, amino acids, vitamins, minerals. Other composites Cholesterol, triglycerides, steroids, uric acid, lignins, beta- sitosterol, gibberellin, salicylic acid.

Uses-

It's analgesic, antibacterial, antiviral, antifungal, antioxidant vulnerable modulating, antiseptic, anti-seditious. Aloe vera is used in the spots of periodontal surgery, toothpick injuries, chemical beck , aphthous ulcers, goo abscesses, dry socket, lichen planus, benign pemphigus and gingival problems associated with AIDS, leukemia, migrant glossitis, geographic lingo and burning mouth pattern, denture sore mouth, candidiasis, desquamative gingivitis, vesicubullous conditions, acute monocytic leukemia, xerostomia



Guava-

Source - Psidium guajava is the biological source of Guava.

Family- It is a member of the Myrtaceae family.

Size- Guava fruits range in size from 4 to 12 cm.

Morphology - Depending on the species, they are round or oval and range in length from 1.6 to 4.7 in. They have a strong and distinctive aroma, akin to lemon peel but less harsh. The skin on the outside might be hard and bitter, or delicate and delicious.

The skin can be any thickness and any colour, depending on the species. It is normally green before maturity but can be yellow, maroon, or green when mature. The pulp inside can be sweet or sour, and it can range from off-white ("white" guavas) to deep pink ("red" guavas). The amount and toughness of the seeds in the core pulp varies according to species.

Plant parts utilised- include leaves, roots, and fruits.

Chemical constituents: -Carotenoids and polyphenols such as (+)-galocatechin and leucocyanidin are found in guava leaves. Because some of these phytochemicals form the fruit skin and flesh colour, red-orange guavas have higher polyphenol and carotenoid content than yellow-green guavas.

Guavas are often used to produce sweets, preserves, jellies, jams, and marmalades (such as Brazilian goiabada and Colombian and Venezuelan bocadillo), as well as marmalade jam used over toast, due to its high pectin content. Red guavas can be used as the foundation of salty items such as sauces, replacing tomatoes to reduce acidity. A drink created from an infusion of guava fruits and leaves is known as chá-de-goiabeira, or "tea" in Brazil.

Capsicum annum L²⁶⁻²⁸ . -

Sources - Capsicum consists of dried fruits of Capsicum annum and smaller dried fruits of Capsicum frutescens.

Family -It belongs to Solanaceae family

Morphology:

Individual flowers are whitish (sometimes purple), but the stems are densely branched and reach 60 cm in height. The fruit is a berry, which can be green, yellow, orange, or red when they ripen. Although this species tolerates most frost-free climates, C. annum is especially productive in temperate and dry climates.

Plant parts used: fruit.

Chemical Composition: The chemical composition of Capsicum annum is capsaicin, paprika oleoresin, and dihydrocapsaicin.

Uses:

Capsicums are useful in many ways for a number of ailments, such as:

As a spice:

Sweet varieties are called paprika and spicy ones are called hot peppers.

For gastrointestinal disorders:

Abdominal bloating, upset stomach, cramps,

Stomach pain, diarrhea, etc.

Skin diseases: -Due to its anti-irritant properties,

is used in the form of ointments, patches, etc., and is used to treat rheumatism, shingles, lumbago, etc. For Neuropathy: Used to relieve neuralgia associated with diabetes, HIV, fibromyalgia and back pain.



Papaya²⁸⁻³⁴:

Source - The biological source of papaya is *Carica papaya* Lin

Family. It belongs to the Caricaceae family, known for various medicinal properties. Fruits have been reported to have anti-ulcer activity. Seeds are antibacterial, anthelmintic, anti-amoebic properties. Form:

Morphology - Papaya is a large single stem plant, perennial herbaceous tree 20 to 30 feet tall (around 1). Leaves are very large (up to 2 1/2 feet broad), palmately notched or deeply dissected throughout. The margins and petioles are 1 to 3 feet long. The stem is hollow, light green to light brown in diameter. There is a noticeable scratch at 8 inches.

Plant parts used: bark, leaves and fruit.

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Chemical composition:-

Main Active Ingredients of Papaya: Papaya is a very powerful digestive agent. Useful for a variety of uses. Fruits are rich in vitamin E and minerals (especially potassium). Include papain and chymopapain, potent proteolytic enzymes. Second hand:

Uses-

Papain is the dried and refined milky juice of the fruit.

From *Carica papaya*. Papain is a mixture of immature proteolytic enzymes from the fruit of the papaya tree. Papain is used to tenderize meat. Another use of this enzyme is as a component of cleaning solutions for soft contact lenses. Papain is used as a digestive agent for proteins due to its effectiveness. Similar to pepsin, used to mitigate symptoms of episiotomy. Affecting casein in milk.



