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AYURVEDIC COSMETOLOGY APPROACHES TO PREMATURE HAIR GREYING (AKĀLAPĀLITYA): A LITERATURE REVIEW OF HERBAL AND LIFESTYLE INTERVENTIONS

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ABSTRACT

Premature canities, or premature hair greying (PHG) (Akālapālitya in Ayurveda), is a cosmetological and psychosocial problem that occurs before the normal senile stage. Commonly used treatment options include the use of chemical dyes, which give transient results and could have harmful side effects. Ayurveda, by the concept of Akālapālitya, has its own natural methods of cosmetology by way of herbal formulations, rejuvenative measures, and lifestyle modifications. The aim of this study is to evaluate Ayurvedic cosmetology approaches to PHG by synthesizing evidence from different peer-reviewed journals using PubMed, Scopus, and Google Scholar (2010–2025). The collected data were analyzed according to diet & Rasāyana, lifestyle interventions, herbal interventions, and clinical & pharmacological evidence. PHG is a pitta-dosha-dominated disorder, according to Ayurveda, and its primary causes include heredity, Ahitha Aahara (poor food), disregard for Dinacharya (daily routine) and Ritucharya (seasonal routine), living in a polluted environment, and dealing with a stressful work culture. Herbal agents in the form of Bhringaraja (*Eclipta alba*), Yaṣṭimadhu (*Glycyrrhiza glabra*), etc., and polyherbal oils, for example, Nilibhringadi Taila, have been found to possess antioxidant, hair melanogenic-stimulating, and hair follicle proliferative

properties. Rasāyana formulations promote systemic rejuvenation, whereas lifestyle practices such as dinacharya, nasya karma, yoga, and Sadvritta, combined with stress management, support prevention. Proof points show that Ayurveda cosmetology gives safe and multi-pronged ways for PHG control through herbal formulations, lifestyle interventions, and rejuvenative therapies. Yet, strong multicenter randomized tests and set formulas are needed to check clinical effect and help blend with modern cosmetology. Ayurveda's holistic paradigm offers a sustainable, natural alternative for managing premature hair graying.

Keywords: Premature hair greying, Akālapālitya, Ayurveda cosmetology

INTRODUCTION

One's health, quality of life, and self-esteem can all be impacted by premature greying of the hair. (Choukikar, Katkar and Acharya, 2023). Regardless of gender or color, canities, achromotrichia, or hair graying are all signs of chronological aging. Only when graying happens before the ages of 20 for white people, 25 for Asians, and 30 for Africans is hair considered prematurely gray. (Seemaja, 2025). Canities are mostly diagnosed clinically. If there is no family history,

certain tests, such as serum vitamin B12, folic acid, and thyroid profile, may be performed on people with extremely early onset. (Pandhi and Khanna, 2013). Even while study on the microscopic, biochemical, and molecular alterations occurring within hair follicles and shafts has grown in recent years, the precise process causing PHG remains unclear. (Kaur, Kaur and Bala, 2019). According to the Ayurvedic medical system, excess ushna guna of pitta is the cause of PHG before the Taruna stage. Pitta dosha and deohoshma (body heat) penetrate the scalp area. As a result, hair turns gray before the typical senile degradation phase, known as Akalapalitya. (Takale and Nikam, no date). Sushruta explains Palitya in Kshudra Rogaadhikara, Vagbhatta in Shiro Kapalagata Roga, and Charaka under Urdhwa Jatrugata Roga. As per Ayurveda ageing is accelerated by improper Aahara (diet), not adhering to the principles of Dinacharya (daily routine) and Ritucharya (seasonal routine), living in a polluted environment, and stressful work culture. (Neeru et al., 2020).

Demand for treatment modalities has grown along with awareness; however, there are limited and inadequate options available. There are currently a number of topical medicines on the market that comprise phytic acid, amino acids, peptides, acetyl hexapeptide-1, melitane, capixyl, pea proteins, etc. (Sinha et al., 2017). Hair coloring is the use of chemicals that have the capacity to eliminate, substitute, and/or mask the natural pigments found in the hair follicle. The use of these chemicals may result in a number of adverse effects, including cutaneous pigmentation, hair fragility, temporary skin irritation and hypersensitivity, and unanticipated alterations in hair color. (Makwana et al., 2023). Ayurveda offers a variety of treatment options for Kesha Vikaras (hair diseases), emphasizing the relationship between hair, Prakriti (body constitution), Dinacharya (daily practices), and

Sadvritta (ethical conduct). These range from external applications (Bahya Lepa) to head oil therapies (Murdhni Taila) (Godbole, Sharanya CB and Gururaj J, 2025). It is a customizable and successful method in cosmetology because of its capacity to promote scalp health, rejuvenate the skin, and increase overall hair quality. (Kumara, Wadimuna and Lakshmi, no date). The aim of this study is to critically evaluate evidence regarding Ayurvedic herbal and lifestyle interventions for PHG, exploring their efficacy, mechanisms, and research gaps. The study's objectives include reviewing herbal interventions, analyzing lifestyle interventions that Ayurveda recommends for managing and preventing PHG, and assessing the clinical and pharmacological evidence that supports Ayurvedic cosmetology interventions for PHG.

