



Review Article

A CLINICAL APPROACH TO HIRSUTISM

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ABSTRACT

Hirsutism is a condition of hyper androgenism, which is defined as androgen- dependent excessive male- pattern hair growth, affects approximately 10% of women with or without complex underlying pathology. It is a physiological phenomenon if it occurs with a familial history and is considered as a serious condition if it is due to various metabolic and genetic causes along with androgen secreting tumors. Hence an apt treatment is only possible after a proper diagnosis. In our classics, there is no direct term for hirsutism is mentioned. But we can decipher relative aspects from multiple references regarding hair and hair growth. Even though, based on the *Dushya* involvement it can be considered as a condition of *Kapha Pradhana Tridosha Kopa*. Hence based on a proper diagnosis through an apt diagnostic technique *Abhyantara* (internal) as well as *Bahya* (external) *Chikitsa* (treatment) like depilation techniques, use of *Lepa* (topical medicaments), oil etc.

INTRODUCTION

Hair is a natural ornament that everyone is very much fond of. A thick long lustrous hair is all time demand for many of them. But, what if these hairs are present in undesired areas in undesired quantity? This clinical condition in females is scientifically called as Hirsutism.

Hair starts to grow from 8-10 weeks of gestation from an individual hair follicle from pilo sebaceous gland apparatus. This apparatus consist of Hair follicle, sebaceous gland and erector pili muscles. The hair begins to grow from the root, in the bottom of follicle. Blood from blood vessels and various glands in skin feeds the root and makes three types of hair, namely- Lanugo, Vellus and Terminal Hair^[1].

Based on area of distribution of hair and sensitivity towards hormones two types of hairs are present, androgen dependent hairs like pubic, axillary, sternal, abdomen and facial hairs and androgen independent hair like hairs present in scalp, eyelashes, eye brows etc.

Estrogen and androgens are the two hormones that regulate hair growth. Androgens initiate growth, increase in diameter and pigmentation of hair in androgen sensitive areas and estrogen retards the rate and initiation of hair growth. Hence the balance between estrogen and androgen in the female body results in the presence of normal pattern of hair.

Hirsutism

Hirsutism is a condition of hyperandrogenism in females. Hyperandrogenism describes excessive circulating male sex hormone (testosterone) in females and its effects on the body^[2]. Increased quantity of androgens converts fine unpigmented vellus hairs to terminal hairs and leads to the growth of terminal hairs in androgen sensitive areas

Definition: Hirsutism is defined as androgen-dependent excessive male- pattern hair growth, affects approximately 10% of women. Hirsutism is most often idiopathic or the consequence of androgen excess associated with PCOS. Less frequently, it may result from adrenal androgen overproduction as occurs in non-classic Congenital Adrenal Hyperplasia (CAH).^[3]

Hence we can say that hirsutism is just a clinical symptom which is having a complex underlying pathology. To differentiate hirsutism from some other similar condition we must also aware about virilization and hypertrichosis.

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Virilization: It refers to a condition in which androgen levels are sufficiently high to cause additional signs and symptoms such as deepening of voice, breast atrophy, balding, Increase in muscle mass masculinity and Cliteromegaly^[3].

Hypertrichosis: It is a condition of non-androgenic hair growth also called as werewolf syndrome, whose underlying pathology is not yet evident. Some opines it as a case of gene mutation (inherited hypertrichosis) while some others considered as some sort of cancer. It is affected by both the sexes and this condition is characterized by excessive hair growth anywhere in the body which is an incurable condition^[4].

This severe condition can be well correlated with the *Atiloma*^[5] (excess hair growth) condition mentioned in *Ashtau Nindhiteeya Adhyaya* which is *Asadhya* (incurable).

Ayurvedic Concepts

In our classics, there is no direct term for hirsutism is mentioned. But we can decipher relative aspects from multiple references regarding hair and hair growth.

In *Susrutha Samhitha Dalhana Commentry, Mala* (waste products) for *Shukra Dhathu* (semen) is told as *Smashru*^[6] (facial hairs) while some others mention the *Mala* for *Asthi* (bone tissue) as *Kesha* (hair) and *Loma*^[7] (body hairs).

