

HARATALA – A KEY INGREDIENT IN TRADITIONAL EPILATORY APPLICATIONS

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ABSTRACT

Smooth and unblemished skin boosts the confidence and self-esteem of an individual. When viewed in terms of Aesthetics unwanted hair present over the body causes cosmetological as well as psychological disturbances. Hair removal is practiced for the reasons like Cultural, sexual, religion and cosmetic purposes. Presently the methods followed include Shaving, Waxing, Electrolysis, Laser therapy, use of depilatory creams. Our *Acharyas* have advised the timely removal of unwanted body hair. In various Ayurvedic classics many Hair removal formulations have been mentioned. Ex: *Roma shatana yoga* of *Chakradatta*, *Romashatana lepa* of *Sharangadhara samhita*, *Loma shatana lepa* of *Bhaishajya ratnavali* etc. When we look into the ingredients of these formulations the drug *Haratala* (Orpiment) is found to be the common ingredient and in various texts *Haratala* is called by the term *Romapaharaka*. This much importance is given to *Haratala* indicates that there must be some major role of *Haratala* in the Epilation/ Depilation activity.

Keywords: *Haratala*, Epilation, Depilation, *Romapaharaka*

INTRODUCTION

Science is a systematic enterprise and cognition that builds and organizes knowledge in the form of testable explanations and predictions. *Ayurveda* is one such discipline and the most ancient traditional system of medicine that consummates with the magnitude of

‘Swastasya Swaastya Rakshanam. Aaturasya Vikaara Prashamanam¹’

Ayurveda gives importance to both *‘Antahparimarjana Chikista’* (Internal medication) and *‘Bahirparimarjana Chikista’* (External or Topical applications), not only concerned with diseases that hamper the

systemic and local functions of the body but also to the Aesthetic need.

The timely removal of the unwanted hair and keeping the skin smooth and clear has gained importance since ages. To exemplar this *Acharya Charaka* has said to remove the *Loma/Roma* (Vellus hair), *Smarshru* (moustache) timely. These concerns render to formulate different *Loma shatana yogas* (Hair removal applications) by various authors namely *Acharya Govinda Das Sen* of *Bhaishajya Ratnavali*, *Acharya Sharangadhara* of *Sharangadhara samhita*, *Sadananda Sharma* of *Rasa Tarangini*.

Looking into the ingredients of these entire formulations one can notice the presence of drug '*Haratala*' (Orpiment) in almost all the formulations and in many of the classics it is mentioned by the name *Romahrit*², *Romanashaka*, *Kachanashta*³ etc. This gives a clue that *Haratala* might be taking major role in Epilation/depilation activity.

Haratala which is called as Orpiment/Arsenic tri-sulphide is the combination of two parts of Arsenic and 3 parts of Sulphur.

By analyzing the Pharmacodynamics of contemporary medicines and cytotoxic drugs which cause hair fall as a side effect, one can presume the probable mode of depilatory/epilatory action of *Haratala*.

AIM AND OBJECTIVE:

To establish the role of *Haratala* as depilatory drug in Traditional hair removal applications- on the basis of information available in Ayurvedic and modern sciences.

MATERIAL AND METHODS:

Description of Loma/Roma (Vellus hair):

In Ayurvedic classics there are lot of references available about *Roma/Loma*. It is considered as *Pitruja bhava*⁴ (Paternal factor). According to *Acharya Harita* the *Loma* are formed during the 4th month and according to *Vridha Vagbhata* it is during 6th month⁵ of fetal life from the skin.

Hair follicles populate the entire surface of the skin with the exception of palms, soles, dorsum of terminal phalanges of the digits, glans penis and mucocutaneous junctions. Hair is different biologically and morphologically in different parts of body. The Vellus hairs are the short fine non modulated lanugo hairs.

It can be divided into 2 parts –

1. Root - the part embedded in the skin.
2. Shaft - the portion projecting from the surface.

A pouch like structure called Follicle surrounds the hair root. At the base of the hair follicle lie the dermal papilla cells, biological structures that are very important to the follicle, as they bear capillary vessels which send nutritive elements from the blood to the cells.

