A Review on Polyherbal Hair Preparation

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Abstract:

Polyherbal formulations are gaining popularity due to their potent, efficacious, and safer attributes compared to conventional medicine. These formulations involve the extraction, concentration, fermentation, and distillation of herbs to create herbal preparations. Herbal medicines, with their natural origins and therapeutic properties, have been used for centuries for health and beautification purposes. The use of herbs is traced back to ancient texts like the Vedas, Charak Samhita, Sushruta Samhita, and the teachings of Maharishi Patanjali and Maharishi Baghbatta. Phytoconstituents in herbs demonstrate compatibility with the human body, influencing biological functions.

However, challenges persist in herbal formulation, including toxicological assessment, communication of uncertainty, pharmacological and clinical standards, pharmacovigilance, risk management, and clinical trials. Polyherbal formulations offer numerous benefits, including synergistic effects, a broad spectrum of action, reduced side effects, a holistic approach, customization, suitability for complex conditions, traditional wisdom, natural sources, preventive health, and research potential. Nevertheless, challenges such as complex interactions and herb quality underline the need for cautious use.

Hair health is a key focus for polyherbal formulations, and the abstract discusses the hair growth cycle, factors causing hair fall, and examples of herbs like lemon grass oil, onion oil, neem, curry leaves, and henna ,Castor oil, rich in ricinoleic acid, has been praised for promoting hair growth, improving scalp health, conditioning hair, and preventing breakage.

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1. INTRODUCTION TO POLYHERBAL CONCEPT:

Polyherbal formulation is the novel concept and emerging as they are potent, efficacious and safer as compared to conventional system of medicine.

The herbs when undergoes treatment by extraction, concentration, fermentation, distillation will forms herbal preparation. Herbal medicines are the traditional system of medicine as they are of natural occurrence and consisted of great therapeutic properties.

Herbs are also used since ancient times for beautification purpose in order to beautify,cleanse and radiantify the skin.

There are traces of herbal concept in Veda's and also in various literature works such as Charak Samhita & Sushruta Samhita and principles of Maharishi Patanjali and Maharishi Baghbatta in Curing various ailments in order to conserve health systems.[1,2]

Indian Traditional system of medicine such as ayurveda primarily practiced since 5000 years. Itconsists of herbal remedies and dietary standards in order to disease prevention and its treatment.It has been profoundly mentioned various literature evidences for memory loss,diabetic wounds,immune&liver ailments,skin disorder etc.

The Phytoconstituent which present in herbs have greater property in treating various disorders as they have better compatibility with human body system.

The WHO estimated about 80% of the people of some Asian and African Countries currently use herbal treatment for primary health aid.

Herbal remedies are found most prevalent among patients suffered from chronic disease such as cancer,diabetes,asthma,kidney disease,Major factors such as age,ethnicity,gender and allergies have co association with prevailing of herbal remedies.[3,4]

Polyherbal formulation always possess activity and significantly lesser or no side effects it is the integral part of healthcare system apart from healthcare herbs possess beautification of the body and formulating various cosmetics.

Herbal cosmetics are highly efficacious and primarily acceptable to avoid the adverse effects generally present in synthetic agents.

The presence of phytoconstituents influence biological functions of skin and provide essential nutrients which is necessary for the healthy hair or skin.

1.2 CHALLENGES IN HERBAL FORMULATION:[5,6,7]

- Objectively assessment of toxicological, epidemiological, verification of herbal component is the key challenge.
- Communication of uncertainty and evaluating multiple drug-drug interaction.
- Pharmacological & toxological and clinical standard documentation.
- Pharmacovigilance studies.
- Risk Management
- Constrainment with clinical trials.
- Standardization of herbal drug.
- Safety and efficacy assessment.

1.3 WHO GUIDELINES FOR QUALITY STANDARDIZED HERBAL FORMULATION:

a. Internal management control of herbal crude drug plant material preparation and finished product.

b. Shelf life and Stability assessment.

c. Assessment of toxicological studies and safety protocols.

d. Efficacy assessment by ethomedical information and evaluations of biological activity

The bioactive compounds should be standardized on the basis of active constituents or major phytocompounds along with chromatographic techniques (TLC, HPLC and GC).

