

Ayurvedic Drugs in the Management of Hirsutism (*Avanchita Roma*) – A Review

Review Article

Murali Krishna C^{1*}, Siva Ram G², Venkateshwarlu B¹, Malini S³,
Sujatha P Dhoke¹, Savita Gopod¹, Babu G⁴

1. Research Officer (Ay.), 2. SRF (Ay.), 3. Research Officer (Bio-Chemistry), 4. Assistant Director - Incharge
RARISD, CCRAS, Vijayawada, Andhra Pradesh

Abstract

Beauty enhances the self confidence of an individual. Hirsutism is a condition of abnormal growth of hair on any part of the body irrespective of gender. The rejection due to the stigma in the society causes psychology distress in an individual especially women. Around 5 to 10% of women are more prone to such social difficulties. The reason for Hirsutism might be Genetic or unhealthy lifestyle which triggers the pathogenesis. It can be a condition of unknown origin or a secondary one to an underlying illness. Now a day's many depilation techniques are available like plucking, threading, shaving, waxing, electrolysis, laser therapy etc. These hair removal procedures cause complications like skin lesions, minor burns, scarring, inflammation, etc. Some methods are highly expensive for a common man to afford. Keeping this in view a critical compilation has been carried out to trace out the ancient depilation formulations mentioned in the Ayurvedic classics with special reference to *Bruhatreyi* (3 major texts in Ayurveda) & *Laghutrayi* (3 minor texts in Ayurveda) for the benefit of ailing individuals. Study revealed drugs used are of *Oudbhida* (Plant), *Pardhiva* (Mineral) and *Jangama* (Animal) origin. Classical formulations are easily prepared, economical and effective in treating Hirsutism.

Key Words: Hirsutism, Depilation, *Avanchita roma*, *Atiloma*, *Lomasatana*.

Introduction

Hirsutism in general is defined as excessive body hair in men and women on parts of the body where hair is normally absent or minimal (1). Hirsutism is a more serious problem in female individuals which affects around 5-10% of women. Presence of terminal coarse hairs in females in a male-like distribution cause psychological distress and social difficulty (2). Hirsutism is attributed either to increased production or increased sensitivity of the hair follicles to circulating androgen. In majority of patient's hirsutism should be considered as a sign of conditions like endocrinopathies and neoplasms. The exception is idiopathic hirsutism (IH), also called simple or peripheral hirsutism. The causes of hirsutism may be divided into androgenic factors, non-androgenic factors, and idiopathic hirsutism. Androgenic causes account for major share of patients including polycystic ovary syndrome (PCOS), which affects about 70-80% of hirsute women. Adrenal hyperplasia, thyroid dysfunction, Cushing syndrome, and androgen-secreting tumours, syndromes of severe insulin resistance, etc are the other causative factors. Non-androgenic causes of hirsutism are relatively rare e.g. excess hair growth of acromegalics. In addition, hirsutism may develop with chronic skin irritation because hair is designed to protect the skin.

Non-androgenic anabolic drugs will cause a generalized growth of many tissues, particularly hair. The diagnosis of idiopathic hirsutism is established by clinical exclusion in a patient who is obviously hirsute but in whom the circulating androgens either of the two sexes (male/ female) and ovulatory function in female subjects appear to be normal.

In Ayurveda *Loma* (hair) is a *parthiva dravya* (earth element) considered to be developed from *Pitruja Bhava* (inherited from father) during antenatal period (3). According to Vagbhata of the text *Ashtanga Sangraha* '*Loma* (hair)' develops during 6th month of intrauterine life (4). According to the text *Charaka samhita*, *Loma* is considered as *Asthi dhatu Mala* (excreta of bone tissue) and is rooted in the 6th layer of the skin (5). *Lomasatana* (depilation) medications in classical texts chiefly comprise of topical applications.

Aims and Objectives

To Compile the *Lomasatana* (depilation) formulations cited in *Bruhatreyi* (3 major texts in Ayurveda) & *Laghutrayi* (3 minor texts in Ayurveda).

To discuss the rationale behind the effect of the drugs used in the formulations of *Lomasatana* (depilation).