In *Ashtanga Hridaya*, excessive quantity of *Mala* is determined, when there is excess production of that *Mala*. If *Dooshitha Asthi Dhatu* is present, there is increase in quantity of *Kesha*, *Loma* and *Nakha* (nails). But in case of hirsutism there is increase in *Loma* but that is presented along with decrease in *Kesha*. Hence rather than depicting *Dooshitha Asthi* as a cause for hirsutism, *Dushitha Sukra* is more justifiable.

Another reference regarding excessive growth of hair is from *Ashtanindithiya Adhyaya* there *Acharya* mentions about people who are undesirable for treatment. One among them is persons with *Atiloma Avastha*. This clinical condition is more comparable with hypertrichosis rather than hirsutism.

Rather than comparing it with hirsutism, it is most comparable with hypertrichosis.

Another reference regarding excessive hair growth is from *Kashyapa Samhitha*. While explaining about *Pushpagni*, *Acharya* characterised as *Sthula* (obese) *Lomasha Ganda*^[8] (increased facial hairs) that is the lady will be obese with hairy cheeks which depicts some acquired hormonal imbalance due to metabolic causes.

Apart from all this most of the *Brihatrayis*, *Laghutrayis* as well as other classics mentions about *Loma Shatana Yogas* that gives evidence for the fact that there are *Atiloma Avasthas* that are manageable. So these are

some classical reviews that can be compared with hirsutism.

Understanding Hirsutism through Ayurveda

The main causes for Hirsutism in modern concept can be grouped as:

- 1. Metabolic causes-** The causes that disrupts normal metabolism includes metabolic causes. By combining Ayurvedic view with modern, *Nidanas* (causes) like *Viruddhahara* (incompatible food), *Adhyashana* (excess food intake), *Ajirashana* (improper digestion), *Avyayama* (lack of exercise), *Divaswapna* (day sleep), *Akalabhojana* (untimely food intake) etc constitute the metabolic causes which develop metabolic disorders like PCOS, hypothyroidism, Cushing syndrome etc., were we can see hirsutism as one symptom.
- 2. Genetic causes** include hirsutism due to *Beeja Dosha* or congenital causes like Congenital Adrenal Hyperplasia, familial Hirsutism etc.
- 3. Tumors** in androgen secreting organs results in the over production of male sex hormones.

Samprapti

Hyperandrogenism is the main causative factor for Hirsutism; three main causes for hirsutism are metabolic causes, genetic causes and tumors in androgen secreting organs.

1. Metabolic and Genetic Causes

The pathogenesis of disease begins from the consumption of *Nidana*. Due to *Nidana Kapha Pradhana Tridosha Kopa* may occur due to which *Karmahani* (improper action) of *Vata* and *Pitta* happen; as a result *Dooshita Rasa* (plasma) gets formed because of *Agnimandya*. This formation causes *Vridhhi* (increase) of *Malaroopa Kapha* in *Kaphasthana* and formation of *Dooshita Upadhathu* (*Anartava-amenorrhoea*). This *Malaroopa Kapha Vridhhi* produce *Sanga* (obstruction) and *Mandata* (decreased action) in *Kaphasthana* ends in the causation of *Pratiloma gati* (improper action) of *Vata*. Vitiated *Vayu* facilitates more spreading of *Dooshita Kapha* to the whole body. Because of the *Samanya Gunas* (similar attributes) of *Kapha* and *Sukra*, the *Sarvavyapi Sukra* in *Stree Shareera* also gets deranged. This deranged *Sukra* stimulates the hair follicles in androgen sensitive area produces excess hair growth/hirsutism.

