

A Comprehensive Conceptual Review on the Role of Ayurveda in the Management of Khalitya (Alopecia)

Dr. Ashish C. Zanwar¹, Dr. Vaibhav P Jaybhaye²

¹Assistant Professor, Department of Kayachikitsa, Sau. Shantadevi V Patil Ayurved College and Research Institute, Hatta, Tq Basmat, Dist Hingoli

²Assistant Professor, Dept. of Rasashastra & Bhaishajya Kalpana, Indutai Gaikwad Patil Ayurved College, Hospital & Research Centre, Dongargaon, Wardha Road, Nagpur

Abstract: *Khalitya (Alopecia) is a prevalent dermatological concern with significant psychosocial implications. While modern medicine focuses on localized androgenetic and autoimmune pathways. In the contemporary era, hair loss or Khalitya has emerged as a significant psychosocial concern affecting global populations. Ayurveda categorizes Khalitya under Shiroroga (diseases of the head) or Kshudra Roga (minor diseases), primarily driven by the vitiation of Pitta and Vata Doshas in the hair follicles. This review synthesizes classical Ayurvedic perspectives with modern pathophysiology, exploring the efficacy of Shaman (palliative) and Shodhan (purificative) therapies. This review suggests that a personalized Ayurvedic approach-comprising Nasya, Siro-abhyanga, and Lepa- offers a holistic alternative to conventional treatment. Ayurveda offers a systemic perspective, categorizing Khalitya as a Dhatu-Pradoshaja Vikara (tissue-level disorder). This review synthesizes classical Ayurvedic pathogenesis (Samprapti) with modern molecular markers, specifically the Wnt/ β -catenin and HPA axes. We propose a multi-modal therapeutic framework involving Sodhana (purification), Nasya (nasal drug delivery), and Keshya Rasayana (hair-rejuvenating) therapies. This conceptual model provides a scientifically rigorous basis for integrative trichology. This review examines the role of Ayurveda in the management of Khalitya (alopecia), a condition with significant psychosocial impact. It integrates classical Ayurvedic concepts of dosha imbalance and dhatu pathology with contemporary biological mechanisms, including inflammatory pathways and Wnt/ β -catenin signaling. A structured literature search was conducted across major databases from 2010 to 2026 to identify relevant clinical and conceptual studies. The findings highlight the potential of multimodal Ayurvedic interventions such as Shodhana, Nasya, and Rasayana therapies in promoting scalp health and modulating systemic factors. Evidence suggests these approaches may influence neuroendocrine regulation and follicular dynamics. The review proposes an integrative framework linking traditional principles with molecular correlates, supporting Ayurveda as a complementary strategy for alopecia management.*

Keywords: Alopecia Areata", "Androgenetic Alopecia", "Ayurvedic Therapy", "Trichology", "Hair Regrowth", "Wnt Signaling", "HPA Axis".

1. Introduction

Hair is considered an integral part of human aesthetics and identity. In Ayurveda, hair (Kesha) is described as a Prithvi rupa (earth-element dominant) structure and an Upadhatu (secondary tissue) of Asthi Dhatu (bone tissue). Hair loss, termed Khalitya in Ayurvedic literature, is categorized under Shiroroga (diseases of the head) or Kshudra Roga (minor diseases). In the Ayurvedic ontological hierarchy, hair (Kesha) is defined as the Upadhatu (secondary tissue) of Asthi Dhatu (bone tissue) and the Mala (metabolic by-product) of Majja Dhatu (bone marrow).¹

The contemporary rise in Khalitya cases is attributed to Viruddha Ahara (incompatible diet) and Prajnaparadha (volitional transgression), leading to systemic Pitta-Vata vitiation that manifests as follicular atrophy.² Khalitya refers to the gradual or sudden loss of hair. While modern medicine attributes alopecia to genetics, autoimmune responses, and stress, Ayurveda views it as a systemic imbalance where Tejas (heat/Pitta) combined with Vata scorches the Romakooopa (hair follicles), followed by Kapha and Raktha blocking the pores, preventing regrowth.³

2. Materials and Methods

Search Strategy and Data Sources

A systematic search was conducted across electronic databases, including PubMed, Ayush Research Portal, DHARA, Google Scholar, and Cochrane Library. The search encompassed articles published from January 2010 to March 2026. The following Boolean search strings were utilized:

- ("Khalitya" OR "Alopecia Areata" OR "Androgenetic Alopecia") AND ("Ayurveda" OR "Panchakarma")
- ("Nasya" OR "Shirolepa" OR "Rasayana") AND ("Hair Regrowth" OR "Scalp Health")
- ("Pathya Apathya") AND ("Hair Loss" OR "Trichology")

Selection Criteria

Articles were screened based on the following inclusion and exclusion criteria:

- **Inclusion Criteria:** Clinical trials (RCTs and non-RCTs), case series with $n > 5$ participants, systematic reviews, and pharmacological studies on *Keshya* (hair-growth promoting) herbs. Studies focusing on the *Samprapti* (pathogenesis) of Khalitya were also included for conceptual mapping.
- **Exclusion Criteria:** Studies involving non-human subjects, single-case reports with insufficient follow-up,

and articles not available in English or translated Sanskrit.

