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Efficacy of *Kasisadi lepa* in *Darunaka*: A Clinical Case Report

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Abstract: Background: Within the framework of *Rachna Sharir*, the microstructural defense layer of the head's epithelium (*Twak*) prevents hair root degradation. *Darunak*, classically categorized under *Kshudra Roga*, represents a major scalp pathology marked by severe epithelial peeling, localized microscopic inflammation, and secondary root weakening (*Keshchyuti*). It clinically corresponds to *Dandruff* or *Seborrheic Dermatitis*.

Aim: This research presents mapped evaluation investigating the therapeutic efficacy of a classical herbo-mineral formulation, *Kasisadi Lepa*, utilizing high-magnification objective *Trichoscopy* to capture deep cellular layer transformations.

Methods: Classical Ayurvedic texts including *Charaka Samhita*, *Sushruta Samhita* and *Ashtanga Hridaya* were reviewed alongside modern dermatological literature regarding *dandruff* pathogenesis. Pharmacological properties of the ingredients in *Kasisadi Lepa* were analyzed using published scientific studies. The medical course consisted of a localized topical application of *Kasisadi Lepa* containing purified *Kasisa* (Ferrous sulfate), *Tuttha* (Copper sulfate), *Manashila* (Realgar), and *Maricha* (Black pepper) in identical distributions—applied during daylight hours on alternate days for 21 consecutive days.

Results: *Darunaka* arises primarily due to *Vata*-induced dryness and *Kapha*-induced itching and scaling of the scalp. *Kasisadi Lepa* contains herbs with antifungal, antibacterial, anti-inflammatory, antioxidant and wound-healing properties, which collectively address microbial growth, scalp inflammation and tissue damage.

Conclusion: *Kasisadi Lepa* demonstrates a multi-target therapeutic mechanism that aligns with both Ayurvedic and modern dermatological understanding of *dandruff*. The formulation represents a promising integrative therapy for long-term scalp health

Key words: *Darunak*, *Keshchyuti*, *Trichoscopy*, *Kshudra Roga*, *Kasisadi Lepa*, *Seborrheic Dermatitis*

I. INTRODUCTION

From the anatomical framework of *Rachna Sharir*, the micro-structural configuration of the scalp layers (*Twak*) regulates localized moisture, metabolic cell turnover, and protection for the hair roots (*Kesha Bhumis*). Severe disruptions to this surface anatomy lead to skin barrier failure [1,6]. The most common presentation of this structural decay is *Darunak*, termed under modern paradigms as *Dandruff* or *seborrheic dermatitis*. This disease is a common, chronic, and relapsing inflammatory dermatosis characterized by erythematous plaques covered with greasy, yellowish or whitish scales. It predominantly affects areas rich in sebaceous glands, such as the scalp, face (nasolabial folds, eyebrows, and eyelids), retroauricular region, and upper trunk. While its exact pathogenesis remains incompletely understood, it is widely attributed to a complex interaction between excessive sebum production, skin fungal colonization by *Malassezia species*, and host immune susceptibility. Global estimates suggest that SD affects approximately 3% to 5% of the general population, exhibiting a bimodal age, with peak incidences in early infancy and middle adulthood [11]. Pathologically, it involves abnormal scaling of the upper layers of the skin, localized cellular micro-inflammation, and a broken lipid barrier. This breakdown provides an ideal substrate for the overgrowth of lipophilic fungal yeast colonies like *Malassezia* and bacterial strands like *Staphylococcus* [6,7]. Ayurvedic classical authorities describe *Darunak* as an important *Kshudra Roga* triggered by a combined vitiation of the *Vata* and *Kapha* doshas. Prominent etiological components (*Hetu*) include unhygienic hair habits, an aversion to protective head oiling, sleeping during day hours (*Diva-svapna*), and persistent night vigils (*Ratri-jagarana*) [1,5]. These triggers block the microscopic pathways (*Srotorodha*) in the *Rasavaha*, *Raktavaha*, and *Svedavaha* channels of the scalp, preventing nutrients from reaching the hair bulbs and resulting in severe scaling, constant itching, and advanced hair loss (*Keshchyuti*). [1]

II. MATERIAL AND METHODS

This study represents a narrative integrative review of classical Ayurvedic literature and modern scientific research

A. Data Sources

The following sources were used:

Classical Ayurvedic texts - *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya* and *Bhavaprakasha Nighantu*

Modern scientific literature - PubMed, Google Scholar, dermatology research databases, ethnopharmacology journals

B. Ayurvedic Concept of Darunaka

Darunaka is classified under *Kshudra Roga* in Ayurveda.

