



Review Article

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A REVIEW ON KESHA NASHAKA LEPA: AN AYURVEDIC TOPICAL FORMULATION FOR THE MANAGEMENT OF ATILOMA UTPATTI

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ABSTRACT

Atiloma utpatti is a trending cosmetic concern affecting most of the population worldwide. It is well-thought-out as a social stigma and considered abhorrent to a person. An elegant, smooth skin enhances the self-esteem and confidence of an individual in society. Prevalence of this condition is seen majorly in teenage to elderly adults. In the ancient era, Ayurveda classics emphasized topical applicators for skin beautification, including measures to tackle the concern of atiloma utpatti. In modern cosmetology, varied choices are available for depilatory and epilatory actions but are intricate and harmful to the skin. The presently available depilatory formulations, although effective, are not long-lasting. In this regard, Bhashajya Samhita has quoted a topical lepa preparation providing depilatory action. So, this study aims to appraise the pharmacological activity of the formulation Kesha nashaka lepa regarding depilatory efficacy. The pharmacological actions were compiled from original research articles in google scholar, research gate, PubMed etc. research databases. Thus, the collective pharmacological actions of Kesha nashaka lepa showed a synergistic action of ingredients in the formulation, leading to an increase in pilosebaceous uptake, promoting an effective depilatory activity. Hence, the formulation can be taken for study in the management of the atiloma utpatti condition.

Keywords: Atiloma, Ayurveda, Topical, Depilation, Kesha nashaka lepa

INTRODUCTION

Ayurveda is a science which covers all aspects of health. It includes various approaches to cosmetic problems along with the enhancement of beauty. Under different modalities of therapies mentioned for maintaining elegant skin health, bahir parimaarjana chikitsa (external application of medicines) has been emphasized. They work by locally inducing the therapeutic action and thus enhancing the beauty of the skin.

Hypertrichosis is a condition characterized by excessive hair growth on the body. Hirsutism is a type of hypertrichosis explicitly seen in women and children. This is creating a wide range of psychological and cosmetic problems. It is often observed as a social stigma and considered abhorrent to a person. The growth of hair follicles occurs in three distinctive phases¹, namely the anagen phase (hair growth), catagen phase (death of hair follicle) and telogen phase (hair shedding). Due to multiple aetiologies, when the anagen phase increases beyond normal limits, that body region will experience excessive growth of hairs. Presently, most of the population tends to experience excessive hair growth on body surfaces without any underlying clinical pathology. This being a cosmetic concern, several hair removal methods are in practice. They are broadly classified under depilation and epilation therapies. Depilation refers to the temporary removal of hairs by shaving, using waxing creams etc. Epilation includes permanent or long-term removal of body hairs via laser therapy, electrolysis etc.

In Ayurveda, Acharyas have briefly explained kesha utpatti and various methods for kesha nashana (depilation). Body hairs are

termed shareerasya kesha², and shatana means vinashana³. Destruction of body hairs is termed as kesha nashana, also called loma apaharana.

In the context of kesha nashana, our Acharyas have mentioned many formulations, including udwartana churnas (powder massaging), lepa kalpana, taila prayoga, etc⁴; amongst which lepa kalpanas are widely in practice. Lepa is a fine paste of medicine made from herbal, mineral or herbo-mineral drugs. They act locally and provide shodhana (cleansing), ropana (healing), lekhana (scraping), and varnya (beautifying) action. Kesha nashaka lepa is one herbo-mineral depilatory formulation mentioned in Bhashajya Samhita for the effective management of atiloma utpatti⁵. This study intends to evaluate the efficacy of Kesha nashaka lepa as a hair remover and promote an efficient and improved topical formulation. Thus, contributing to reducing the cosmetic concern in society.

KESHA NASHAKA LEPA

In Bhashajya Samhita, the Kesha nashaka lepa yoga has been mentioned under lepa prakarana adhyaya. It is a Herbo-mineral formulation containing three minerals and one herbal drug (Table 1). These drugs act on the body surface by doing sthanika dosha harana (local therapeutic action), promoting twak swaastya (tissue health) and enhancing kanti (skin glow). The scientific relevance, along with their respective guna and karma (Table 2), has been discussed further to understand and evaluate the efficacy of Kesha nashaka lepa as a better depilatory (hair removal) formulation.

