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REVIEW ON HERBS USE IN TREATMENT OF MOUTH ULCER

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ABSTRACT:

Aphthous stomatitis, one of the most common ulcerative diseases, is primarily associated with the oral mucosa and is characterized by excruciatingly painful, recurring, single, or multiple ulcers in the upper throat and oral cavity. The condition is also known as canker sores, cold sores, recurrent aphthous stomatitis (RAS), and recurrent aphthous ulcers by both the general public and medical professionals (RAU). During the active disease phase, eating, drinking, and swallowing are all affected, lowering the quality of life. In most cases, analgesics, antibiotics, and topical steroid application are the only medications used to treat symptoms. These over-the-counter medications can have serious side effects on occasion. Herbal medicine is a safer and more effective alternative to pharmaceutical medications. The goal of this article is to examine the regularly use herbal remedies and determine how it is working to treat mouth ulcers.

KEYWORDS: Mouth Ulcer, Herbal Treatment, Recurrent Aphthous Ulcer (RAU), Herpetiform Ulcer.

1. INTRODUCTION OF MOUTH ULCER:

Ulcers have a variety of causes and are distinguished by tissue loss that affects both the epithelium and the underlying connective tissue. They are frequent in the oral mucosa and can be unpleasant.[1] Oral ulcers are a very frequent condition affecting the oral mucosa. Several risk factors have been identified, and mouth ulcers can be a symptom of a variety of systemic diseases, including inflammatory bowel disease.[2] A mucous membrane ulcer that develops. Usually on the inside of the cheeks or lips, these are painful round or oval sores that develop in the ma mouth ulcer, sometimes referred to as an oral ulcer or a mucosal ulcer, of the oral cavity. Mouth ulcers are fairly common and can be caused by a variety of diseases and mechanisms, although most of the time they have no major underlying causes. Nutritional deficiencies, such as those in iron and vitamins B12 and C in particular, poor dental hygiene, infections, stress, indigestion, mechanical injury, food allergies, hormonal imbalances, skin diseases, etc. are common causes of mouth ulcers, also known as aphthous ulcers, can cause discomfort when eating, drinking, or brushing one's teeth. [3] Aphthous ulcers are ulcers that develop on the mucous membranes of the body. Other names for them include aphthae, aphthosis, aphthous stomatitis, and canker sores. Aphthous ulcers are recurring round or oval sores or ulcers inside the mouth, such as under the tongue, where the skin is weakly attached to the underlying bone., such as under the tongue. They can also affect both male and female genitalia. Recurrent aphthous ulcers are largely a nuisance, but they can cause serious health problems in some people.[4]

1.1 TYPES OF MOUTH ULCERS:

Small, large, and herpetiform mouth ulcers can be classified according to their size and number.

MINOR ULCERS:

They typically disappear in 10 to 2 weeks and have a diameter of 2 to 8 mm.

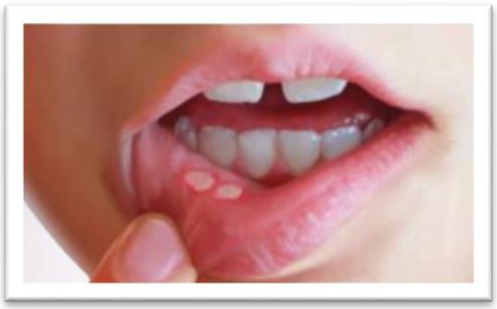

Figure1: Minor ulcer

MAJOR ULCERS:

They are larger and deeper, and frequently have an uneven or elevated border. This kind of mouth ulcer may require several weeks to heal and may leave a scar.

Figure 2: Major ulcer

HERPETIFORM ULCERS:

This sort of ulcer is a collection of numerous tiny, pinhead-sized ulcers.[5]

Figure 3: Herpetiform ulcer

FACTOR RESPONSIBLE FOR MOUTH ULCER:

GENETIC FACTOR:

Some people have a family history of mouth ulcers. Those with young children are connected to their families. Identical twins and mouth ulcer patients share a relationship where 30 to 40% of patients have a family history.[6]

PHYSICAL OR PSYCHOLOGICAL STRESS:

A survey of the general population was reported to be between 5 and 50 percent, and especially, 50 to 60 percent of students and military personnel were affected by daily stressful tasks like exams.[7]

NUTRITIONAL DEFICIENCY:

Insufficient intake of iron, folic acid, or vitamin B12 might result in mouth ulcers. However, importing only iron or vitamin supplements seldom addresses these shortages.[8]

TRAUMA:

Trauma is a significant risk factor for mouth ulcers. Self-biting, sharp foods, tooth cleaning, anesthetic injections, and dental treatment can all accidentally produce the mouth ulcer, which is still present today Unknown.[9]

FOOD ALLERGIES:

There are several foods that can induce mouth ulcers, including chocolate, coffee, peanuts, cereals, almonds, cheese, strawberries, tomatoes, wheat flour, and gluten-containing meals. 50% of patients improved when certain foods were removed from the diet.[10]

IMMUNE DISORDER:

Mouth ulcers can be caused by immune disorders, however, there is no evidence to support this. Ulceration is brought on by the lymphocytes' and monocytes' cytotoxic activity on the oral epithelium. However, it is unclear who exactly is to blame for the mouth ulcer. Inflammatory cells are misplaced in mucosal ulcers according to histologic analysis. Throughout the pre-ulcerative and healing phases, T-helper cells are important. Boost the neutrophil adhesion rate and Reduced levels and T-cell function in mucus result in decreased levels and the release of tumor necrosis.[11]

TOBACCO SMOKING:

Many studies have shown a connection between smoking and the occurrence of mouth ulcers. Also, you should have documentation regarding your use of tobacco and snuff. Individuals who have mouth ulcers do not smoke, and only 9% of mouth ulcer patients smoke actively, compared to 25% of control subjects. The mechanism by which cigarettes' inflammatory-reducing effects and purported benefits in treating mouth ulcers are unknown. [12]

DRUGS:

Such medications as Nicorandil, NSAIDs, Ibuprofen, and nicotine replacement therapy induce mouth ulcers.[13]

IMPORTANCE OF HERBAL MEDICINE:

The development of medicine and pharmacy shows that natural substances or medicines were initially employed by humans to treat a variety of illnesses or ailments. They work better when combined with plants, plant parts, animal parts, and even intense extracts of these. Pure chemical compounds that were extracted and used as prototypes for the creation of synthetic chemical compounds are what give these substances their activity; nevertheless, the problem with these new synthetic medications is that they become more potent as a result. Yet, the costs and side effects of these synthetic medications are disadvantages. Also, their use calls for medical supervision and the administration of these medications in a way that is more efficient than simply showing activity. Herbal medications have few or no major side effects, are easy to use, and need no processing.[14] Between 75–80% of the world's population, mostly in underdeveloped nations, still uses herbal medicine for primary healthcare. due to the misconception that herbal medications are inexpensive, readily available, and free of negative effects. Traditional medicine is currently used today and has been around for hundreds of years before modern medicine developed and expanded. This definition was just issued by the WHO. The most expensive form of indigenous medicine practiced by doctors is traditional medicine. Traditional preparation made up of organic material, minerals, and medicinal plants. In Indian, Chinese, Egyptian, Greek, Roman, and Syrian literature sources like the Rigveda, Atharvaveda, Charak Samhita, and Sushruta Samhita, traditional or herbal medicine is used.[15] Due to socioeconomic, cultural, and historical factors, herbal treatments have maintained their significance despite the availability of modern medications. [16] An herb is a plant or component of a plant that is prized for its therapeutic, enticing, or flavorful properties. Herbs can be thought of as biosynthetic chemical factories that create a variety of chemical substances. Herbal remedies or medications are made from fragments of plants or unpurified plant extracts that include a variety of ingredients that frequently interact synergistically.[17] Herbal medicine is important from a medical and financial standpoint. As the benefits of herbal medicines have grown, industrialised and developing nations place a higher priority on their safety, effectiveness, and quality. Patients are taking

herbal treatments more frequently because they avoid the common adverse effects of allopathic medications. It is not surprising that 1.42 billion people, or one-fourth of the world's population, rely on traditional medicines to cure a variety of illnesses. Throughout the beginning of time, medicinal plants have been a significant source of treatments for human illnesses. Because using biodegradable and environmentally friendly plant-based products to treat and prevent various ailments has recently received significant attention, it is known that the majority of the world's population has used traditional medicine.[18]

ADVANTAGES OF HERBAL MEDICINE:

1. medicines have a long history of use and better patient tolerance and public acceptance medical plants have a renewable source, allowing us to provide more affordable medicines to the world's rising population.

2. Because of the rich agro-climatic, cultural, and ethnic biodiversity of developing countries like India availability of medicinal plants is not a problem.

