REVIEW ON HERBAL MOUTH ULCER GEL

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ABSRACT

The main purpose of this formulation of Guava leaves, Argemone Mexicana, Turmeric and Elachi flavor was to relieve pain and discomfort due to oral ulcers. As known there are different types of sores in the mouth that cause inflammation and pain. The most common oral ulcer are Local trauma & Aphthous Stomatitis. Now many over the counter medication are essential to staying in primary health care because of the positive response and the most effective treatment with the least amount of side effect. Herbal medicines are still the backbone of almost 70-80% of the world's population, especially in developing countries, in primary health care due to better adherence to the human body, cultural acceptance and less side effects. They are many found mainly in tropical and subtropical regions of India, the Americas and Africa, where they occur in various countries. The main ingredient Guava Leaves Powder, A Mexicana, Elaichi & Carbopol 934 as a gelling agent and propylene glycol as a co-solvent. Another ingredient Haldi act as an antiseptic. The formulated gel was tested for different parameters such as physicochemical parameters (pH, viscosity, distribution ability, etc.), inhibition area, etc. The gel is homogenous mixture that shows the pH 6.8. This herbal gel was stable at room tempreture protected from any germs and thus safe for use on mouth sores

KEYWORD*: Herbal gel, Mouth ulcer gel Guava leaves, Argemone Mexic.*

1.INTRODUCATION:

Numerous routes of administration employed so far in new drug delivery system, localized drug delivery to oral cavity tissues, have been examined for the treatment of periodontal diseases bacterial and oral mucosa is the "skin" that covers most of the mouth cavity, besides the teeth. It can be used for multitude of things. Its main purpose is to serve as a deterrence. It protects deeper tissues such as fat, muscle, nerves, and blood vessels from mechanical trauma such as chewing. Oral mucosal disease is the common disease that affect people.[1] Mouth ulcers are painful round or oral sores that develop in the mouth, usually on the inside of the cheeks or lips.[2]

Mouth ulcers are called recurrent aphthous stomatitis (RAS) aphthae, aphthosis, and canker sores. The world aphthous is derived from the Greek word "aphtha", which signifies the ulcer. Despite the redundancy, these oral sores are still referred to as aphthous ulcer in medical literature.[3]

RHS has an etiology that is either unknown or unclear. Idiopathic RAS, rather than being a singular entity, may be the presentation of several illnesses with quite distinct etiologies. Hematinic deficits and blood disorders, gastrointestinal disorders, immune deficiencies such as people with human immunodeficiency virus, neutropenia, and other condition may predispose to RAS.[4]

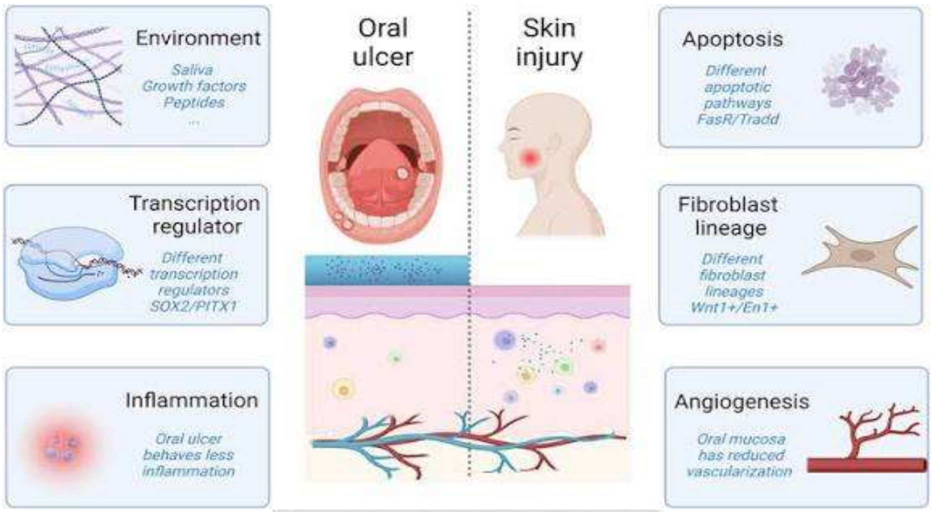

Fig.1. Mouth Ulcer

1.1 Definition of Herbal Mouth Ulcer Gel:

Mouth ulcer are painful sores in the moth, often caused by stress, minor injuries, or certain foods. They are daily life, affecting eating and speaking comfort.

1.2 OBEJECTIVES:

1. Provide Rapid Pain Relief.
   - Deliver noticeable soothing within minutes of application.
   - Reduce discomfort from burning, stinging, or irritation.
2. From a Protective Barrier
   - Create along-lasting film, over the ulcer to shield it from saliva, food, and friction.
   - Maintain adhesion for extended periods.
3. Accelerate Helling.
   - Include active that promote tissue regeneration and reduce inflammation. Demonstrate healing time compared to no treatment.
4. Ensure Safe and Gentle use
   - Alcohol-free, non-irritating formulation. Suitable for adults and children.
5. Offer Easy and Precise Application
   - Gel consistency allows targeted placement on the ulcer. packaging supports hygienic, controlled dispensing.
6. Improve User Comfort and Compliance.
   - Pleasant or neutral taste.
   - Non-gritty, smooth texture that interfere with speaking or eating.[5]

1.3 Advantages:

- Provides natural and gentle healing.
- Fewer side effects compared to synthetic gels.
- Contains antimicrobial and anti-inflammatory herbs.
- Soothes pain and burning quickly.
- Safe for long-term or repeated use.[6]

1.4 Disadvantages:

- May act slower than chemical-based gels.
- Effectiveness varies with herb quality.
- Shorter shelf life than synthetic products.
- Possible mild allergies to certain herbal ingredients.
- Not always strong enough for severe ulcers.[7]

2. Materials:

2.1 Materials:

2.1.1 Aloe vera gel:

fig.1.2. Aloe vera

Aloe vera gel is considered an effective and safe natural remedy for mouth ulcers, with studies indicating it can accelerate the healing process and reduce pain and inflammation.