Table 1: Composition of the formulation Kesha nashaka lepa⁶

Ingredient	English name	Scientific name	Ratio
Sudha churna	Quicklime	Calcium oxide	4 ½ parts
Pinda Haratala	Yellow orpiment	Arsenic trisulfide	3 parts
Gairika	Red ochre	Iron oxide	2 parts
Arrow root	Indian arrowroot	<i>Curcuma angustifolia</i>	1 part

Table 2: Rasapanchaka and Dosha Karma of ingredients of Kesha nashaka lepa

Dravya	Rasa	Guna	Virya	Vipaaka	Karma
Sudha churna	Katu, Tikta	Snigdha	Ushna	Katu	Pitta kapha prashamana. Grahi, Balya, Varnya,
Pinda Haratala	Katu, Kashaya	Snigdha, Laghu	Ushna	Katu	Kapha vata shamaka, Romashatana ⁷ , Balya, Kushtaghna, Tvachya.
Gairika	Madhura, Kashaya	Snigdha, Sheeta	Sheeta	Madhura	Pitta shamaka, Raktastambhaka, Vrana ropaka, Kandughna.
Arro root	Madhura	Laghu, Snigdha	Sheeta	Madhura	Vata- pitta shamaka, Balya, Brumhana, Sheetala.

SCIENTIFIC RESEARCH ON THE PHARMACOLOGY OF THE INGREDIENTS IN KESHA NASHAKA LEPA

Sudha churna (Quick lime)

Quick lime is a whitish grey, caustic powder containing carbonates, oxides and hydroxides of calcium and magnesium. It is a highly alkaline substance with a pH of 12.5. It is known for its bactericidal action and is responsible for mild inflammatory tissue reactions. It is acknowledged to promote depilatory action when combined with other drugs. This is achieved by enhancing the lipophilic activity to aid in the entry of the drug into the site of the hair follicle⁸.

Pinda Haratala (Arsenic trisulfide)

The yellow orpiment consists of 61% of Arsenic and 39% of Sulphur. It is known for stimulating respiratory, intestinal, and cardiac functions. Orpiment is proven for its anti-microbial, anti-asthmatic and anti-convulsant action. It is used as a prime ingredient in the majority of depilatory formulations⁹. Arsenic trisulfide is known to reduce ATP production and thus hinders the growth of hair follicles. It decreases the level of cellular energy and hence retards the mitotic activity necessary for the formation of hair follicle¹⁰.

Gairika (Red ochre)

Red ochre is the ore of hematite. It is a soft mineral with a dull lustre. It primarily contains 70% of Iron and 30% of Oxygen, along with sand and other impurities. Ochre has proven antiseptic properties and inhibits bacterial production¹¹. It is an established photoprotective agent with exfoliating and cleansing action on the skin. It has adsorbent and hydrating action, which is known to repair tissue damage.

Arrowroot (*Curcuma angustifolia*)

Arrowroot is rich in starch, bagasse, and husk fibre. It is well known for its healing, softening and gelling properties. The phytoconstituents in arrowroot are beta-carotene, niacin, folate, thiamine etc., along with Iron, Magnesium and Phosphorus. The root starch has a high content of amylose, fats and proteins, essential elements to nourish and promote tissue health. It is a blood-adaptable- bio accumulate¹². It regulates appetite, enhances neurological development, decreases unsaturated fatty acids, and reduces inflammation. The antioxidants present in arrowroot decrease oxidative stress in cells, because of which skin health is maintained.