1.4 BENEFITS OF POLYHERBAL FORMULATION:[8,9,10]

- Polyherbal formulation consist of multiple phytoconstituents which in together potentiates the effect.
- Polyherbal formulations have better patient acceptance and patient tolerance.
- Polyherbal agents have renewable source of cheaper medicine.
- They do not have any serious adverse drug reactions.
- They are highly potent and efficacious.
- Polyherbal formulations have better patient compliance as compare to synthetic drug.

- Novel drug development procedure has found prolongation usage of herbal therapy can cure serious ailments.
- They are economical as compared to synthetic formulation.
- This is the environmental friendly approach.

Polyherbal formulations have been used for centuries in traditional medicine systems like Ayurveda, Traditional Chinese Medicine, and others. There are other several potential benefits associated with polyherbal formulations:

Synergistic Effects: Different herbs can have complementary actions and interactions when combined. Some herbs might enhance the effects of others, leading to a more potent and effective overall formulation.

Broad Spectrum of Action: Polyherbal formulations can address multiple aspects of health simultaneously. For example, a formulation might contain herbs that target inflammation, immune support, and digestion all at once.

Reduced Side Effects: In some cases, combining herbs can mitigate the potential side effects of a single herb. This might allow for lower doses of each individual herb, reducing the risk of adverse reactions.

Holistic Approach: Many traditional medicine systems are based on a holistic approach to health. Polyherbal formulations often reflect this philosophy by addressing the interconnectedness of various bodily systems.[11,12]

Customization: Herbalists and practitioners can tailor polyherbal formulations to suit the specific needs of an individual. This personalization can lead to more targeted and effective treatments.

Complex Conditions: Polyherbal formulations can be particularly useful for complex or multifaceted health conditions where a single herb might not be sufficient to address all the underlying factors.

Tradition and Cultural Use: Polyherbal formulations often draw from traditional knowledge and practices that have been refined over generations. They can carry the wisdom of centuries of use in various cultures.

Natural Source: Herbal remedies come from natural sources, which can be appealing to individuals who prefer natural or plant-based alternatives to synthetic medications.[13,14]

Preventive Health: Some polyherbal formulations are designed to promote overall well-being and prevent health issues. They might contain herbs known for their antioxidant, adaptogenic, or immune-boosting properties.

Research Potential: While traditional use provides a strong foundation, polyherbal formulations also present opportunities for modern scientific research. Studies can explore the efficacy, safety, and mechanisms of action of these formulations.

while polyherbal formulations can offer various benefits, they also come with challenges. The interactions between multiple herbs can be complex, and the quality and purity of the herbs used in the formulation can significantly affect its effectiveness[15,16]

Fig. 1 Hair Growth Cycle

1.4 HAIR GROWTH CYCLE:[17,18,19,20]

Hair is regarded as filament of protein located in dermis strand of hair is composed of cortex, medulla & cuticle. It also provides some necessary function in mammals such as thermoregulation protection of eyes and skin from sunrays, dirt and dust apart from this they also possess sensory function also.

Hair cycle consists of following phases:

A) Anagen Phase

B) Catagen Phase

C) Telogen Phase

D) Exogen Phase

1.4.1 Anagen phase:

This phase is also known as growing phase in which hair begins to growing from follicular root dermal papilla's stem cells multiplies to generate hair protein &fibers. The span of this phase lasts about 3-5years depending upon intrinsic and extrinsic factors and the length of hair is based or determined in this phase.

1.4.2 Catagen Phase:

This phase is also known as Transitional or Involution phase of hair growth. Catagen onset is marked as mitotic cessation in matrix cells and coordinated by apoptosis melanin founds in nearby dermis area and engulfed under macrophages. The span of this phase lasts about 2-3weeks in general. During this phase hair follicle renovelise itself by shrinks to one-sixth of its length.

1.4.3 Telogen Phase:

This phase is known as Resting Stage as the catagen phases ends the strand of hair becomes club and resting dormant phase. This phase lasts for 3-5 months and emerges a new hair from root and finely pushes up the old club hair epithelial cells column connecting the bulb and the papilla shrinks further in moving the papilla upward at the bulb of the follicle. This is the period between follicular regression completion and on setting of next anagen phase.