Along with the vitiation of *Sukra* due to *Samana Guna* other *Dhatus* like *Medas* (fat tissue), *Majja* (bone marrow) etc get also deranged. This phase of *Sthanasamsraya* shows some of the *Poorvaroopa* like increase in *Medodhatu* (*Sthaulya*, *Leena Medas* and *DLP* etc)

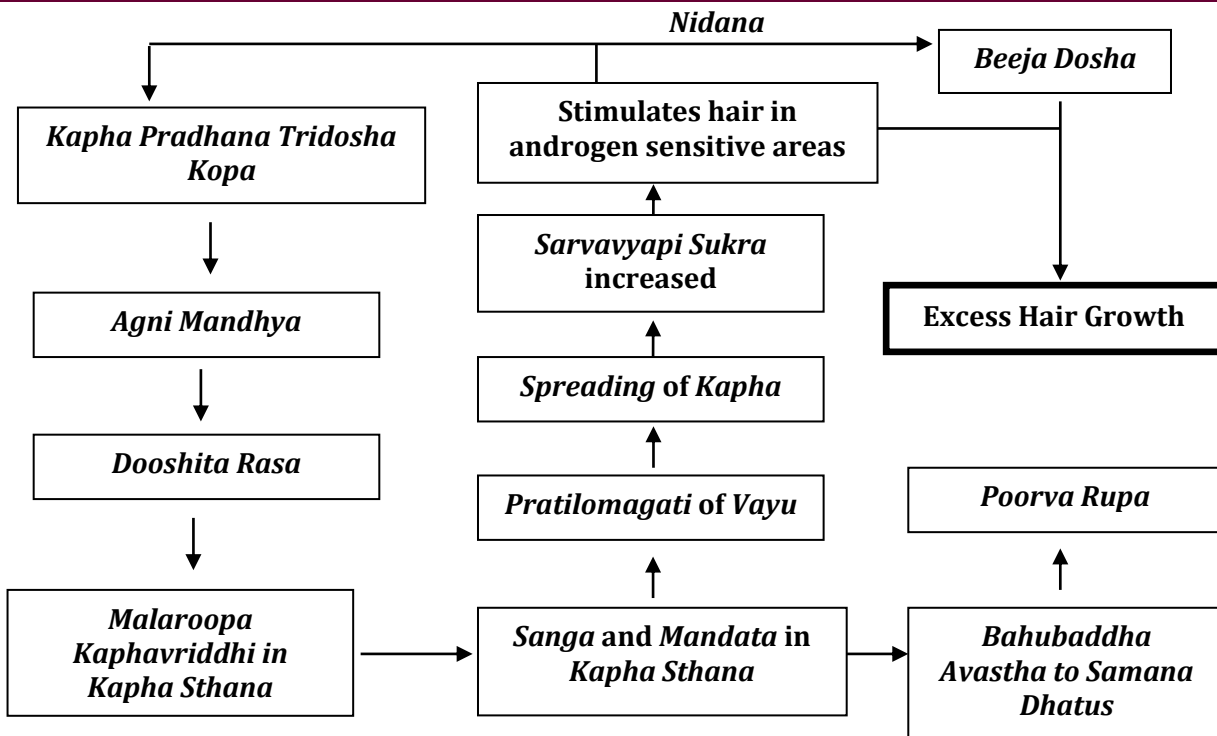


Chart No. 1- Samprapti for Hirsutism

2. Androgen Secreting Tumors

Dooshita Kapha and Pratiloma Gati of Vayu vitiate Mamsa (muscle tissue) and Medas in Sanchaya (accumulation) Sthana. Dooshita Vayu causes abnormal Vibhajana (division) and Dooshita Kapha cause abnormal Vriddhi, results in the formation of tumors in androgen secreting organs which increase the production of androgen results in the stimulation of hair follicles and cause the condition hirsutism.