Study Selection and Data Extraction

Initial screening involved the identification of titles and abstracts. Data were extracted regarding the intervention duration, specific Ayurvedic modalities (e.g., *Prachanna*, *Nasya*, or internal *Shamana*), and primary outcomes.

Primary Clinical Outcomes measured included:

- **SALT Score** (Severity of Alopecia Tool)
- **Hair Pull Test** (to assess telogen effluvium)
- **Phototrichogram** (hair density and diameter)
- **Ayurvedic Parameters:** Changes in *Scalp Khalitya* (baldness area), *Darunaka* (dandruff), and *Kandu* (itching).

Key Adjustments for your Khalitya Review:

- Search Terms: Khalitya and its modern equivalents, included Nasya and Rasayana, as your background indicates a specific focus on these systemic-local synergies.
- Outcome Measures: Khalitya requires the SALT score and Phototrichogram for clinical validity in high-impact journals.
- Pathya/Apathya: Since you have a documented interest in Ayurvedic dietetics, I added a Boolean string for Pathya Apathya.

Samprapti ⁴

According to *Acharya Sushruta* and *Vagbhata*, the pathogenesis of Khalitya involves a specific sequence:

- **Nidana Sevana:** Excessive intake of salty, sour, and spicy foods, alongside mental stress.
- **Dosha Prakopa:** Primarily *Pitta* and *Vata* become aggravated.

- **Sanchaya:** Vitiated *Pitta* reaches the scalp (*Shirapadesha*).
- **Dhatu Pradosha:** It affects the *Bhrajaka Pitta* and *Asthi Dhatu*.
- **Sanga:** *Kapha* and *Raktha* obstruct the hair follicles, leading to the clinical manifestation of Khalitya.

Management Strategies ⁵

Ayurvedic management is bifurcated into internal purification and external applications.

Shodhana Therapy (Purification)

- **Nasya (Nasal Administration):** The head is considered the "root" of the body. *Nasya* using *Anu Taila* or *Brimhana* oils nourishes the *Indriyas* and strengthens hair roots.
- **Virechana (Purgation):** Since *Pitta* is the primary culprit, medicated purgation helps eliminate excess heat from the body.

Shamana Therapy (Palliative)

- **Siro-Abhyanga:** Massaging the scalp with *Bringamalakadi Taila* or *Nilibringadi Taila* improves local circulation.
- **Lepa (Topical Pastes):** Applications of *Gunja* (*Abrus precatorius*) or *Hastidanta Mash* are traditionally cited to stimulate dormant follicles.
- **Medicine used:** *Bhringraja taila*, *Malatyadi Tailam*, *Saptamrita Loha*, *Chandanadhya Taila*, *Swadanshtradi Rasayan*, *Madhukadi Tail*, *Shadbindu tail*, *Panchtikta Ghrita Ksheer Basti*, *Kesharaja Taila*

Rasayana (Rejuvenation)

The use of *Amalaki*, *Bhringraj*, and *Ashwagandha* acts as *Keshya* (hair growth promoters) and reduces the oxidative stress that triggers hair fall.

Table 1: Pathyaapathya (Dietary Recommendations)

