A COMPERHENSIVE REVIEW ON: POLYHERBAL OINTMENT

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Abstract:

The foundation of the herbal medication business is the ethnomedical values of plants. In order to create herbal medications with minimal side effects, India has contributed its expertise in traditional system medicines (Ayurveda and Siddha). This review aimed to formulate a polyherbal ointment formulation using extracts of *Aloe vera, Azadirachta Indica ,Lycopersicon Esculentum* Various ratios of these extracts were optimized to assess stability, viscosity, pH, and skin irritation potential of the formulations. Ointment was formulated using ethanolic extracts of *Aloe vera, Azadirachta Indica ,Lycopersicon Esculentum* The study evaluated polyherbal ointments containing 3%, 5%, and 7% w/w concentrations of the The ointment consisting of extract of *Aloe vera, Azadirachta Indica ,Lycopersicon Esculentum* shows satisfactory physical properties and stability.

Keywords: Polyherbal Ointment, Cosmetic, *Aloe vera, Azadirachta Indica ,Lycopersicon Esculentum,*

INTRODUCTION

Herbal medicine also called botanical medicine or phyto medicinal refers to the use of any plant seeds barriers roots leaves bark or flower for medicinal purpose .long practiced outside of convention medicine herbalism is becoming more mainstream as up to date analysis and research shown their value in the treatment and prevention of diseases.[1] Ointment are greasy semisolid preparation and containing dissolved or dispersed medicament there are different type of ointment base like hydrocarbon bases usually consist of soft paraffin or its mixture with soft paraffin from a greasy film on skin inhibiting water loss thus hydrating skin because of their hydration effect on skin ointment are very effective in improving its hydration status absorption base these bases soak up water to form w/o emulsion while retaining their semisolid consistency.[2] The maximum amount of water that can be added to 100 gm of such a base at a given temperature is called as water number, World health organization estimated that 80 % of people worldwide rely on herbal medicines for some aspect of their primary health care for most herb contain a therapeutic effect is not known whole herb contain to produced decreased medicinal effect.[3] Along with other dosage form herbal drugs are also formulated in form of ointment an ointment is a viscous semisolid preparation used topically on a variety of body surface these include the skin and the mucus membrane of the eye vagina anus and nose.[4] An ointment may or may not be medicated ointment contain medicament dissolved suspended or emulsified in the base Ointment are used topically for several purpose e.g. as protectants antiseptic emollient. Ointment base are almost always anhydrous and generally contain one or more medicaments in suspension or solution or dispersion ointment bases may be hydrocarbon oleaginous etc.[5] In an earlier study medicinal plants has been reported to be very beneficial in wound care and promoting the rate of wound healing with minimal path discomfort and sharing to the patient.[6]

Cosmetics

The Drugs and Cosmetics Act defines cosmetics as items that are meant to be rubbed, poured, sprinkled, sprayed, inserted into, or otherwise applied to the skin. washing, beautifying,

increasing beauty, or changing the look of the human body or any component thereof. The cosmetic is not covered by the drug licence presumption.[7]

Need of Cosmetic

1. To enhance general appearance
2. Minimise skin defects
3. Psychological application
4. Social application
5. Clinical application
6. Skin defence against UV radiation, dust, and harsh weather
7. Cleansing effect
8. Emollient effect

Wound and Wound Healing

The skin envelops the entire body and is often described as the largest organ. It covers the external body surface, influencing the body's structure and thickness. The integumentary system, which includes the skin, serves a crucial role in shielding the body from various forms of damage.[8] Acting as a protective barrier, our skin defends against harmful chemicals, pollutants, UV radiation, weather elements, and microbes. Additionally, the sensory nerves within our skin enable us to perceive sensations such as heat, cold, and touch.[9]

Wound

Due to unsanitary conditions prevalent in these regions, wound infections represent a widespread health issue. Addressing the compromised structural integrity and diminished functional state of the skin requires an effective intervention plan[10]. Wounds are typically caused by physical, mechanical, or thermal factors that break or puncture the normal skin barrier.[11] In other words, a wound is any cut, bruise, or scrape that results in a disruption of the skin's outer layer, potentially affecting the underlying healthy tissue and its normal physiological functions.[12]

Wound Healing

Different types of epithelial and mesenchymal cells collaborate with cytokines, chemokines, and growth factors to facilitate the restoration of injured skin during the healing process. Smooth muscle cells, endothelial cells, fibroblasts, and dendritic epidermal T-cells produce

keratinocyte growth factor (KGF), which acts as a paracrine growth factor.[13] Studies have demonstrated that KGF directly stimulates mitogen-activated protein activation in vitro. The process of wound healing involves the coordinated activity of various components including the extracellular matrix, parenchymal cells, and blood.[14]

Ointments

Ointments: Pharmaceutical ointments are semi-solid preparations used externally on the skin and mucous membranes. They are applied directly to the affected area of the skin with or without a puncture.[15]

Types of ointments There are two main types of ointments: non-medicated and medicated. Medicated ointments, such as those used in ophthalmology, dermatology, vaginal applications, and nasal treatments, contain active ingredients intended to produce local or systemic effects.[16]

a. Dermatologic Ointments: These are applied evenly using light pressure with fingertips to create a thin layer. They are categorized into three subtypes diadermic, endodermic, and epidermic.[17]

b. Ophthalmic Ointments: These sterile formulations, using anhydrous bases, are designed for application inside the lower eyelids, for example, Sulfacetamide sodium ointment.[18]

c. Rectal Ointments: Intended for application in the anal canal or preanal area, these preparations typically include a mixture of polyethylene glycols, liquid and white paraffin, cetyl alcohol, and cetyl esters, such as benzocaine cream.[19]

d. Vaginal Ointments: These are specifically formulated for application in the vaginal area, examples include Monistat ointment and Gynazole.

e. Nasal Ointments: Applied locally to address mucosal infections of the nasal passages, these take advantage of the nasal lining's rich blood supply for effective drug absorption.

f. Non-medicated ointments lack therapeutic medication and serve primarily as emollients and protectors, such as Vaseline Jelly.