In the dermal papilla, also lie the androgens, receptors and fibroblasts; the growth of the Vellus hair is clearly dependent on these. In broad terms the development of such hair at puberty is parallel with the rise in the level of Androgen, Adrenocortical and Ovarian sources⁶.

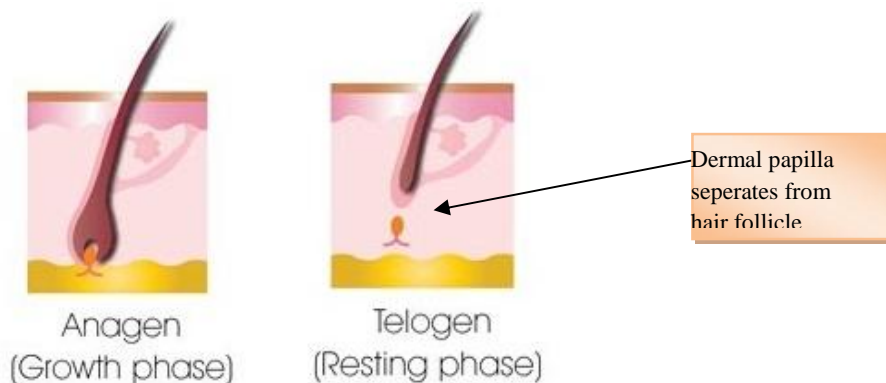
Development, Growth and Distribution of Vellus Hair:

Vellus hair/ Androgenic hair follow the same growth pattern as that of the Scalp hair but here,

→Anagen phase (active growth phase) is shorter

→Telogen phase (resting phase) is longer

Figure 1: Showing Anagen and Telogen phases of hair



Composition of Hair Keratin:

Hair is composed primarily of Proteins (65%-95%), Lipids (1%-9%), Trace elements, Polysaccharides and Water. The proteins are of a hard fibrous type known as a Keratin. Keratins are group of insoluble Cystine proteins produced in the epidermal tissues and having higher Sulphur contents⁷.

It is considered under *Uparasa* by most of the *Acharyas* of *Rasashastra* and few considered it as *Upadhatu*. There is no controversial opinion regarding the identity of *Haratala*. It is equated with the orpiment of modern mineralogy which is an orange to yellow mineral with a chemical formula AS_2S_3 where 61% of arsenic 39% of Sulphur is present⁸.

HARATALA – as *Lomapaharaka* :

Haratala is in use in the field of treatment for various diseases since the beginning of Pre-historic period.

In the classic we can find various formulations for depilatory / Epilatory action and *Haratala* is found to be a common ingredient.

Table 1: Showing different formulations for Depilatory/ Epilatory action

Sl. No.	Formulation	Ingredients	Reference
1	<i>Romashatana yoga</i>	<i>Shankha, Haratala, Kadali rasa</i>	C.D 62
2	<i>Karpooradya taila taila</i>	<i>Tila taila, Bhallataka, Shankha, Karpoora, Yavakshara, Manashila, Haratala</i>	C.D 62
3	<i>Romashatana lepa</i>	<i>Haratala, Palasha, Shankha</i>	Sh.S.U 11
4	<i>Romashatana lepa</i>	<i>Haratala, Manashila, Shankha, Sarjakshara</i>	Sh.S.U 11
5	<i>Romashatana lepa</i>	<i>Haratala, Shankha, Palashakshara, Kadalikanda swarasa,</i>	Sh.S.U 11