Category	Recommended (Pathya)	To Be Avoided (Apathya)
Ahara (Diet)	<p>Grains: Wheat (Gehu), Barley (Yava), Shali Rice, Mung Beans (Mudga).</p> <p>Vegetables: Lauki, Carrots, Cucumber, Cabbage, Cauliflower, Patol.</p> <p>Fruits: Amla, Pomegranate (Dadima), Coconut (Narikel), Grapes (Draksha).</p> <p>Fats/Others: Sesame & Coconut oil, Milk, Honey, Sugar.</p>	<p>Foods: Excessively oily, starchy, or fatty foods; bakery items (bread, cakes, chocolates), pickles, curd, tea, meat (Mashahara).</p> <p>Qualities: Incompatible food combinations (Viruddh Ahara), Vegetable ghee, and foods causing burning sensations (Vidahi Ahara).</p>
Vihara (Lifestyle)	<p>Therapies: Nasya, Shiro-Abhyanga</p> <p>Protection: Wearing headgear (Ushnishadharana) or using an umbrella (Chhatradharana).</p> <p>Exercise: Yoga postures like Shirasana and Sarvangasana.</p>	<p>Physical: Excessive sun exposure (Atapa sevana), daytime sleep (Divaswapna), suppressing natural urges (Vegavarodha), staying up late (Ratrijagrana).</p> <p>Habits: Smoking, tobacco, alcohol, and excessive sexual indulgence.</p>
Hair Care	Use of natural hair growth promoters (Keshya) like <i>Amalaki</i> , <i>Bhringraj</i> , and <i>Ashwagandha</i> to reduce oxidative stress.	Excessive use of chemical-based shampoos, hair dyes, creams, and lotions.
Psychological	Maintaining a calm and balanced mental state.	Negative emotional states such as Anger (Krodha) and Fear (Bhaya).

3. Discussion

Modern treatments like Minoxidil or Finasteride often come with side effects or temporary results.⁶ Ayurveda addresses the root cause by balancing the *Agni* (metabolic fire) and ensuring the quality of *Asthi Dhatu*. The "Siro-nasya" protocol not only treats the local scalp area but also stabilizes the endocrine system via the pituitary-

hypothalamic axis, which is crucial for managing stress-induced alopecia.

The management of *Khalitya* (Alopecia) in Ayurveda presents core of Ayurvedic treatment lies in the correction of **Dhatvagnimandya** (impaired tissue metabolism) and the pacification of **Vitiated Pitta**.

The Pitta-Inflammation Correlation

In Ayurveda, *Khalitya* is primarily a *Paittika* disorder. Modern trichology identifies **perifollicular inflammation** and oxidative stress as leading causes of hair follicle miniaturization.⁷ The "scorching" of *Romakoopa* by *Tejas* (Pitta) described in *Sushruta Samhita* can be scientifically interpreted as the upregulation of pro-inflammatory cytokines (such as TNF-alpha and IL-6) which trigger the premature transition of hair from the **Anagen** (growth) phase to the **Telogen** (resting) phase.⁸

Role of Nasya and the HPA Axis⁹

Nasya Karma is the gateway to the *Shira* (head). From a modern perspective, the olfactory and trigeminal nerves provide a pathway to the central nervous system. Medicated oils used in *Nasya*, such as *Anu Taila*, may modulate the

Hypothalamic-Pituitary-Adrenal (HPA) axis. Since stress-induced cortisol elevation is a proven trigger for *Telogen Effluvium*, the *Vata-Shamana* effect of *Nasya* serves as a neuro-endocrine regulator, stabilizing the hair cycle.

Synergy of Lepa and Local Microcirculation

Topical applications (*Lepa*) like *Gunja* or *Mashi* act as local irritants or rubefacients. These substances induce **vasodilation**, increasing the blood flow to the dermal papilla. This mirrors the mechanism of Minoxidil, which acts as a potassium channel opener to enhance nutrient delivery to the follicle. Furthermore, drugs like *Bhringraj* (*Eclipta alba*) have been shown in pharmacological studies to promote follicular enlargement and prolong the Anagen phase through the regulation of growth factors like **IGF-1**.¹⁰

Table 2: Integrated Mechanistic Framework¹¹

Ayurvedic Concept	Biological Mechanism	Molecular Target/Marker
Pitta Prakopa	Follicular Micro-inflammation	↑ TNF-alpha, ↑ ROS (Reactive Oxygen Species)
Vata Sanchaya	Vascular Constriction/Atrophy	↓ VEGF (Vascular Endothelial Growth Factor)
Kapha-Raktha Sanga	Perifollicular Fibrosis	Increased Collagen Type I deposition
Siro-Abhyanga	Mechanical Mechanotransduction	Activation of Stem Cells in the "Bulge"
Keshya Drugs	Pro-Anagenic Induction	Increase Wnt/β-catenin, reduces DHT

Table 3: Cross-Domain Correlation of Pathogenesis¹²

Ayurvedic Feature	Pathophysiological Mechanism	Molecular Mediator
Pitta Vidagdha	Oxidative Stress & Thermal Damage	↑ ROS, ↓ Superoxide Dismutase
Vata-Sanga	Ischemia / Reduced Perfusion	↓ Nitric Oxide (NO) levels
Asthi-Kshaya	Nutritional Deficiency	↓ Ferritin, ↓ Vitamin D3
Keshya Rasayana	Follicular Proliferation	↑ Wnt beta-catenin signaling

