

HERBAL REMEDIES FOR MOUTH ULCER: A REVIEW

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(Received on Date: 8th May 2017

Date of Acceptance: 21st July 2017)

ABSTRACT

Mouth ulcer is one of the common disorders caused due to variety of etiological factors. The two most common causes of oral ulceration are local trauma (e.g. rubbing from a sharp edge on a filling) and aphthous stomatitis ("canker sores"), a condition characterized by recurrent formation of oral ulcers for largely unknown reasons. Mouth ulcers often cause pain and discomfort, and may alter the person's choice of food while healing occurs. This review focusses on various herbal remedies for the treatment of mouth ulcer.

Keywords: Ulcer, Aphthous stomatitis, canker sores

No: of References: 24

INTRODUCTION

A mouth ulcer (also termed an oral ulcer, or a mucosal ulcer) is an ulcer that occurs on the mucous membrane of the oral cavity. They are painful round or oval sores that form in the mouth, mainly on the inside of the cheeks or lips [1]. Mouth ulcers are very common, and they occur in association with many diseases and by different mechanisms, but usually there is no serious underlying cause. Common causes of mouth ulcers include nutritional deficiencies such as iron, vitamins especially B12 and C, poor oral hygiene, infections, stress, indigestion, mechanical injury, food allergies, hormonal imbalance, skin disease etc. Mouth ulcers, also known as aphthous ulcers, can be painful while eating, drinking or brushing teeth [2,3].

TYPES OF MOUTH ULCER: On the basis of ulcer size and number, mouth ulcer can be classified as minor, major, and herpetiform [4,5]

The main types of mouth ulcer are:

Minor ulcers. These are around 2-8mm in diameter and they usually clear up in 10 days to 2 weeks. Major ulcers: These are bigger and deeper, often with a raised or irregular border. This type of ulcer can take several weeks to heal and may leave a scar in the mouth.

Herpetiform ulcers: This type of ulcer is a cluster of dozens of smaller sores about the size of pinheads [6].

ULCERATIVE CONDITIONS

Mouth ulcers are very common and are mainly due to trauma such as from ill-fitting dentures, fractured teeth, or fillings. However, biopsy or other investigation should be done for patients with an ulcer of over three weeks duration to exclude malignancy or other serious conditions such as chronic infections [7].

Main systemic and iatrogenic causes of oral ulcers

Table no.1: Causes of mouth ulcer [8]

MICROBIAL DISEASE	MALIGNANT NEOPLASMS
<ul style="list-style-type: none"> • Herpetic stomatitis 	<p>Blood disorders</p> <ul style="list-style-type: none"> • Anaemia • Leukaemia • Neutropenia • Other white cell dyscrasias
<ul style="list-style-type: none"> • Chickenpox • Herpes zoster • Hand, foot and mouth diseases • Herpangina • Infectious mononucleosis • HIV infections • Acute necrotizing gingivitis • Tuberculosis • Syphilis • Fungal infections 	<p>Gastrointestinal disease</p> <ul style="list-style-type: none"> • Coeliac disease • Crohn's disease • Ulcerative colitis <p>Rheumatoid Diseases</p> <ul style="list-style-type: none"> • Lupus erythematosus

Cutaneous Disease	<ul style="list-style-type: none"> Behcet's syndrome
<ul style="list-style-type: none"> Lichen planus 	<ul style="list-style-type: none"> Sweet syndrome
<ul style="list-style-type: none"> Pemphigus 	<ul style="list-style-type: none"> Rieter's disease
<ul style="list-style-type: none"> Pempigoid 	Drugs
<ul style="list-style-type: none"> Erythema multiforme 	<ul style="list-style-type: none"> Cytotoxic agents
<ul style="list-style-type: none"> Dermatitis herpatiformis 	<ul style="list-style-type: none"> Nicorandil
<ul style="list-style-type: none"> Linear IgA disease 	<ul style="list-style-type: none"> Others
<ul style="list-style-type: none"> Epidermolysis bullosa 	Radiotherapy
<ul style="list-style-type: none"> Chronic ulcerative stomatitis 	
<ul style="list-style-type: none"> Other dermatoses 	