1.4.4 Exogen Phase:

This is the lastest phase when the strand of hair totally detaches from the scalp and shedded it off. It is the hair noticed falling out from comb or brush. Naturally About fifty-hundred hair strands undergoes exogen phase daily.

1.5 FACTORS CAUSING HAIR FALL:[21,22,23,24]

- Fungal Infection
- Stress

- Hyperthyroidism
- Chemotherapy & Radiotherapy
- Overdose of Vitamin A
- Hormonal Disorder
- Lifestyle
- Prolong usage or overdosing of steroid
- Genetic

Polyherbal ingredients are often chosen for their potential benefits in promoting hair health, preventing hair loss, and improving overall hair quality. It's important to note that the effectiveness of these preparations can vary and may not have strong scientific evidence to support their claims. Here are some examples of polyherbal hair preparations:[25,26,27]

Trichup Hair Fall Control Herbal Hair Oil: This oil contains a blend of herbs like Bhringraj, Amalaki, Neem, and more, which are believed to strengthen hair follicles and reduce hair fall.

Himalaya Herbals Anti-Hair Fall Hair Oil: This hair oil includes Bhringraj, Amalaki, Thistles, Fenugreek, and other herbs known for their hair-strengthening properties.

Khadi Natural Amla and Bhringraj Hair Cleanser: A shampoo formulation that combines Amla (Indian Gooseberry) and Bhringraj for promoting hair growth and maintaining hair health.

Biotique Bio Bhringraj Fresh Growth Therapeutic Oil: This oil contains Bhringraj, Amla, Tesu, Mulethi, and other herbs to promote hair growth and prevent premature graying.

Patanjali Kesh Kanti Hair Oil: A blend of Amla, Bhringraj, Brahmi, Neem, and other herbs known in Ayurveda for their benefits in maintaining hair health.

Aloe Veda Herbal Hair Oil - Dandruff Control: Contains ingredients like Neem, Tea Tree Oil, and Brahmi to address dandruff and scalp issues.

Dabur Vatika Enriched Coconut Hair Oil: This hair oil incorporates herbs like Henna, Amla, Lemon, and Neem for overall hair nourishment and health.

Forest Essentials Hair Vitalizer Bhringraj: A serum containing Bhringraj and other hair-nourishing herbs to improve hair texture and quality.

VLCC Ayurveda Natural Hair Fall Control Oil: This oil includes ingredients like Amla, Brahmi, Bhringraj, and Jatamansi to reduce hair fall and strengthen hair.

Jovees Amla and Bael Revitalizing Hair Tonic: This tonic contains Amla, Bael, Jatamansi, and other herbs to revitalize the scalp and promote hair growth.

Kama Ayurveda Bringadi Intensive Hair Treatment Oil: Combines ingredients like Bhringraj, Amla, Sesame Oil, and Indigo to promote hair growth and address scalp issues.

Patanjali Kesh Kanti Milk Protein Hair Cleanser: Contains ingredients like Aloe Vera, Amla, Bhringraj, and milk protein to nourish and cleanse the hair

Some constituent used in herbal formulation of hair:

4.1 LEMON GRASS OIL[28,29]

Fig.2: Lemon grass oil

BIOLOGICAL SOURCE: It is obtained from aerial parts and leaves of the plant of *Cymbopogan plexous*, *Cymbopogan citratus*; Family: Graminae.

CHEMICAL CONSTITUENTS:

- Citral

- Geraniol, linalool
- Limonene
- Alpha & beta penine
- Triacontene

USE:

- Dry scalp
- Antioxidant
- Antibacterial
- Antifungal
- Combats unpleasant odour

4.2 ONION OIL

Fig.3: Onion oil

BIOLOGICAL SOURCE: It is obtained from the fresh bulb of the plant of *Allium cepa*; Family: Alliaceae.[30,31]

CHEMICAL CONSTITUENTS:

- Quercetin
- Flavonoids
- Thiosulfonates
- Allyl sulfides
- Cycloallin
- Selenium

USE:

- Promotes hair growth
- Prevent & treat baldness
- Prevent breakage & split ends
- Prevents oxidation of hair
- Prevent thinning of hair
- It also maintain Ph of hair
- Prevents prematuring graying of hair[28]

4.3 NEEM

Fig.4: Neem Oil

BIOLOGICAL SOURCE: The drug is obtained from whole parts of the plant known as *Azadirachta indica* Family: Meliaceae.[32,33,34]

CHEMICAL CONSTITUENTS:

- Azadiractin
- Maliantrion
- Nimbidinine
- Nimbendiol

USE:

- Give relief from dry skin.
- Neem also protect from pimples.