Turmeric³⁵⁻³⁹:-

Source - The biological source of turmeric is the ginger family. Turmeric belongs to the turmeric family. Turmeric has been evaluated for gastric and duodenal anti-ulcer activity in rats. The volatile oil of turmeric is resistant to inflammatory and anti-arthritis activity. Water and fat soluble extract of curcumin was strongly indicated. Antioxidant activity comparable to vitamins C and E. Form: Morphology - Turmeric is a perennial herb, reaches 1 m (3 ft 3 in) in height. Greatly branched, yellow to orange, cylindrical, aromatic rhizome found. Leaves are alternate and arranged in pairs. They are leaf sheaths, petioles, blade. Leaf sheath becomes pseudostem. The petiole is 50-115 cm long. Simple leaf blades are usually 76-115 cm (30-45 inches) long, rarely up to 230 cm (91 inches). It is 38 to 45 cm (15 to 18 inches) wide and tall. Elliptical with tapering tip.

Plant parts used: - rhizome and stem

Chemical composition:- The phytochemical composition of turmeric contains diarylheptanoids, a class that includes many curcuminoids, such as curcumin, demethoxycurcumin and bisdemethoxycurcumin. Up to 3.14% of the ingredients studied were curcumin. Commercial samples of turmeric powder (mean was 1.51%); much less curry powder (0.29% on average). Contains about 34 essential oils. Turmeric, turmerone, germacron, atlantone and zingiberene are the main ingredients.

Uses: Most turmeric is used in rhizome form. Powder to a golden color. It is used in many products such as canned drinks and baked goods. Agricultural products, dairy products, ice cream, yogurt, yellow cake, orange juice, biscuit, popcorn color, muesli, sauce and gelatin. Curry's main character powder. It is usually dried before use. Like ginger, turmeric is used raw and powdered. It has many uses in East Asian recipes.

such as: Pickles with large soft turmeric from fresh turmeric



Liquorice³⁹⁻⁴⁶ -

Family - *Glycyrrhiza glabra* L., often known as Liquorice Family, is a sweet, moist, relaxing, flavouring plant that belongs to the Fabaceae family.

Morphology -

It is a herbaceous perennial that grows to 1 metre (39 in) in height, with pinnate leaves that are 7-15 cm (3-6 in) long and have 9-17 leaflets. The blooms are 0.8-1.2 cm (13.1-12 in) long and purple to pale white blue in colour, formed in a loose inflorescence. The fruit is an oblong pod that is 2-3 cm (3-4 1 18 in) long and contains numerous seeds. Stoliferous roots are present.

plant parts were used: Roots as well as stolon

Chemical composition -

Glycyrrhizin, a saponin 60 times sweeter than cane sugar, is found in the roots of *Glycyrrhiza glabra* Linn. Flavonoid rich fractions include liquiritin, isoliquirtin, liquiritigenin, and rhamnoliquiritin, as well as five novel flavonoids-glucoliquiritin, glucoliquiritin, glucoliquin Apioside, prenyllicoflavanone, shinpterocarpin, and 1-methoxyxyphaseolin were extracted from dried roots. 13. Licopyranocoumarin, licoaryl coumarin, glisoflavone, and a novel coumarin-GU-12 were also isolated and their structures determined. Semilicoisoflavone B, 1 isoprenoid-substituted phenolic components.

Uses -

This plant species has been used for a variety of purposes, including anti-inflammatory and expectorant properties, cough management, and hormonal effects. It cleanses and protects the liver. Internally, it is used to treat Addison's illness, as well as asthma, bronchitis, peptic ulcers, arthritis, allergic symptoms, and steroid treatment. Liquorice is used externally to treat Eczema, Herpes, and

Shingles. Liquorice lowers blood testosterone levels in women and is effective in the treatment of aplastic anaemia. Since then, liquorice extract has been utilised in auto-immune disorders and has shown to be beneficial in immunodeficiency illnesses such as AIDS. Licorice root constituents exhibit both estrogenic and anti-estrogenic action. As a result, it is a significant herb for treating hormone-related feminine issues. It is used as an energy tonic, especially for the spleen and stomach, and the root is edible.



Noni (*Morinda citrifolia* Linn.) Fruit: Noni (*Morinda citrifolia* Linn.)⁴⁶⁻⁵⁰

Source - Indian Mulberry, Nuna, Cheese Fruit, and more names Yellow tookunja, Great morinda, Mouses'pineapple

Family- The root of the Rubiaceae family.

Morphology - It is an evergreen tree with a single stem. 13 cm in diameter. Sapwood is a soft yellowish-brown wood. In nature, and the bark is grey or brown. Nature is smoothish to somewhat rough. Twigs are lightweight. Green with four angles. Fruit was employed as a component.