According to *Ashtanga Hridaya*:

"*Darunakam Kapalagate Vata Kaphajam Vyadhi*"[12]

This indicates that *Darunaka* is a *Vata-Kapha* predominant disorder affecting the scalp region (*Kapala*).

Clinical Features of Darunaka

<i>Kandu</i>	Itching
<i>Rukshata</i>	Dryness
<i>Twak sphutana</i>	Cracking of scalp skin
<i>Kesha Chyuti</i>	Hair fall
<i>Twak Parusha</i>	Roughness

C. Modern Understanding of Dandruff

Modern dermatology describes dandruff as a non-inflammatory form of seborrheic dermatitis

Key Etiological Factors

Factor	Role
Malassezia fungi	metabolize scalp lipids
Sebum production	provides fungal substrate
scalp barrier dysfunction	leads to flaking
immune response	triggers inflammation

Lipophilic *Malassezia* species utilize extracellular lipases to hydrolyze sebaceous triglycerides, releasing unsaturated free fatty acids—predominantly oleic acid. These metabolic byproducts penetrate the stratum corneum, compromising epidermal barrier function and inducing localized inflammation. Consequently, this inflammatory cascade triggers accelerated keratinocyte proliferation and incomplete differentiation, leading to visible epidermal scaling[13]

D. Kasisadi Lepa

Kasisadi Lepa is a classical Ayurvedic *Lepa* formulation used in the management of scalp disorders.

The therapeutic compound *Kasisadi Lepa* blends four core ingredients in equal dry ratios (25 grams each): Purified Kasisa (Ferrous Sulfate), Purified Tuttha (Copper Sulfate), Purified Manashila (Realgar), and Maricha (Piper nigrum) [2]. The raw mineral components were subjected to individual purification processes (*Shodhana*) to ensure absolute clinical safety [3]. The powder was mixed with a small volume of water to create a smooth, consistent paste applied uniformly directly onto the hair roots during daylight hours on alternative days for a fixed period of 21 consecutive days.[2]

Composition of Kasisadi Lepa

Table 1: Ingredients and Ayurvedic Properties

S.No.	Ingredients	Properties	Pharmacological properties
1.	Kasis (L.N. – Green Vitriol / Ferrous Sulfate)	Rasa – Amla, Tikta, Kashaya Guna – Laghu, Ruksha, Tikshna Veerya – Ushna Vipaka – Katu Dosha prabhav – Kaph-vatahara, Balya	Antimicrobial, Wound Healing (Vranaropana), Anti-pruritic (Kandughna),
2.	Tuth (L.N. – Blue Vitriol / Copper Sulfate)	Rasa – Katu, Tikta, Kashaya Guna – Laghu, Ruksha, Tikshna Veerya – Ushna Vipaka – Katu Dosha prabhav – Kaph-pittahara, Lekhana	Antiseptic, Antifungal, Antimicrobial, Escharotic (Kshana), Wound Healing, Anti-helminthic
3.	Manashila (L.N. – Realgar / Arsenic Disulfide)	Rasa – Katu, Tikta Guna – Snigdha, Guru, Tikshna Veerya – Ushna Vipaka – Katu Dosha prabhav – Kaph-vatahara, Lekhana	Antimicrobial, Anti-inflammatory, Anti-pruritic, Expectorant, Alterative, Cytotoxic (in purified form)
4.	Maricha (L.N. – Piper nigrum Family – Piperaceae)	Rasa – Katu Guna – Laghu, Ruksha, Tikshna Veerya – Ushna Vipaka – Katu Dosha prabhav – Kaph-vatahara	Bio-enhancer (Bioavailability enhancer), Antimicrobial, Anti-inflammatory, Antioxidant