3. The cultivation and processing of medicinal herbs are eco-friendly.

4. Prolonged and apparently uneventful use of herbal medicines is safe and efficacious.

5. Some medicinal plants and dietary nutrients, such as Aloe, Terminalia chebula, Vetiveriaziziinoides, Ginseng, Capsicum, and others, have been shown to have antiulcer activity.[5]

HERBAL REMEDIES USE IN TREATMENT OF MOUTH ULCER:

Native healers and traditional herbalists have used phytogenic chemicals to treat and prevent ulcers. Some examples of plant compounds having anti-ulcer activity include flavonoids (including quercetin, naringin, silymarin, anthocyanosides, and derivatives of sophoradin), saponins (from Panax japonicas and Kochia scoparia), tannins (from Linderaeumbellatae), gums, and mucilages (i.e., gum guar and myrrh). Natural remedies such as licorice, aloe gel, and capsicum (chili) have all been used extensively. In ethnomedical traditions, a number of plant extracts are utilized to treat ulcers.[20]

1. **PSIDIUM GUAJAVA:**

commonly referred to as Peru, guava, or ambrud. The Myrtaceae plant Psidium guajava is a biological source. Flavonoids, triterpenoids, steroids, carbohydrates, oils, lipids, glycosides, alkaloids, tannins, and saponins are all components of chemical makeup. used as an antioxidant, has antibacterial, anti-inflammatory, and anti-cancer properties.[21] Several indigenous systems of medicine use the well-known traditional medicinal herb Psidium guajava. It is abundantly available all over India. Guava leaves have been used for centuries to treat a variety of illnesses, including rheumatism, diarrhea, diabetes mellitus, sore throats, coughs, and it also has antibacterial and anticancer activity.[22]

Figure 4: Psidium Guajava

2. **CURCUMIN:**

Turmeric is derived from the plant Curcuma longa, which belongs to the Zingiberaceae family. Turmeric's phytochemical components include diarylheptanoids, a class of curcuminoids that includes curcumin, desmethoxycurcumin, and bisdemethoxycurcumin.[22] The main curcuminoid and the most potent substance in turmeric are called curcumin. The medical effects of curcumin include analgesic, antioxidant, antiseptic, antibacterial, anti-inflammatory, and immunomodulatory, to name a few. Its effectiveness in treating radiation-

induced oral stomatitis and RAS has been proven in clinical investigations. Because it blocks the production of inflammatory prostaglandins, curcumin has anti-inflammatory properties. Researchers compared the efficacy of triamcinolone, which is similarly efficient in reducing pain and ulcer growth, with turmeric for the treatment of mild oral RAS. While triamcinolone cannot be advised for the continued treatment of mouth ulcers, the researchers discovered that turmeric can be used to treat mild RAS. The efficacy of curcumin and triamcinolone acetonide in randomized clinical research to treat mild RAS.[20]

Figure 5: Curcumin

3. LICORICE:

Glycyrrhiza glabra, a member of the Leguminoceae family, is well known for its expectorant and demulcent properties. Liquorice is also useful in reducing the pain and inflammation associated with stomatitis mouth ulcers. When applied to stomatitis mouth ulcers, licorice root extract can reduce ulcer size and speed healing. Liquorice is a hardy herb or undershrub that grows to a height of about 2m. Long, cylindrical, thick, and multi-branched roots. The root and rhizomes of the plant are used. Several components of licorice have been separated, including a water-soluble, physiologically active complex that amounts to 40-50 percent of total dry material weight. Triterpene saponins, flavonoids, polysaccharides, pectin, simple sugars, amino acids, mineral salts, and other substances make up this complex. The sweet taste of licorice root is attributed to glycyrrhizin, a triterpenoid compound. Glycyrrhizic acid is a natural saponin that consists of a hydrophilic component, two molecules of glucuronic acid, and a hydrophobic fragment, glycyrrhizic acid. The plant's flavonoids, which include liquidity, iso liquidity (a chalcone), and other compounds, give Liquorice its yellow color Glabridin and hispaglabridins A and B are isoflavones with strong antioxidant action, and both glabridin and glabrate exhibit estrogen-like activity. Clinically proven Pharmacological activities of Glycyrrhiza include anti-ulcer activity, anti-asthmatic activity, anti-diuretic activity, and anti-hepatotoxic activity. [23]

Figure 6: Licorice

4. ALOE VERA:

The leaves of Aloe barbedensis, also known as aloe vera and belonging to the Asphodelaceae family, are widely used in skincare products. They contain a lot of phytonutrients like amino acids, anthraquinones, enzymes, hormones, lignin, minerals, salicylic acid, saponins, sterols, sugars, and vitamins. The plant's antioxidant, anti-inflammatory, mucus-secreting, cytoprotective, or healing activities are involved in the production of antiulcer activity. The plant has been reported to have hypoglycemic, hypolipidemic, wound healing, immunomodulatory, antifungal, and hepatoprotective properties. It has traditionally been used to treat mouth ulcers.[24]

Figure 7: Aloe vera

5. MINT:

Mint, also known as Menth, is a member of the Lamiaceae (Labiatae) family and contains vitamins A, C, iron, calcium, and magnesium. Mint leaves are applied to mouth ulcers to provide a cooling effect, reduce pain from the ulcer, and provide fragrance in the mouth. Mint has antibacterial, antimicrobial, and fresh breath properties, as well as a cooling effect.[25]