Information on Aloe vera for Mouth Ulcers.

Aloe vera, extracted from the inner leaf pulp of the plant, contains numerous beneficial compound such as vitamins, minerals, enzymes, and polysaccharides (like acemannan). These components are responsible for its therapeutic properties.[8]

2.1.2 Glycyrrhiza glabra:

fig.1.3. lycyrrhiza glabra

lycyrrhiza glabra, or licorice, is used in mouth ulcer gels because its extracts have anti-inflammatory, antioxidant, and antimicrobial properties that promote healing. Clinical reviews show that G. glabra can significantly reduce the size of ulcers, alleviate pain, and speed up the healing time for recurrent aphthous stomatitis (canker sores). These gels are considered a promising natural alternative for oral care, although more extensive clinical trials are needed.[9]

2.1.3 Curcuma longa (turmeric):

Fig.1.4. Curcuma longa (turmeric)

Curcuma longa (turmeric) is used in mouth ulcer gels for its anti-inflammatory, antimicrobial, and wound-healing properties, supported by its active compound, curcumin. These gels work by reducing pain, promoting healing, and helping to manage bacterial growth. While studies show promising results for its use, more extensive clinical trials are needed to define optimal usage and compare its efficacy against conventional treatments.[10]

2.1.4 Calendula officinalis:

Fig.1.5. Calendula officinalis

Calendula officinalis is an excellent ingredient for herbal mouth ulcer gels because it has scientifically-backed anti-inflammatory, wound-healing, and antimicrobial properties. Research shows it can accelerate healing, promote tissue regeneration, and soothe oral tissues, making it effective for treating mouth ulcers and other oral conditions like gingivitis.[11]

2.1.5 Mentha piperita (peppermint):

Fig.1.6. Mentha piperita (peppermint)

Mentha piperita (peppermint) is included in herbal mouth ulcer gels due to its anti-inflammatory, antioxidant, and antimicrobial properties. Research shows it helps reduce inflammation and fights oral bacteria, making it an effective ingredient for treating mouth ulcers and other oral irritations. For a review, focus on studies that demonstrate its specific benefits, such as pain relief, reduced inflammation, and healing speed in the oral cavity, as well as any potential side effects of topical application like skin irritation.[12]

2.1.6 Neem:

Fig.1.7 Neem

Neem is used in herbal mouth ulcer gels due to its antibacterial, antifungal, and anti-inflammatory properties, which help fight the microbes that cause ulcers and promote healing. Studies show neem is effective at reducing plaque and bacteria, and has demonstrated good wound contraction in animal studies, making it a promising ingredient for oral gels. However, while initial research is promising, more human studies are needed to confirm its efficacy for mouth ulcers.[13]

2.1.7 Camellia sinensis (green tea):

Fig.1.8. Camellia sinensis (green tea)

Camellia sinensis (green tea) extract is a promising ingredient for herbal mouth ulcer gels due to its established antimicrobial, anti-inflammatory, and antioxidant properties. These properties help reduce pain, inflammation, and healing time associated with mouth ulcers.[14]

2.1.8 Gel Base / Polymers:

Carbopol 934 / 940 – Primary gelling agent HPMC (Hydroxypropyl methylcellulose) – Thickening & mucoadhesion Sodium CMC (Carboxymethylcellulose sodium) – Viscosity builder, stability.[15]

2.1.9 Humectants:

Glycerine – Moisturizer and smooth gel consistency Propylene glycol – Solvent and penetration enhancer.[16]

2.1.10 Neutralizing Agent:

Triethanolamine (TEA) – To adjust pH and form gel with Carbopol. [17]

CONCLUSION:

The present study aimed to formulate and evaluate a herbal mouth ulcer gel using safe, natural, and easily available plant-based ingredients. The successful development of this gel demonstrates the potential of herbal formulations as effective therapeutic alternatives to conventional allopathic treatments. The selected herbs—such as aloe vera, Neem, turmeric, and Glycerine—are well known for their anti-inflammatory, antimicrobial, analgesic, and wound-healing properties. Their incorporation into a gel base not only ensured uniform distribution of active components but also enhanced the therapeutic action by providing prolonged contact with the affected mucosal surface. The formulated herbal gel exhibited smooth texture, good spread ability, and desirable viscosity, all of which are essential for patient comfort and easy application. The pH of the gel remained within the acceptable range for oral mucosa, indicating its suitability and safety for intraoral use. Stability observations suggested that the formulation maintained its physical and chemical characteristics during the evaluation period, indicating that the selected base and preservatives were appropriate

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