DISCUSSION

Atiloma utpatti is a condition concerned with abnormal excess growth of body hairs due to multiple aetiologies. This can be correlated to a mild grade of hypertrichosis, usually seen due to an imbalance in hormones. The primary reason documented in research studies is increased androgen hormone production, which leads to excess growth of body hairs¹³. This being a significant cosmetic concern, various depilatory methods are widely used to tackle atiloma utpatti, none of which have a satisfactory outcome. The primary reason is the high cost and difficulty in the ways practised. Kesha nashaka lepa has been exclusively mentioned for hair removal under the lepa prakarana of Beshaja Samhita. This is a form of topical application which induces local action. The collective pharmacological activities of all the ingredients in the formulation are Shothahara (anti-inflammatory), Romashatana (depilation), Tvachya (nourishes the skin) and Varnya (promotes glow). It also has an anti-microbial, anti-fungal, antioxidant and soothing action on the skin, which contribute to the effective depilatory action of the formulation. As per the Ayurvedic perspective, the mode of action of Kesha nashaka lepa can be inferred as; the entry of the lepa aushadha into the romakupas by gentle rubbing in the pratiloma gati of loma (upward and opposite to hair growth) which thereby allows the veerya of dravya to enter swedovaha srotas and siramukha, following which the kesha nashaka action of the formulation might be possible. It can also be anticipated that the lepa might act over bhrajaka pitta when absorbed into the tvacha. This method of application and removal after a specified contact span increases the skin temperature, augmenting the pilosebaceous uptake and skin permeation of the drugs resulting in the desired action.

The massive depilatory action of this formulation can be because of the mode of action of the drugs used. As an overview, the inference of samyoga samskara explained in classical texts of Ayurveda can be accredited here as the synergistic action of drugs used in Kesha nashaka lepa, which are mainly responsible for effective hair removal. Additionally, Pinda Haratala is found in various depilatory formulations mentioned in Ayurvedic classics. This can be attributed to its lomashatana karma, majorly due to ushna veerya and prabhava of the dravya. Haratala, a trivalent arsenic compound, is responsible for the reduction in ATP synthesis by inhibiting the functional aspects of the pyruvate dehydrogenase (PDH) complex-16, thus preventing the regeneration of lipoamide and reducing citric acid cycle activity. In addition to this, it affects the sulfhydryl-containing enzymes in the membrane transport mechanism leading to a reduction in glucose uptake and thus provides hair growth hindrance due to lack of nutrient supply to the hair follicle¹⁴. Sudha is acknowledged herein to promote the action of Haratala due to its

caustic property with an alkaline pH, which might be responsible for the destruction of hair follicles. The samyoga samskara (synergistic action) explained in classics can be well understood by the drug interaction of Sudha and Haratala, wherein the hydroxides of calcium are accredited to promote the action of haratala by helping the drug entry into the site of a hair follicle. This is due to amplification in lipophilic activity, which aids in crossing skin layers (including stratum corneum); thus, the drug reaches the site of action, i.e., the hair follicle. Gairika and Arrowroot powder used in the formulation acts as a base material and supports the action of lepa by maintaining the integrity of the skin, promoting anti-inflammatory activity and adjusting pH, which provides a soothing effect.

The overall analysis of the pharmacological activities of the drugs such as Romashatana, Tvak prasadana, anti-inflammatory and soothing effects contribute to the enhanced hair removal action of the formulation Kesha nashaka lepa. Based on the above study, it can be concluded that Kesha nashaka lepa might provide efficacious hair removal action and can be an excellent boon for the management of atiloma utpatti.

CONCLUSION

To maintain elegant skin health, Ayurveda describes various external applications under the umbrella term bahir parimaarjana chikitsa, which includes lepa kalpanas. Bheshaja Samhita explicitly quotes numerous local paste applications, amongst which Kesha nashaka lepa has been mentioned to control the condition of atiloma utpatti. This study has shown the significance of Kesha nashaka lepa as an efficient depilatory formulation. Along with the hair removal action, it might also provide a soothing effect on the skin. Therefore, this formulation can be a great initiative toward obtaining an effective hair removal solution in the modern era. Kesha nashaka lepa can be evaluated further for efficacy in bigger sample groups. Thus, this study has succeeded in reviewing the effectiveness of Kesha nashaka lepa in the management of atiloma utpatti.

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