ALOE VERA

The Aloe Vera look like a cactus but it isn‘t.The botanical name of Aloe vera is Aloe Barbadensis miller. It belongs to Ashodelaceae (Liliaceae) family, an Inside the leaf is ajelly like substance. The properties of Aloe vera were well accepted from China to India. Today, Aloe vera is cultivated throughout the world. Terms including, the potted physician and nature‘s medicine chest, attempted to describe the significant historical uses of Aloe vera.[20] There are over 250 species of aloe grown around the world. However, only two species are grown today commercially, with Aloe Barbadensis Miller and Aloea borescens being the most popular. The Aloe plant is grown in warm tropical areas and cannot survive freezing temperatures. The Aloe vera plant has been known and used for centauries for its health, beauty, medicinal and skin care properties.

Three types of aloe are available in market depending upon the source plant viz.

i. Curacaoaloe: dark brown colored substance sourced from Aloevera
ii. Capealoe: greenish brown colored aloe sourced from Aloe feroxand
iii. Socotrinealoe: reddish blackcoloredaloesourced fromAloepeyriibaker.
iv. The original commercial use of theA loe plant was in the production of a latex substance called Aloin,a yellow sap used for many years as a laxative ingredient.

Fig: 1. Aloe Vera

1. Botanicalnames:Aloebarbadensismiller

2. Family:Liliaceae
3. Synonym:Aloebarbadensis,Aloeindica,Aloearborescens,Aloeferox
4. Commonnames :

Languages	**Names**
Nepali	Gwarpatha
Sanskrit	Ghritkumari
Hindi	Musabar
Marathi	Korphad
kannada	kathaligida

Azadirachta Indica

Azadirachta indica (A. indica) belongs to the botanic family Meliaceae, commonly known as Neem. It is used in traditional medicine as a source of many therapeutic agents. A. indica (leaf, bark and seeds) are known to contain antibacterial and antifungal.[21]

Fig: 2 . AzadirachtaIndica

Botanical name: -

Indica

Family: Mahogany

Synonyms: -margosa, arishth, , Melia Azadirachta, rosehip.

LANGUAGES	NAME
English	Paradisetree
Sanskrit	Aristha
Urdu	Neem
Hindi	Nim
Marathi	Kadu-limba

LycopersiconEsculentum:-

Solanum Lycopersicon, popularly known as tomato, originated in South America and now isused and cultivated in various parts of the world. This product is cultivated in warm climateregions, but can also be planted inside a greenhouse during winter. Tomatoes are full ofvitamins and antioxidants essential to a healthy body. Tomatoes can be consumed in several ways from salads up to sauces and easily harvested, making it the second most consumed vegetable of the American diet and has China being the main country that producer tomatoes in 31% of the total produce in the world.[22]

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Figure no.3 :Lycopersiconesculentum

Binomialname:-Solanumlycopersicum

Family:-Solanaceae

Synonyms:-Solanumlycopersicum L., Lycopersiconlycopersicum

Commonname:-

Language	Name
English	Tomato
Tamil	Takkali
Hindi	Tamatar
Kashmiri	Ruvangum

Materials and Instruments

1. Soxhlet Apparatus
2. Electronic weighing balance
3. pH meter
4. Brookfield viscometer (LVDV-60)
5. Heating mantle
6. Electronic waterbath

Extraction

Preparation of Ethanolic Extract of Polyherbs[23]

1. The polyherb leaves were carefully selected, washed to remove any impurities, and then dried in the shade.
2. The dried leaves were ground into a fine powder using a mechanical grinder.
3. The powder was sifted through a sieve no. 43 and stored in an airtight container for future use.
4. Approximately 100 grams of the powdered material were extracted using ethanol as the solvent through the hot extraction method with a Soxhlet apparatus.
5. The extraction process continued until the solvent in the thimble turned clear, at which point a few drops of the solvent were collected in a test tube for chemical testing.
6. After each extraction, the extract was evaporated to dryness using a rotary vacuum evaporator. Part of the extract was preserved for preliminary phytochemical screening to detect various plant constituents, and the remaining extract was used for the formulation of an ointment batch.

Figure 1. Extraction Process

Evaluation parameters

i. Colour: Faint green

ii. Odour: Pleasant

iii. Texture: Smooth

iv. State:Semisolid

2. Physical evaluation

The polyherbal cream formulated was evaluated for the following properties:

a) pH: According to the results, the pH of the formulation that is 6.7 were found to be nearer to skin pH so it can be safely used on

the skin.

b) Phase separation:Prepared cream was kept in a closed container at a temperature of 25-100 ℃ away from light. Then phase separation was checked for 24 h for 30 d. Any change in the phase separation was observed/checked. According to the results no phase separation was observed in the formulation.

c) Acid value :The acid value results of formulation was shown in table 4, and showed satisfactory values.

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