Materials and Methods

Bruhatreyi (three major texts), *Laghutrayi* (three minor texts) and *Nighantu* (lexicon) in Ayurvedic classics viz- *Charaka Samhita*, *Susruta Samhita*, *Sarangadhara Samhita*, *Bhavaprakasha Nighantu*, *Kaiyadeva Nighantu*, etc. were taken from our institute library and thoroughly studied along with contemporary research on the compiled drugs with respect to

*Corresponding Author:

Murali Krishna C

Research Officer,

RARISD, CCRAS,

Vijayawada,

Andhra Pradesh

Email id: mkchagamreddy@gmail.com

Lomasatana (depilation) to fulfil the objectives of the study.

Observations

Clinical assessment

The physical examination should be used to establish the type, pattern, and extent of the excessive hair growth. Ferriman and Gallwey devised a score for clinical quantification of hirsutism (6). However, it was a subjective scale and hence not universally adopted. A modified Ferriman-Gallwey score shown in 'Figure:1' is a qualitative tool for evaluating and quantifying hair growth in nine androgen-dependent areas in women. This scoring system evaluates nine different body parts viz- upper lip, chin, chest, upper back, lower back, upper abdomen, lower abdomen, arm, and thigh. The scores range from zero (no excessive terminal hair growth visible) to four (extensive hair growth visible) for each body part evaluated. A maximum score of 36 is possible, but a score of ≥ 8 typically indicates hirsutism.

According to Ayurveda *Ati loma* (too hairy) and *Aloma* (hairless) individuals are considered as *Nindita* (undesirable). *Ati loma* is a more elaborate word used in Ayurveda which includes both male and female having excess or unwanted hair growth on any part of the body (7).

Investigations

Initial laboratory tests include testosterone (on days four to ten of the menstrual cycle), DHEAS (Dehydroepiandrosterone sulfate), LH/FSH ratio, 17 Hydroxy progesterone, etc. A serum testosterone level > 200 ng/dL is highly suggestive of an adrenal or ovarian tumour. If serum testosterone is elevated despite a normal DHEAS level, an ovarian source is more likely. If a DHEAS level > 700 μ g/dL is present despite a normal serum testosterone level, an adrenal source should be suspected as the cause of hirsutism (8). LH/

FSH greater than 3 is indicative of PCOS which may cause hirsutism. 17 Hydroxy progesterone (17-OHP) is a serum marker unique for CAH (congenital adrenal hyperplasia). In the presence of both amenorrhea and hirsutism, prolactin levels and thyroid function tests should be obtained to differentiate hyperprolactinemia and hypothyroidism. If suspected, 24-hour urine cortisol test should be performed to exclude Cushing syndrome. In women with absent or irregular menstruation, pregnancy should be ruled out before initiating any treatment (9). Pelvic ultrasonography (USG) can be done to detect an ovarian neoplasm or a polycystic ovary. Magnetic resonance imaging (MRI) or computed tomography (CT) of the adrenal region is useful for diagnosis.

Treatment

Management includes Non-pharmacological physical methods of temporarily removing hair by shaving, plucking, waxing, bleaching, or permanent hair reduction by electrolysis and photoepilation, etc. Pharmacological treatment comprise of Oral contraceptives (10), Androgen receptor blockade (11), Gonadotrophin-releasing hormone agonists (GnRH agonists) (12), Insulin sensitizing drugs (13), and biological modifiers of hair follicular growth like Eflornithine hydrochloride (14).

Ayurvedic, a holistic medicine embraces a collaborative approach of *Aushadha* (medicament), *Ahara* (food) and *vihara* (lifestyle). Here we are presenting the Medicinal management of Hirsutism. Classical texts comprise mostly of *Bahirparimarjana* (topical application) techniques for temporary and permanent hair removal called *Lomasatana* (depilation). The ingredients in the formulations are of *Oudbhida* (Plant), *Pardhiva* (Mineral) and *Jangama* (Animal) origin. Herbal drugs useful in depilation are shown in Table No:1, Mineral drugs are shown in Table No:2 and Animal drugs are shown in Table No:3 respectively.