Factors responsible for the mouth ulcers

- Viral infections
- Toothpastes and mouthwashes that contain sodium lauryl sulfate
- Mechanical trauma
- Emotional stress / Psychic stress
- Nutritional deficiencies
- Allergies and sensitivities
- Hormonal changes
- Genetics
- Infectious agents (both bacterial and viral)
- Medical conditions[9]

Recurrent aphthous stomatitis (RAS; aphthae; canker sores)

RAS is a very common condition which typically starts in childhood or adolescence and presents with multiple recurrent small, round or ovoid ulcers with circumscribed margins, erythematous haloes, and yellow or grey floors [10]. RAS affects at least 20% of the population, with the highest frequency in higher socio-economic classes. Topical corticosteroids, antibiotics, and analgesics are

recommended for patients with RAS[11]. However, longer treatment and frequent exposure to these medications may cause fungal infection and drug resistance, which may lead to more severe adverse effects or even life-threatening complications. Nowadays natural herbal medicines as an alternative therapy for RAS have been widely used in many countries for decades [12].

Aetiopathogenesis

RAS may be a group of disorders of different pathogeneses. Sometimes cross-reacting antigens between the oral mucosa and microorganisms may be the initiators. Immune mechanisms appear for those person with a genetic predisposition to oral ulceration. There is a positive family history or genetic predisposition in about one third of patients with RAS. Immunological factors are also involved, with T helper cells along with some natural killer cells predominating in the RAS lesions . Cytotoxic cells then appear in these lesions and it is an evidence for an antibody

dependent cellular cytotoxicity (ADCC) reaction [13].

HERBAL REMEDIES FOR MOUTH ULCER

Phytogenic agents are traditionally used by herbalists and indigenous healers for the prevention and treatment of ulcer. This article reviews the anti-ulcer properties of the most commonly employed herbal medicines and their identified active constituents. Botanical compounds with anti-ulcer activity include flavonoids (i.e. quercetin, naringin, silymarin, anthocyanosides, sophoradin derivatives) saponins (i.e. from *Panax japonicus* and *Kochia scoparia*), tannins (i.e. from *Linderae umbellatae*), gums and mucilages (i.e. gum guar and myrrh). Among herbal drugs, liquorice, aloe gel and capsicum (chilli) have been used extensively. Ethnomedical systems employ several plant extracts for the treatment of ulcer [14].

Advantages of herbal medicines

- Herbal medicines have a long history of use and better patient tolerance and public acceptance.
- Medical plants have a renewable source, so that we can have sustainable supplies of cheaper medicines for the world's growing population.
- Because of the rich agro-climatic, cultural and ethnic biodiversity of developing countries like

India availability of medicinal plants is not a problem.

- The cultivation and processing of medicinal herbs are eco-friendly.
- Prolong and apparently uneventful use of herbal medicines is safe and efficacious [15].

Large numbers of medicinal plants and dietary nutrients have been shown to possess antiulcer activities such as Aloe, Terminalia chebula, Vetiveria zizanioides, Ginseng, Capsicum etc.

Aloe vera (L.): It belongs to the family Xanthorrhoeaceae. Reported chemical constituents in plant are amino acids, anthraquinones, enzymes, hormones, lignin, minerals, salicylic acid, saponins, sterols, sugars, vitamins. The mechanism involved in production of antiulcer activity of the plant is due to its antioxidant, anti-inflammatory, mucus secreting, cytoprotective or healing activities. Reported pharmacological activities of the plant are hypoglycemic, hypolipidemic, wound healing, immunomodulatory, antifungal, hepatoprotective. 1–3 tablespoons of aloe vera juice used as a mouthwash, then swallowed, three times daily for the treatment of mouth ulcer [16].

