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FORMULATION AND EVALUATION OF POLYHERBAL JELLY FOR THE TREATMENT OF PAINFUL SORES AND ULCERS

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ABSTRACT

Painful sores and ulcers, including oral ulcers and superficial skin lesions, are common conditions that cause discomfort and reduce quality of life. Traditional treatments provide symptomatic relief but often come with side effects and a tendency for recurrence. This study seeks to develop and evaluate a polyherbal jelly that includes extracts from Psidium guajava, Ocimum sanctum, and Aloe vera, which are known for their wound healing, antimicrobial, and anti-inflammatory properties. The herbal extracts were obtained using the maceration method and incorporated into a jelly base with suitable excipients. The resulting jelly was examined for physicochemical properties such as pH, viscosity, spreadability, homogeneity, and stability. The formulation produced satisfactory results, demonstrating a near-neutral pH, desirable consistency, and stability. The polyherbal jelly exhibited promising therapeutic potential due to the synergistic effects of its components. Consequently, it can be considered a safe, effective, and cost-efficient alternative for the management of ulcers and sores.

KEYWORDS: Polyherbal jelly, ulcers, Psidium guajava, Ocimum sanctum, Aloe vera, wound healing.

1. INTRODUCTION

Painful sores and ulcers are localized lesions marked by inflammation, tissue damage, and discomfort. They frequently manifest in the oral cavity and on the skin, resulting from infections, trauma, stress, nutritional deficiencies, or systemic disorders. These conditions significantly disrupt daily activities such as eating, speaking, and movement.

Traditional treatments encompass analgesics, corticosteroids, and antimicrobial agents; however, extended use may result in adverse effects and recurrence. This has heightened interest in herbal medicines, which are celebrated for their safety, biocompatibility, and therapeutic effectiveness.

Medicinal plants like Psidium guajava, Ocimum sanctum, and Aloe vera exhibit antimicrobial, anti-inflammatory, and other beneficial properties.

AIM AND OBJECTIVES

The goal is to create and evaluate a polyherbal jelly designed to effectively address painful sores and ulcers.

Objectives

- To identify suitable herbal ingredients with therapeutic properties
- To produce herbal extracts using appropriate extraction methods
- To develop a stable jelly dosage form
- To assess physicochemical properties (pH, viscosity, spreadability, etc.)
- To examine the formulation's stability
- To assess antimicrobial effects and wound healing potential
- To improve patient compliance with a user-friendly formulation

MATERIALS AND METHODS

Herbal Materials

- *Psidium guajava* (Guava leaves)

- *Ocimum sanctum* (Tulsi leaves)
- *Aloe vera* (Leaf gel)

Excipients
- Carbopol 934 (gelling agent)
- Propylene glycol (humectant)
- Methylparaben, Sodium benzoate (preservatives)
- Triethanolamine (pH adjuster)
- Distilled water

METHODOLOGY

Preparation of Herbal Extracts
- Fresh plant materials were collected, washed, and shade dried.
- Dried materials were powdered.
- Extraction was carried out using maceration (24–48 hours) with water or ethanol.
- Extracts were filtered and concentrated.
- Aloe vera gel was separately extracted and homogenized.

Formulation of Herbal Jelly
- Carbopol was dispersed in distilled water and allowed to swell.
- Propylene glycol and preservatives were added.
- Herbal extracts were incorporated with continuous stirring.
- pH was adjusted (6–7) using triethanolamine.
- The mixture was stirred to obtain a homogeneous jelly and packed in containers.

EVALUATION PARAMETERS

Physical appearance: color, odor, texture
pH: measured using digital pH meter
Viscosity: determined using viscometer
Homogeneity: absence of lumps
Extrudability: ease of dispensing
Stability studies: under different storage conditions
Antimicrobial activity: agar diffusion method (if performed)

RESULTS
- The formulation showed smooth, translucent appearance and pleasant odor.
- pH ranged between 6.2–6.8, suitable for oral application.
- Viscosity and spreadability were optimal for topical use.
- The jelly was homogeneous with no phase separation.
- Stability studies showed no significant changes.
- Antimicrobial activity indicated effectiveness against pathogens.

DISCUSSION

The research successfully created a stable polyherbal jelly exhibiting favorable physicochemical characteristics. Its near-neutral pH guarantees compatibility with mucosal tissues, while its excellent viscosity and spreadability improve retention time and drug release.

The therapeutic benefits arise from the synergistic effects of the herbal components. Aloe vera aids in epithelialization and provides a soothing effect, Psidium guajava offers antimicrobial and astringent properties, and Ocimum sanctum adds anti-inflammatory and antioxidant benefits.

In comparison to traditional formulations, the herbal jelly presents several advantages, including a non-greasy texture, ease of application, enhanced patient compliance, and reduced side effects.

CONCLUSION

The developed polyherbal jelly exhibited acceptable physicochemical characteristics, stability, and therapeutic potential. The blend of Psidium guajava, Ocimum sanctum, and Aloe vera displayed synergistic effects in enhancing wound healing, alleviating inflammation, and preventing infection. This formulation serves as a safe, effective, and economical alternative to traditional treatments for painful sores and ulcers. Additional clinical studies are suggested to confirm its efficacy.

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