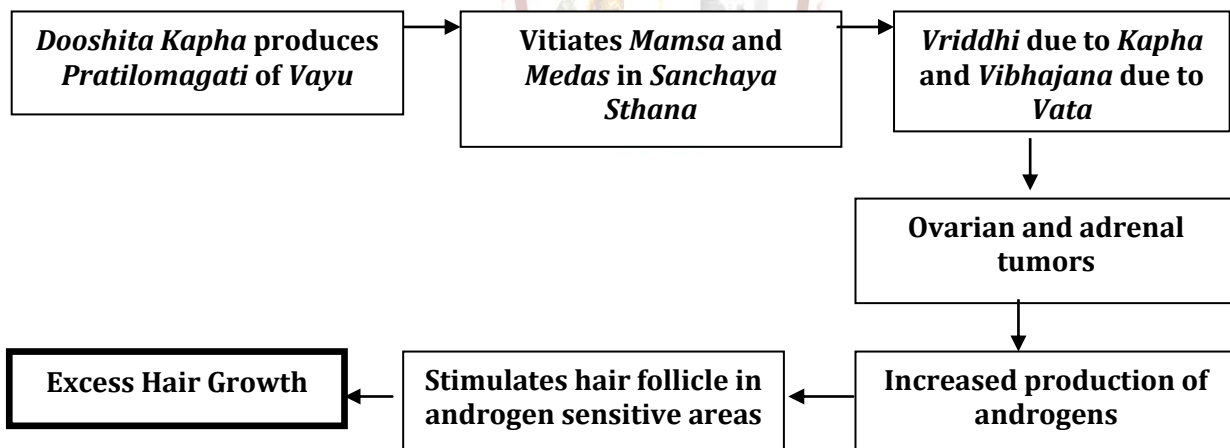


Chart no. 2 - Samprapti for hirsutism in Androgen secreting tumors

Evaluation of Hirsutism

Only a proper diagnosis helps in proper treatment. Hirsutism is a manifestation alone but the underlying pathology is to be identified for that a detailed evaluation is necessary.

- History Taking:** it helps to rule out the underlying pathology of hirsutism. Through a thorough history taking it is helpful to differentiate whether the condition is drug induced or familial or hormonal
- Physical Examination:** It helps to narrow the suspicion as well as the severity of disease. To

know about the distribution of hair Casey's classification and specific gradings like Ferrin Gallwey scale are available that helps to grade the severity of the disease.

Examination of body, built and constitution helps to identify the signs of virilisation.

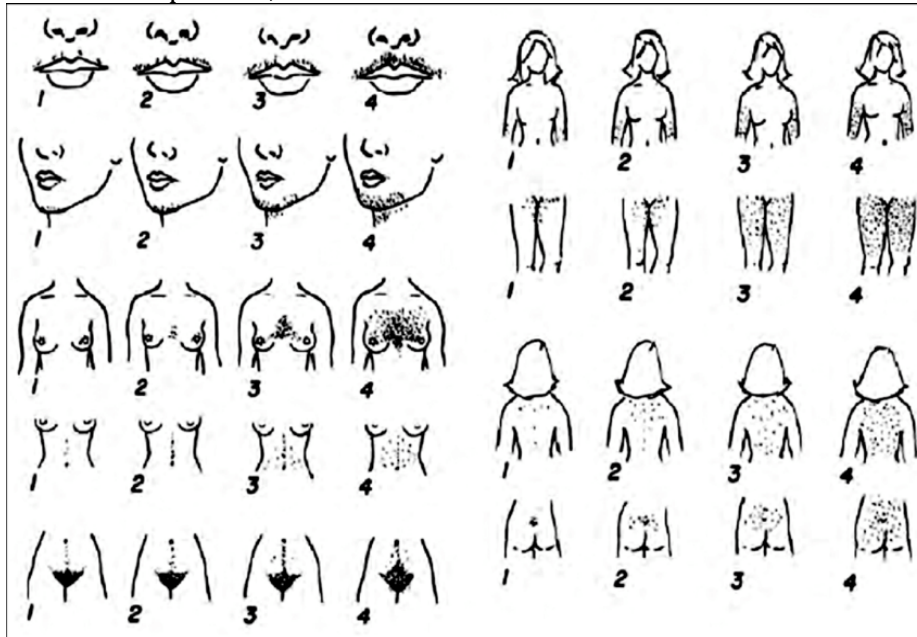
Abdominal examination may help to rule out abdominal tumours.

After this clinical examination the physician may arrive at probable diagnosis.

Modified Ferriman - Gallwey score^[9]

It is score to evaluate and quantify hirsutism in women. Modified Ferriman–Gallwey (mFG) score of ≥ 8 is considered hirsutism. In clinical practice, hirsutism

is subjective. Although hirsutism is considered as a purely aesthetic problem, it is associated with many underlying disorders, especially androgen excess disorders.



Pic.1: Scoring for Hirsutism

3. Laboratory Investigation^[10]: To confirm the diagnosis laboratories as well as radiological investigation are to be done. From simple blood routine examination to hormonal assay many confirms various diagnosis.