MATERIALS & METHODS

A structured literature search was conducted across peer-reviewed journals using PubMed, Scopus, ResearchGate, and Google Scholar (January 2010 – August 2025). Search terms included “premature hair greying,” “Akalapalitya,” and “Ayurveda cosmetology”. A total of 62 studies were identified, 48 screened, and 20 studies included in this review. The collected data were analyzed according to diet & Rasāyana, lifestyle interventions, herbal interventions, and clinical & pharmacological evidence.

RESULTS

1. Diet & Rasāyana

Avoid excessive consumption of Katu (pungent taste), Amla (sour taste), Lavana (salty taste), Tikshna (powerful or intense action or reaction), Ushna (property of a substance which is responsible for promoting sweating), Vidahi (substance that causes burning, thirst, belching, and difficulty digesting), Laghu characteristic of a material which promotes lightness and

reduces physical bulk and weight), Tila taila (sesame oil), Kulaththa (horse gram), Sarshapa (mustard seed), Pinyaka (The leftover material from seeds that have been crushed and processed to extract oil), Harita shaka (Green vegetables), Matsya (Fish), Aavika (Sheep meat), Ajamans (Goat Meat), Takra (Buttermilk), Dadhi (Curd), Kurchika (Solid part of milk boiled with buttermilk or curd), Amlaphala (Sour fruits) and Suravikara (Sour gruel), which cause the vitiation of pitta & subsequently lead to Akalapālitya. Rasayana (Rejuvenation) refers to a collection of medications and practices that slow down and reverse the aging process. Hair disorders are prevented by internal applications of medicines such as Amalaki Rasayana, Bhrungarajadi Rasayana, Siddhamakaradhwaja, Vasantakusumakara, Naradiya Lakshmvilas Rasa, Narasimha Rasayana, etc.

2. Lifestyle Interventions

Avoid raatri jagarana (nighttime awakening), ati atapa sevan (extended exposure to sunlight), ati rajo sevan (dust inhalation), dhuma sevan (smoking), dushit vayu sevan (inhalation of polluted air), ati vyayama (excessive exercise), and upvasa (fasting), which have been recognized as potential causes of palitya. Avoid several psychological factors such as Krodha (anger), shoka (grief), bhaya (fear), and maansika shrama (mental stress). They have been proved to cause palitya and other paittik disorders by aggravating the pitta dosha. Yoga practices (Shirshasana, Pranayama, Dhyana), Moordha Tail (scalp oiling), Siro Abhyanga (massage of head), Keshha Prasadhana (hair combing), Nasya Karma (the procedure of putting nasal drops into the nostrils with Anu tail), Snana (bathing), Dhoom Pana (medicinal smoke), and Kshoura Karma (hair cutting and proper care of head hair) should be done regularly.

Palliative external & internal medicament measures like Shiro dhara (pouring oil on head), Shiro basti (oil is kept on head with an apparatus), Shiro pichu (cloth dipped in oil kept on head), Shiro abhyanga (oil massage to head), and Shiro lepa (application of medicated paste overhead) aid in a quick recovery.

3. Herbal Interventions

Siro abhyang with yogas like Mahanilla taila, Bhringraj taila, Irimedadi taila, etc. Nasya Karma with yogas like Vidarigandha taila, Sahacharadi taila, Bhringaraj taila, Prapondaraki taila, Nimba taila, Sheilu taila, Maha nila taila, etc. Krishna taila is used in conjunction with prapaundarikadi taila nasya to prevent graying of the hair and to maintain its strength and shine through nourishment. Shiro dhara, Shiro pichu, and Shiro basti are performed using yogas such as Bhringraj taila and Neeli taila, etc. Shiro lepa with yogas like Priyaladi yoga, Tiladi yoga, and Palithar yoga, etc. Triphala, Nili vruksha, Bhringaraja, and Loha Bhasma mixed with sheep's urine should be applied, which makes the hair black. Loha Bhasma, Bhrungaraja Swarasa, Triphala, and Krishna mruttika (black mud) should all be ground into fine powder. Mixed with Ikshu rasa and kept for one month and then used. Hair can be washed with a decoction or shampoo made of herbs such as henna, Bringraj, Jatamansi, Triphala, and Bhrami. Bhringraja, Yastimadhu, Amalaki, Tila, Vibhitaki, Nimba, Gambhari, Mayaphala, Beejaka, and Nirgundi, which we can utilize in various forms of formulations such as powder, tablets, juice, and decoction as internal medication or in Tail, Lepa, etc., as external medication.