Table No:1 Herbs cited in *Bruhatreyi* & *Laghutrayi* Texts used for *Lomasatana*

S.No.	Sanskrit name	Part Used	Scientific Name	Family
1.	<i>Sami</i>	Fruit & Seeds	<i>Prosopis cineraria</i> (L.) Druce	Fabaceae
2.	<i>Bhallataka</i>	Oil	<i>Semecarpus anacardium</i> L.f.	Anacardiaceae
3.	<i>Rambha</i>	Pseudo-stem	<i>Musa paradisiaca</i> L.	Musaceae
4.	<i>Ingudi</i>	Seeds	<i>Balanites aegyptiaca</i> (L.) DELILE	Balanitaceae
5.	<i>Palasa</i>	Leaves	<i>Butea monosperma</i> (Lam.) Taub.	Fabaceae
6.	<i>Arka</i>	Leaves	<i>Calotropis gigantea</i> (L.) R.BR.	Apocynaceae
7.	<i>Syonaka</i>	Root bark	<i>Oroxylum indicum</i> (L.) VENT.	Bignoniaceae

Table No:2 Minerals cited in *Bruhatreyi* & *Laghutrayi* Texts used for *Lomasatana*

S.No.	Sanskrit name	Used as	Scientific Name	Common Name
1.	<i>Haritala</i>	Powder/Bhasma	Arsenic trisulfide	Yellow orpiment
2.	<i>Manahshila</i>	Powder/Bhasma	Arsenic disulfide	Realgar
3.	<i>Saindhava lavana</i>	Powder	Halite	Rock salt

Table No:3 Animal origin's cited in *Bruhatreyi* & *Laghutrayi* Texts used for *Lomasatana*

S.No.	Sanskrit name	Part used	Scientific Name	Family
1.	<i>Sankha</i>	Incinerated Shell	<i>Turbinella pyrum</i>	Turbinellidae
2.	<i>Gruha Godhika</i>	Tail of Lizard	<i>Hemidactylus frenatus</i>	Gekkonidae

The text Charaka Samhita in the description of *Phala varga* quoted about the fruit of *Sami* (*Prosopis cineraria* (L.) Druce) of having the property *Keshaghna* (hair depletion) (15) & in the text Susruta samhita the word *Kesanasena* (destroys hair) is used (16). The seeds of the same herb (*Sami*) were mentioned in the text Susruta samhita as one of the ingredient used for *Romsatana* (hair depilator). It includes *Bhasma* of *Kadali* (*Musa paradisiaca*), *Syonaka* (*Oroxylum indicum* (L.) VENT.), *Haratala* (orpiment), *Saindhava lavana* (rock salt) and seeds of *Sami* (*Prosopis cineraria* (L.) Druce) pounded with cold water and applied as paste at the desired area for a good depilatory action (17). Another formulation for external application includes a paste prepared by pounding two parts of *Sankha Bhasma* (calcium carbonate) and one part *Haritala* (Yellow Orpiment) processed with *Sukta* (vinegar) acts as hair depilator (18). Likewise an external application of the concoction of *Bhallataka Taila* (oil of *Semecarpus anacardium* L.f.) and *Snuhi Ksheera* (latex of *Euphorbia neriifolia* L.) is useful for the management of hair removal (19). The fourth external medicament mentioned in the text Susruta samhita is a combination of *Bhallataka taila* (oil of *Semecarpus anacardium* L.f.) with the ashes prepared from *Gruha Godhika Puccha* (Tail of house lizard), *Rambha* (*Musa paradisiaca* L.), *Haritala* (orpiment) and seeds of *Ingudi* (*Balanites aegyptiaca* (L.) DELILE). This mixture is brewed with water under the sun and applied over the skin for the purpose of hair removal (20).

The text Sarangadhara mentioned two formulations claiming to be useful in hair removal within seven topical applications. The first one is a combination of 2 parts of *Sankha* (calcium carbonate), 1 part of *Haritala* (Yellow Orpiment), half part *Manahshila* (realgar) and 1 part *Sarjika kshara* (an alkali) made into paste with water and applied externally which makes the part resembles the head of a monk (21). Second depilation paste for topical use is prepared with 2 parts of *Haritala* (yellow orpiment), 6 parts of *Sankha Bhasma* (calcium carbonate), 2 parts of *Palasa Kshara* (alkali made of *Butea monosperma* (Lam.) Taub.) blended with the fresh pseudo-stem juice of *Rambha* (*Musa paradisiaca* L.) and leaves of *Arka* (*Calotropis gigantea* (L.) R.BR.) (22).