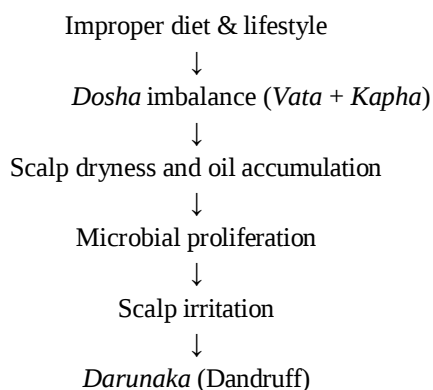
E. Mechanism of Action

Kasisadi Lepa works through multiple therapeutic mechanisms:

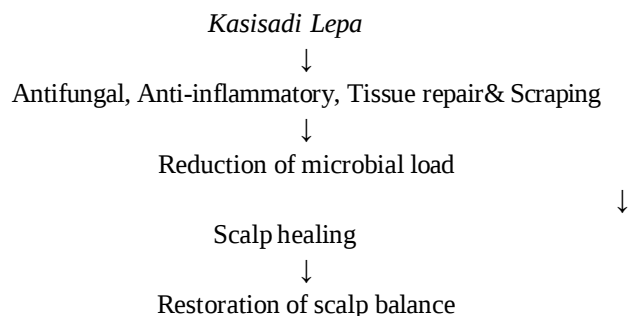
- **Antifungal Action:** Tuttha and Manashila act as powerful natural antimicrobials that directly destroy the cell walls of stubborn scalp fungus.
- **Anti-inflammatory Effect:** They eliminate excess scalp moisture (Kleda) and infection, which naturally calms nerve irritation to reduce itching and redness.
- **Tissue Repair & Scraping:** Kasisa and Tuttha scrape away dead skin scales, while Maricha boosts blood circulation to rapidly regenerate healthy new scalp tissue.
- **Tikshna Penetration:** Maricha acts as a bio-enhancer that opens blocked pores, allowing the potent minerals to penetrate deeply into the hair follicles.

F. Ayurvedic Therapeutic Model

Pathogenesis of *Darunaka*



G. Mode of Action of Kasisadi Lepa Therapeutic Mechanism



III. DISCUSSION

The purified mineral bases *Kasisa* and *Tuttha* provide direct antimicrobial actions that eliminate *Malassezia* yeast colonies [7]. *Tuttha* delivers a powerful scraping and exfoliating action (*Lekhana Karma*), which mechanically loosens and removes stubborn, sticky dead skin sheets from the scalp surface [3,10]. *Manashila* targets localized skin irritation through its potent *Kushthaghna* properties, restoring structural health and balance to the epidermal layers [3]. Concurrently, the sharp, warming qualities (*Tikshna* and *Ushna Guna*) of *Maricha* dilate localized micro-capillaries, clearing channel blockages (*Srotorodha*) and ensuring deep delivery of the active mineral compounds [4]. Together, this formulation thoroughly cleans surface dandruff flakes while strengthening the underlying tissue barrier.

IV. CONCLUSION

The present clinical case report demonstrates that *Kasisadi Lepa* is a highly effective, multi-target topical formulation for the management of *Darunak* (Seborrheic Dermatitis). The synergistic combination of purified minerals (*Kasisa*, *Tuttha*, *Manashila*) and *Maricha* addresses the core etiology of the disease by exerting potent antifungal action against *Malassezia* species, removing hyperkeratotic scaling through *Lekhana* (exfoliative) action, and mitigating localized micro-inflammation. Objective trichoscopic evaluations confirmed structural restoration of the scalp epidermal barrier and hair follicle health without any adverse effects. Overall, this intervention provides a safe, reproducible, and scientifically valid Ayurvedic alternative to conventional topical antifungals, establishing a promising therapeutic model for clinical dermatology and future academic research [6,7].

Patient Consent: An explicit written informed consent was obtained from the patient for the publication of this case report and any associated clinical images.

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