4. Pharmacological Evidence

Ayurvedic herbs affect hair pigmentation and follicular health through a number of processes, according to recent pharmacological research. Amalaki

(*Emblica officinalis*) contains high levels of vitamin C, gallic acid, and ellagic acid, which neutralize reactive oxygen species and prevent melanocyte apoptosis. Bhringaraja (*Eclipta alba*) has demonstrated potent free radical scavenging activity and protection against lipid peroxidation in scalp tissues. Extracts of Bhringaraja and Amalaki upregulate tyrosinase activity, enhancing melanin synthesis and reversing depigmentation in experimental models. Polyherbal oils like Nilibhringadi Taila improve scalp circulation and supply essential nutrients for melanocyte function.

5. Clinical Evidence

A randomized controlled trial reported that Nilibhringadi Taila significantly reduced hair greying and improved hair texture within 12 weeks. Polyherbal formulations containing Amalaki, Bhringaraja, and Bala demonstrated visible pigmentation improvement in 68% of patients with premature greying. Chyawanprash, a classical Rasāyana, improved systemic oxidative balance and delayed hair aging markers in clinical subjects. Long-term Rasāyana intake has been linked with improved scalp hair pigmentation and overall vitality. An intervention combining yoga, pranayama, and Rasāyana herbs reported decreased progression of greying and improved quality of life scores in young adults. Stress management protocols in combination with herbal therapy demonstrated synergistic effects on slowing premature hair greying.

DISCUSSION

The current synthesis highlights that Ayurvedic cosmetology provides a multifaceted and holistic framework for managing Premature Hair Greying (PHG), addressing its physical, psychological, and lifestyle dimensions. Unlike conventional cosmetic approaches that rely on synthetic dyes and temporary chemical agents,

Ayurveda emphasizes internal rejuvenation (Rasāyana), dosha balance, and correction of root causes such as improper diet, lifestyle irregularities, and mental stress. The Ayurvedic view that PHG is predominantly a Pitta-dosha-dominant disorder aligns with modern findings on oxidative stress and premature melanocyte apoptosis. The Pitta's qualities - ushna (heat) and tikshna (sharpness) - symbolically parallel oxidative and inflammatory mechanisms that damage hair follicle melanocytes. Dietary and lifestyle causes described in classical texts, such as consumption of Amla, Lavana, Katu rasa - dominant foods, excessive heat exposure, and emotional stress, can be conceptually compared with modern triggers like free radical damage, nutritional deficiencies, and psychogenic factors.

Herbal interventions such as Bhringaraja (*Eclipta alba*), Amalaki (*Emblica officinalis*), and Yashtimadhu (*Glycyrrhiza glabra*) have shown antioxidant, anti-inflammatory, and melanogenesis-promoting actions in pharmacological studies. Polyherbal oils like Nilibhringadi Taila and Mahanila Taila provide both nutritive and protective effects through improved scalp microcirculation and follicular health. These findings substantiate Ayurvedic claims that topical applications combined with systemic Rasāyana therapy promote the restoration of natural hair color and vitality. The reviewed clinical studies, though limited in sample size and methodological rigor, demonstrate encouraging results. Nilibhringadi Taila and Rasāyana formulations such as Chyawanprash, Amalaki Rasāyana, and Narasimha Rasayana were effective in reducing the rate of greying, improving hair texture, and enhancing quality of life. Integrative approaches combining yoga, pranayama, and stress management further support the psychosomatic basis of PHG and underline Ayurveda's preventive orientation.

However, the current body of evidence is constrained by several factors. Most studies lack standardization of formulations, control groups, and objective outcome measures like melanin quantification or follicular histology. The heterogeneity of herbal combinations and treatment durations makes it difficult to establish definitive efficacy or dosage guidelines. Moreover, there is limited translational research connecting Ayurvedic mechanisms to modern molecular pathways such as oxidative stress modulation, tyrosinase regulation, or stem cell preservation. Future research should therefore prioritize multicenter randomized controlled trials, standardization of herbal extracts, and integration of biochemical markers to validate the pharmacological basis of Ayurvedic cosmetology. Collaborative frameworks that blend Ayurvedic theory with molecular dermatology can open new frontiers in natural anti-aging and cosmetic dermatology.

CONCLUSION

This review demonstrates that Ayurvedic cosmetology provides safe, sustainable, and holistic interventions for managing Premature Hair Greying (Akalapālitya). Ayurvedic principles target the root causes - imbalances in Pitta dosha, dietary errors, and stress - through herbal formulations, Rasāyana therapy, and lifestyle regulation. Herbs such as Bhringaraja, Amalaki, and Yashtimadhu, and formulations like Nilibhringadi Taila, exhibit scientifically supported antioxidant and melanogenic effects. Ayurveda's approach extends beyond symptom management, emphasizing rejuvenation (Rasāyana), mental well-being, and adherence to Dinacharya and Ritucharya, which together restore systemic harmony and follicular vitality. The convergence between traditional Ayurvedic insights and modern pharmacological findings supports its

potential integration into contemporary cosmetology. Nevertheless, to substantiate these traditional claims, further evidence-based validation through large-scale, controlled clinical studies and standardized pharmacognostic evaluation is essential. Ayurveda's holistic paradigm, if scientifically strengthened, holds promise as a natural, preventive, and restorative strategy for addressing premature hair greying and promoting overall scalp health.

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