Figure 8: Mint

6. TULSI:

It is known as Ocimum sanctum Linn and belongs to the Lamiaceae family (mint). Tulsi contains tannins and essential oil, as well as eugenol, methyl eugenol, alpha and beta-caryophyllene, methyl chavicol, linalool, and 1,8-cineole. The tulsi plant's leaves are used to make herbal medicine. Tulsi has antihelminthic, antipyretic, immune-stimulant, antiulcer, antimicrobial, and anti-inflammatory properties. Tulsi's anti-ulcer effect is due to cytoprotective rather than antisecretory activity. It has potent anti-ulcerogenic and ulcer-healing properties and could be an effective treatment for peptic ulcers. A study looked into Ocimum sanctum's anti-ulcerogenic and ulcer-healing properties. It was discovered to be effective as an antiulcer agent. Simply put, chewing on fresh leaves. [26]

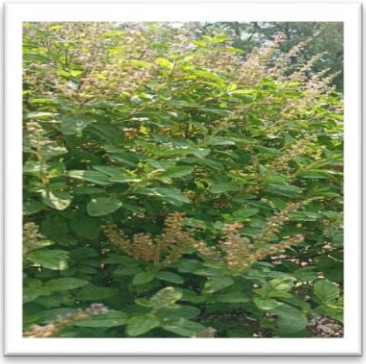

Figure 6: Tulsi

7. GINGER:

It is known as Ocimum sanctum Linn and belongs to the Lamiaceae family. Ginger's botanical name is Zingiber officinale, and it is a member of the Zingiberaceae family. Ginger's chemical constituents include gingerol, shogaol, and zingerone. Ginger is anti-cancer, anti-inflammatory, and antioxidant. [26] Ginger is a common herb used in traditional medicine. Some studies have also confirmed and demonstrated ginger's anti-inflammatory properties In their study, Haghpanah et al observed that a bioadhesive ginger film was capable of reducing pain in RAS patients, but the changes in ulcer diameter, inflamed halo, and pain intensity were not, and healing time were not significantly different from placebo. [27]

Figure 7: Ginger

8. JASMINE:

Jasmine Grandiflorum is a type of jasmine found primarily in Asia, Africa, Australia, and India. It belongs to the Oleaceae family. Jasmine Grandiflorum has healing properties in all of its components, and it has been used in traditional medicine for this purpose. This plant promotes the initial inflammation and epithelization phase, which speeds up wound healing due to its antioxidant properties. When the leaves of Jasmine Grandiflorum are extracted with alcohol, they have antioxidant and anti-ulcer properties. The leaves contain ascorbic acid, salicylic acid, and glucoside. [28]

Figure 8: Jasmine

9. AMLA OR EMBLICA:

Phyllanthus emblica Linn., sometimes known as the Indian gooseberry or Amla, or Emblica officinalis Gaertn. Amla, or Emblica officinalis, is a plant that is frequently used in Indian medicine (Ayurveda, Unani and Siddha). It is the first tree ever produced in the universe, so the mythology of ancient India holds. It belongs to the Euphorbiaceae family. The highest natural source of vitamin C is found there. The main constituents of Emblica officinalis are tannins, alkaloids, phenolic substances, amino acids, and carbohydrates. Its fruit juice has the highest concentration of vitamin C, gallic acid, ascorbic acid, elagic acid, chebulinic acid, quercetin, and other antioxidants.

Although all components of amla are helpful in the treatment of numerous ailments, the fruit is the most crucial component. A lot of people use amla fruit.[29]

Figure 9: Amla

10. GREEN TEA:

It is made from Camellia sinensis leaves. Green tea originated in China and has recently gained popularity around the world. It has been found in a variety of dietary supplements, beverages, and cosmetics. Green tea is high in polyphenols, flavonoids, catechins, enzymes, amino acids, phytochemicals, sterols, and minerals. Green tea contains four major polyphenols: epicatechin, epigallocatechin, epicatechin-3-gallate, and epigallocatechin-3-gallate, which have been shown to inhibit a number of processes related to cancer cell growth. As a result, it may play a role in the treatment of oral cancer. It is also anti-oxidant, anti-inflammatory, anti-viral, and anti-allergic. It comes in the form of dried leaves.[30]

Figure 10: Green Tea

CONCLUSION:

The review makes it evident that the naturally occurring components of medicinal herbs can effectively treat and prevent mouth ulcers, regardless of the etiology. The potential of these herbs to treat the sickness holistically is owing to their medicinal characteristics as well as their ability to improve immunity. If this freely accessible, natural, and secure resource is employed in dental operations, a "natural and green dental practice" has a lot of promise. The majority of study has concentrated on RAUs, but just a few have shown efficacy in oral mucositis patients undergoing chemotherapy and traumatic ulceration. Due to a lack of proper scientific investigations, we are currently unable to determine the best herb for healing mouth ulcers.

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