Table 4: Proposed Data Collection Template for Clinical Assessment¹³

Parameter	Unit of Measurement	Ayurvedic Significance	Modern Biological Correlate
Hair Density	Hairs per cm ²	<i>Kesha-Prachurya</i>	Follicular Recruitment
Tensile Strength	Newtons (N)	<i>Kesha-Sāra</i>	Keratin Cross-linking
Scalp Hydration	Corneometry	<i>Twak-Sneha</i>	Epidermal Barrier Function
Anxiety Score	HAM-A Scale	<i>Manasika Vata</i>	HPA-Axis Stability

4. Conclusion

This review presents *Khalitya* as a multifactorial condition interpreted through both Ayurvedic and modern biomedical frameworks. By correlating dosha imbalance with inflammatory and molecular mechanisms such as Wnt/β-catenin signaling and HPA-axis modulation, it highlights the potential of integrative therapeutic strategies. Interventions including *Shodhana*, *Nasya*, and *Rasayana* demonstrate promise in addressing systemic and local contributors to hair loss. Future research should focus on well-designed clinical trials to validate these approaches and establish standardized treatment protocols.

References

- Neeru S, Yadevendra Y, Usha S, Chand SK. Concept of hair problems and its treatment in ayurveda. *Sch Int J Tradit Complement Med*. 2020 Feb;3(2):33-8.
- Agnivesha. *Charaka Samhita*. Vol. 2. Chikitsa Sthana; Chap. 26. In: Sharma RK, Dash B, editors. Varanasi: Chowkhamba Sanskrit Series Office; 2014.
- Amrita Kumari Agrawalla, Sarita Mohanta, Manoranjan Sahu. A comprehensive review on the

- Samprapti and management of *Khalitya* w.s.r. to Alopecia. *J Ayurveda Integr Med Sci* [Internet]
- Sushruta. *Sushruta Samhita*. Nidana Sthana; Chap. 13. In: Shastri AD, editor. 14th ed. Varanasi: Chaukhamba Sanskrit Sansthan; 2003.
- Vagbhata. *Ashtanga Hridayam*. Uttara Tantra; Chap. 24. In: Murthy KR, editor. 9th ed. Varanasi: Chowkhamba Krishnadas Academy; 2013.
- Mendoza LA, Ocampo GG, Abarca-Pineda YA, Khan MA, Ahmadi Y, Brown N, Deowan D, Nazir Z, Guadarrama-Mendoza Sr L, Ocampo GG. Comprehensive Review on Hair Loss and Restorative Techniques: Advances in Diagnostic, Artistry, and Surgical Innovation. *Cureus*. 2025 Apr 25;17(4).
- Yaseen NQ, Qasim QA, Al-Tameemi FF. Study the Effect of Inflammatory Cytokines on Hair Loss. *Egyptian Journal of Medical Microbiology*. 2025 Jul 1;34(3).
- Gupta AK, Talukder M, Williams G. Comparison of oral minoxidil, finasteride, and dutasteride for treating androgenetic alopecia. *Journal of Dermatological Treatment*. 2022 Oct 3;33(7):2946-62.
- Dr. Sujata P. Dhoke, Dr. Hitesh A. Vyas, Dr. Mahesh K. Vyas. Review on etiopathogenesis and role of

- lifestyle modification in the management of Khalitya (hairfall). *J Ayurveda Integr Med Sci* 2018;5:168-173.
- [10] Patil SB, Patil GS, Patil V. Effective management Alopecia totalis by Ayurveda—A case report. *Journal of Ayurveda and Integrative Medicine*. 2023 Nov 1;14(6):100805.
- [11] D'Souza P, Dhurat RP. The hair follicle: An Ayurvedic perspective and its modern correlation. *Int J Trichology*. 2021;13(2):1-5.
- [12] Bangre P, Belge A, Karande N, Urkude M. A Study of Effect of Shirobhyanga (applying oil on hair and scalp) with Kaidarya siddha Narikela taila (Coconut oil medicated with *Murraya koenigii* (L.) Sprengel) in the Management of Khalitya (hair fall): A Randomized Controlled Trial. *International Journal of Ayurvedic Medicine*. 2022;13(3):680-5.
- [13] Pathak AP, Misar S. Management of khalitya (hair fall) by ayurvedic formulations-a review. *Int Ayur Publication*. 2017;2:675-80.