		<i>Arkapatra swarasa</i>	
6	<i>Lomapatana lepa</i>	<i>Haratala, Shankha, Palashakshara, Kadali swarasa</i>	Bh.R 60
7	<i>Loma shatana lepa</i>	<i>Palasha, Kadali, Haratala, Kadali rasa</i>	Bh.R 60
8	<i>Lomapatana lepa</i>	<i>Shankha Bhasma, Kadali swarasa, Haratala</i>	Bh.R 60
9	<i>Aragwadhadi taila</i>	<i>Aragwadhamoola twak choorna, Shankha Bhasma, Haratala, Sarshapa taila, Khara mootra</i>	Bh.R 60
<i>C.D – Chakradatta⁹</i>		<i>Bh.R – Bhaishajya Ratnavali¹⁰</i>	
<i>Sh.S.U – Sharangadhara Samhita Uttara khanda¹¹</i>			

Looking into these entire formulations one can make a note that *Haratala* is a common drug in all the combinations and the synonyms of

Haratala like *Romanashana, Romaharana, Kachanashta, Romahrit* supports its depilatory action.

Table 2: Showing different texts mentioning *Haratala* as epilator

	RJN ¹²	RDP ¹³	BP	BhR	BRP ¹⁴	KN ¹⁵
<i>Roma nashana</i>	+	-	-	-	-	-
<i>Roma harana</i>	-	+	-	-	+	-
<i>Kacha nashta</i>	-	-	+	-	-	-
<i>Romahrit</i>	-	-	-	+	-	+
RJN – <i>RasaJalaNidhi</i>	RDP – <i>Rasa Dhatu Prakasha</i>					
BP – <i>Bhava Prakasha</i>	BhR – <i>Bhaishajya Ratnavali</i>					
KN – <i>Kayyadeva Nighantu</i>	BRP – <i>Bharateeya Rasa Paddhati</i>					

By looking at all these synonyms of *Haratala* and consideration of *Haratala* as a common drug in most of the epilatory formulations one can say that there must be some action attributed by *Haratala* on Vellus hair destruction.

DISCUSSION

The probable mode of action of *Haratala*, as epilating agent may be inferred as follows.

The trivalent Arsenic inhibits the pyruvate dehydrogenase (PDH) complex¹⁶ - an enzymatic action taking place in the cell mitochondria. The dysfunction of PDH complex prevents regeneration of lipoamide that reduces the citric acid cycle activity and resulting in decreased production of ATP. It also affects other sulfhydryl containing

enzymes, including membrane transport enzymes involved with insulin dependent cellular glucose uptake leading to lack of glucose. This reduces nutrient supply to hair follicle which hinders hair growth. Similar action can be inferred by the cytotoxic action of the *Haratala* (As₂S₃) on hair follicle.

As mentioned earlier many other ingredients will be present along with *Haratala* in the formulations and those would help to enhance the depilatory action.

The drugs which are combined with *Haratala* in the various epilatory applications include *Palasha*¹⁷, *Kadali*¹⁸, *Shankha*¹⁹ etc. These contain Calcium, Potassium, Carbonate of Calcium and Potassium, Alkanes, Halogen, Ethers, Phosphorus

compounds, Hydroxides of Calcium promote the action of *Haratala*.

The Carbonates of Calcium, Potassium having caustic property with alkaline pH might help in destroying hair follicle along with *Haratala*. The Alkanes and the Halogens might help in the entry of the drug into the site of hair follicle by their increased lipophilic activity, thereby helping the *Haratala* combination to cross the layers of skin including stratum corneum which is lipophilic in nature and reaching the site of action i.e Hair follicle. The phosphorous compounds and hydroxides of Calcium, ethers might help to maintain the healthy status of skin prevents irritation and provides soothing effect by adjusting the pH²⁰. From the above we can draw an inference that the *Haratala* (Arsenic trisulphide) works by decreasing the cellular energy level & thereby leading to decreased mitotic activity and cessation of hair follicle formation.

CONCLUSION

Ayurveda, an ancient science of life, a boon to mankind has given immense gifts for the healthy and happy living and it also gives prime importance to Aesthetics and explains various formulations for the Epilation/depilation of unwanted hair. *Haratala* is found to be a common ingredient of different epilatory formulations which act by its Cytotoxic effect at the hair follicle leaving behind smooth and clear skin.

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