Discussion

In Ayurveda treatment of Hirsutism is mostly by topical medicaments. The topical pastes enter the *Lomakupa* (opening of hair follicle) and vandalize the follicles to causes temporary or permanent depilation. Classical texts quoted certain substances which by internal use cause hair loss. Dalhana while commenting on the text Susruta samhita said that the reddish fruit (ripe fruit) of *Sami* (*Prosopis cineraria* (L.) Druce) can either be used as a topical medicament or taken internally for the purpose of *kesaghna* (depilation). Most of the Herbal ingredients used in *Lomasatana* (depilation) formulations have *Pittala* (increases *Pitta* bodily humour) or *Kshara* (alkali) property.

Sami (*Prosopis cineraria* (L.) Druce) fruit is an

Ushna virya (hot potency) substance having *Ruksha* (dryness) and *Pittala* (increases *Pitta* bodily humour) property (23). *Bhallataka* (*Semecarpus anacardium* L.f.) pericarp contains an alkaloid called *Bhilawanol* (24), a highly toxic golden yellow corrosive resinous liquid which causes *Vrana* (lesion) and *sphota* (blisters) (25). It is also an *Ushna virya* (hot potency) substance having *Chedana* (excision), *Bhedana* (incision) and *Pittala* (increases *Pitta* bodily humours) property (26). *Haritala* (Orpiment) and *Manahshila* (Realgar) are the sulphides of Arsenic are *Ushna virya* (hot potency) drugs having *Pittala* (increases *Pitta* bodily humour) property. These ingredients when used may vitiate the *Bhrajaka Pitta* (*Pitta* bodily humour related to skin) and weaken the hair roots to cause hair loss.

A famous verse from the text Charaka samhita says an excessive use of *Lavana* (salt) and *Kshara* (alkali) causes loss of hair (27). *Kshara* (alkali) is having *Katu* (pungent) and *Lavana Rasa* (Salty taste). Alkalis have corrosive or caustic (*Ksharana* or *kshanana*) nature which on contact disintegrates or destroys the tissues elements. The text Susruta samhita mentioned *Tikshna* (sharp), *Chedana* (excision), *Bhedana* (incision), *Lekhana* (scarifying), *Dahana* (burning) and *Darana* (tearing) qualities which may assist in depilation (28). *Lavana* (Salt) is presented with the properties of *Tikshna* (sharp), *Vikasi* (breaks the bonding between various dhatus), *Chedana* (excision), *Bhedana* (incision) and *Kushnati Mamsani* (depletion of muscle tissue) which are useful in depilation.

Kadali Kshara (alkali of *Musa paradisiaca* L.) has a pH of approx. 10.7 which tends to be a strong alkali in nature (29). *Ingudi Kshara* (alkali of *Balanites aegyptiaca* (L.) DELILE) prepared from their seeds may have moderate alkaline property. *Palasa Kshara* (alkali of *Butea monosperma* (Lam.) Taub.) has a pH of approx. 9.7 which is a strong alkali. (30). *Arka Kshara* (alkali of *Calotropis gigantea* (L.) R.BR.) prepared from their leaves has a pH of approx. 13.74 which is also a strong alkali (31). *Shanka bhasma* pH value is approx. 9.3 which incur its strong alkali nature (32).

Mode of action regarding the tail of *Gruha Godhika* is uncertain, while *Syonaka* (*Oroxylum indicum* (L.) VENT.) owing to its *Tikta* (bitter), *Kashaya* (astringent) *Rasa* (taste) causes vitiation of *Vata dosha* (*Vata* bodily humour) to produce *Rukshata* (dryness), *Kharata* (roughness) which might serve the purpose of depilation. Ayurvedic classical topical formulations are useful in emergency cases for instant depilation irrespective of the underlying cause. Thorough examination can lead to different therapies related to the exact origin of the condition.

Conclusion

Extensive research work has to be carried out to understand the effectiveness of *Lomasatana* action of different topical formulations mentioned in Ayurvedic classics with respect to its SOP (Standard operating procedure), Standardization of formula, Toxicity and efficacy studies, so as to provide a safe and cost effective solution for Hirsutism.

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