Capsicum annum L. is commonly known as Chilli pepper and it is most widely cultivated throughout the world. It belongs to the family Solanaceae. The fruit is proved to possess antiulcer activity,

antioxidant activity. The fruit and vegetable peel extracts of the plant exerted radical scavenging properties. Solasonine present in the plant is reported to have platelet aggregation inhibitory activity [17].

Carica papaya Linn. is commonly known as Papaya. It belongs to the family Caricaceae and well known for various medicinal properties. The fruits are reported to possess antiulcer activity. The seeds are reported to exert antimicrobial, anthelmintic, antiamoebic properties [18].

Curcuma longa L. is commonly known as Turmeric and also a household remedy for biliary disorders, anorexia, cough, diabetic wounds, hepatic disorders, rheumatism and sinusitis which belongs to the family Zingiberaceae. Evaluation of turmeric has been done for gastric and duodenal antiulcer activity in rats. Volatile oil of *Curcuma longa* possess anti-inflammatory and anti-arthritic activities. Water and fat soluble extracts of curcumin exhibited strong antioxidant activity comparable to vitamins C and E [19].

Glycyrrhizaglabra L., *Glycyrrhizaglabra L.*, is a sweet, moist, soothing, flavoring herb commonly known as Licorice belonging to the family Fabaceae. The plant is widely used as a medicine from the ancient medical history of ayurveda. The glycyrrhetic acid of Licorice showed potent in vitro activity against *H. pylori* indicating its antiulcer effect on peptic ulcers. The ether, chloroform, acetone root

extracts of the plant exerted significant antibacterial activity against *Bacillus subtilis*, *Staphylococcus aureus*, *Escherichia coli* and *Pseudomonas aeruginosa*. The active compound glabridin present in licorice reported anti-fungal activity against *Arthriniumsacchari* M001, *Chaetomiumfunicola* M002 and potent antioxidant activity towards LDL oxidation. Reported pharmacological activities of the plant are anti-inflammatory, anti-tussive, hepatoprotective, Estrogenic. Licorice (DGL) (from *Glycyrrhizaglabra*): Combine 200 mg of powdered DGL and 200 ml of warm water swished in the mouth and then spit out; continue each morning and evening for one week. [20]

Chamomile (Matricaria recutita):

Chamomile or chamomile is the common name for several daisy like plants of the family Asteraceae. Terpenoids and flavonoids present in dried chamomile flower is responsible for its medicinal properties. It is commonly used for its antioxidant, antimicrobial, antidepressant, anti-inflammatory, antidiarrheal, antiulcer, anti-carcinogenic activities. A diluted tincture or strong tea made from chamomile flowers can be swished in the mouth three to four times per day. [21]

Echinacea (Echinacea purpurea):

Echinacea purpurea is a perennial medicinal herb with anti-inflammatory and immune-stimulatory properties. It is also having various biological activities such as anti-

oxidant, anti-bacterial, anti-viral activities. 4 ml of liquid *echinacea* can be mixed with warm water and swished in the mouth for two to three minutes, then swallowed; this can be repeated three times per day. [22]

Punicagranatum: Pomegranate flowers of (*Punicagranatum* L.) from the *punicacea* family. This plant grows as a 2 to 5 m tall tree or shrub that is indigenous to Iran, Afghanistan, China and Indian subcontinent. Pomegranate flowers have been used as for oral and anal ulcers, intra-nasal ulcers, peptic ulcer, sores between toes and ear pain. It is used externally for the treatment of skin disease because of its astringent and antibacterial properties. [23]

Myrrh (*Commiphora molmol*): Myrrh is used for healing mouth sores because of the presence of tannins. Mix 200–300 mg of herbal extract or 4 ml of myrrh tincture with warm water and swish it in the mouth two to three times per day. [24]

CONCLUSION

From this review, it is clear that the medicinal plants play a vital role against various diseases. Various herbal plants and plants extracts have significant antiulcer activity in animal models. The extract is non-toxic even at relatively high concentrations. The antiulcer activity is probably due to the presence of flavonoids in all these plants.

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