- Give moisturizing effect to the skin.
- It is antibacterial and antifungal property.
- Neem possess anti-inflammatory property that help to reduce acne.

4.4 CURRY LEAVES:

Fig.5: Curry leaf

BIOLOGICAL SOURCE: The drug is derived from the fresh leaf of the plant known as *Murraya koinigii* Family: Rutaceae.[35,36,37]

CHEMICAL CONSTITUENTS:

- Mahanine
- Mahanimbine
- Cinnamaldehyde
- Carp

USE:

- Terminate bacteria
- Used in calcium deficiency
- Anti-inflammatory action
- Eliminate free radical
- They have profound effect on inflamed skin, boils of first degree burn.[30]

4.5 HENNA

Fig.6: Henna

BIOLOGICAL SOURCE: It is obtained from fresh or dried leaves of the plant *Lawsonia inermis*; Family: Lythraceae.[38]

CHEMICAL CONSTITUENTS:

- Lawsone
- Hennotannic acid
- Anthraquinones
- Fraxetin
- Coumarins

USE:

- Natural colouring agent
- Prevents dandruff
- Mediates oil secretion
- Hair damage repair
- Eliminates flakiness of scalp
-

4.6: Castor oil

Castor oil is a vegetable oil extracted from the seeds of the castor plant (Ricinus communis). It has been used for a variety of purposes for centuries, including medicinal, cosmetic, and industrial applications. In the context of hair care, castor oil is often

recommended for its potential benefits for hair growth, scalp health, and hair conditioning. Here are some of its properties and uses related to hair care:

Hair Growth: Castor oil contains ricinoleic acid, a fatty acid that is believed to have potential benefits for promoting hair growth. It is thought to stimulate circulation in the scalp, which can encourage hair follicles to grow.

Scalp Health: Castor oil's antimicrobial and anti-inflammatory properties may help improve scalp health by reducing dandruff, fungal infections, and other scalp issues.

Hair Conditioning: Castor oil is thick and viscous, making it a popular choice for deep conditioning treatments. It can help moisturize and soften dry, brittle hair, making it more manageable ansd reducing frizz.

Hair Strength: The nutrients present in castor oil, such as omega-6 and omega-9 fatty acids, can help strengthen hair and prevent breakage.

Split Ends: Regular use of castor oil on the hair ends can help reduce the appearance of split ends by providing moisture and protection.

Thickness and Texture: Some people claim that using castor oil regularly can lead to thicker hair over time. However, this effect can be influenced by genetics and other factors.

Eyebrow and Eyelash Growth: Castor oil is also popularly used to encourage the growth of thicker eyebrows and longer eyelashes.

Application: Apply the oil to your scalp and hair, massaging it gently. You can leave it on for a few hours or overnight before washing.[39]

Conclusion:

Herbal medicines, derived from natural sources, have been utilized for centuries for their therapeutic properties and are now being explored for their beautification benefits as well. Ayurveda, practiced for thousands of years in India, emphasizes herbal remedies and dietary standards to prevent and treat various ailments.

Polyherbal formulations offer a range of benefits, including synergistic effects, broad-spectrum action, reduced side effects, and a holistic approach to health. However, challenges in herbal formulation include toxicological assessment, drug interactions, standardization, safety protocols, and efficacy documentation. WHO guidelines emphasize internal management control, stability assessment, toxicological studies, and biological activity evaluations. The hair growth cycle consists of distinct phases, from anagen (growth) to exogen (shedding), and is influenced by various factors like genetics,

hormonal imbalance, and lifestyle. Polyherbal ingredients promote hair health, prevent hair fall, and enhance hair quality.

While polyherbal formulations offer promising benefits, their effectiveness can vary, and scientific evidence supporting their claims may be limited. Nonetheless, the rich tradition of polyherbal formulations, combined with modern research, presents a compelling avenue for exploring the potential of herbal treatments in maintaining overall well-being.

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