Chemical composition - Anthraquinones are chemical components. The principal classes of antioxidants are flavonoids and phenolics. secondary metabolites in charge of the therapeutic Indian Mulberry plant activities 24. The oligo- and components of polysaccharides, glycosides, and alkaloids potassium, vitamin C, terpenoids, octoanoic acid anthraquinones (nordamnacanthal, morindone, and others) rubiadin, methyl ether, and anthraquinone Carotene, vitamin A, flavone glycosides acubin, linoleic acid, alizarin, amino acids

Uses -

Noni fruit juice has long been used to treat various illnesses such as irregular menstruation.

Acne/boils, constipation, diarrhoea, arthritis, diabetes, and other conditions. Fever, high blood pressure, stomach ulcers, sprains, and other symptoms. Depression, senility, and bad digestion. Atherosclerosis, blood vessel issues, and medication interactions.

Honey -

It is obtained from bees

Family - Apidae

Chemical components - Carbohydrates Protein Vitamin Amino Acid Minerals Organic salt Flavonoids Polyphenols Glycosides

Mechanism of action: Because honey has antibacterial and anti-inflammatory qualities, it may be applied to mouth ulcers to reduce inflammation and kill germs in the mouth, resulting in an automatically healing ulcer.

Uses -

It has antioxidant properties and is used to heal mouth ulcers. It has antibacterial properties, therefore it eliminates microorganisms in the mouth. Because it has apoptotic action, it is also employed in cancer therapy. It has anti-inflammatory properties, therefore it reduces irritation in the mouth. It is also used for diabetic therapy. Asthma is treated with honey, and cardiovascular disease is treated with honey.



Mint -

Family: - Lamiaceae (Labiatae)

Chemical composition - vitamin A, Vit B Calcium, magnesium, Iron

Mechanism of action - Mint leaves are placed to mouth ulcers to provide a cooling effect, reduce discomfort from the ulcer, and provide aroma in the mouth. It has an antibacterial effect against cytogenic bacteria.

Uses -

It has an antimicrobial effect, so it is used to treat ulcers. Because of the presence of flavonoids, the mint leaf is useful for fresh breath. It also has a cooling effect in the mouth.



Jasmine-

Also known as Chameli

Family - Oleaceae

Chemical components include: - Benzyl Alcohol, Benzyl Acetate, Linalool, Indol, Benzyl Benzoate, Cis Jasmine, Geraniol, and Methyl Anthranilate.

Mechanism of action: - Because jasmine has anti-inflammatory and antibacterial properties, it can be used to treat ulcers and reduce pain associated with them.

Uses - It has anti-inflammatory properties, hence it is used to reduce inflammation caused by ulcers. It is used to relieve pain caused by the existence of an ulcer in the mouth, as well as in the treatment of cancer as a pain reliever. It is used to treat canker sores in the mouth. It is also used to treat constipation, which causes mouth ulcers.



Acacia Arabica - also called as Babul

Family - Leguminosae

Chemical composition - It is made up of arabin, a complex combination of calcium, magnesium, and potassium salts of Arabic acid. D-galactose D-glucuronic acid L-arabinose. It also includes the enzymes oxidase and peroxidase. Polyphenols are antioxidants. Galic acid (Bark) Sucrose (Bark)

Tannin (Bark) Amino acid (Seeds) Fatty acid (Seeds) Ascorbic acid (Seeds)

Uses - It acts as a stimulant and astringent when applied on ulcers. It is used to brush the teeth in order to eradicate fragrance microorganisms from the mouth.

Identification Test:- □ Solution of gum of {Pb(C₂H₃O₂)₂} lead acetate gelatinises the aqueous solution of indin gum □ It is not produce the pink colour with the solution of ruthenium red □ But on addition of hydrogen peroxide solution and alcohol to aqueous solution of gum to produce blue colour due to the presence of oxidize enzyme



Tridax Procumbens⁵⁰⁻⁵³ - also called as coat buttons

Family - Asteracea

Chemical ingredients include:- alkyl esters, sterols, pentacyclic triterpenes, fatty acids, polysaccharides, and flavonoids. Mechanism of action: - It is used on mouth ulcers to relieve pain caused by the ulcers since it has analgesic properties.

Uses - It has anti-inflammatory properties, hence it is used to reduce irritation in the mouth. It inhibits the growth of microorganisms in the mouth because it is a robust antibacterial agent. It is mostly used to alleviate pain because it has an analgesic impact in the mouth, which reduces discomfort caused by ulcers.



II. CONCLUSION

It is obvious from this review that medicinal plants play an important role. It is crucial in the treatment of oral ulcers. The anti-ulcer medication activities that are most likely linked to the presence of flavanoids in herbal plants because they are more compatible with human body, with fewer negative effects. The natural Medicine is the greatest option for treating oral problems. due to the presence of chemical elements, ulcer which are naturally present and have several applications and therapeutic benefits.

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