As told earlier the causes can be metabolic, genetic and miscellaneous.

Metabolic causes that shows hirsutism are

- i. Hypothyroidism- Ruled out through TFT
- ii. PCOS – Polycystic ovarian Syndrome is a metabolic syndrome which widely shows hormonal derangement. In a person with PCOS, we can observe increased serum LH ($>25\text{mIU/ml}$), Increased LH/FSH ratio (3 or more), Trans vaginal ultrasound and for diagnostic and curative purpose laproscopy is performed.
- iii. Cushing syndrome is a condition due to excess production of cortisol. Urine routine examination and blood test reveals the condition. In such a endocrine condition hormonal level is to be measured.

Saliva test – In person with Cushing syndrome cortisol levels may rise and fall throughout the day and in people without Cushing syndrome, level of cortisol drop significantly in the evening.

Imaging test – CT/ MRI to identify tumours in pituitary and adrenal glands.

Genetic causes for hirsutism is Congenital Adrenal Hyperplasia which can be diagnosed through a value more than 8ng/ml of 17- hydroxyprogesterone.

Miscellaneous causes include hirsutism due to androgen secreting ovarian or adrenal tumours. In such conditions increased levels of androgens in a hormonal assay can be noted. Like serum testosterone level $>2\text{ng/ml}$. further clarification can be achieved through various imaging techniques like USG, CT, MRI etc.

Sadya Asadyata

Hirsutism due to genetic cause or *Beeja Dosha* is *Asadhya*, if the condition is due to the metabolic causes then if *Nava* (acute) is *Krichra Sadya* (difficulty to cure) and *Purana* (chronic) is *Yapya* (manageable) and in case of androgen secreting tumors then the condition is *Krichra Sadya* or *Sastra Sadya* (surgical).

Chikitsa

An apt treatment must be framed based on the underlying pathology after proper diagnosis. "*Samprapti Vighatanameva chikitsa*"– so to cure hirsutism the basic pathology *Agni Mandhya* is to be corrected. In such a condition like hirsutism, along with *Abhyantara Chikitsa*, *Bahya Chikitsa* like depilation techniques, use of *Lepas*, oil etc also to be done.

Abhyantara Chikitsa

Hirsutes may be *Sthula* (obese) or *Krishha* (lean), in both the cases *Agnimandya*, *Srotorodha* and *Dooshita Kapha* are present. Such a disease is very difficult to cure. Then as a first line of treatment *Langhana* (emaciation therapy) is to be adopted.

If the hirsute is *Sthula*, then *Shodana* (purificatory methods) type of *Langhana* can be adopted like *Vamana* (emesis), *Virechana* (purgation), *Vaitharana* or *Teekshna* type of *Vasti* (enema) based on the condition of patient followed by the use of *Agni Vardhaka Dravyas* can be used. Hence in *Sthula Dehi*, the drug of choice must be *Dipana* (The drug that which does not digest *Ama*, but increase the *Agni*-digestive fire), *Pachana* (The drug which increases *Agni*), *Artava Pravartaka* (The drug which induces menstruation), *Lekhana* (scrapping), *Medohara* (the drug which reduces fat) *Dravyas*.

If the person is *Krishna Dehi*, apart from doing *Tikshna Shodana* (strong purgation), *Snigdha* (lubricant) as well as mild *Anulomana* (mild purgation) can be followed along with administration of *Dipana*, *Pachana Dravyas*. While following this *Dravyas* in the form of *Yusha*, soup with *Mudga*, *Kulatha* etc for *Tarpana* (nourishing) is also to be done for balancing the already vitiated *Vata*. Hence *Krishna Dehi* must be given the drug of choice *Dipana*, *Pachana*, *Rasa Pradhana*, *Brimhana* (nourishing), *Vatahara Dravyas*.

In both the cases, finally by considering the *Agni* apt *Rasayana Chikitsa* can be adopted to maintain the equilibrium of *Dosha*.

Bahya Chikitsa- Many *Bahya Prayogas* (external therapies) are mentioned in our classical text books. The probable mode of action of these yogas may be because of the *Tikshna* (sharp) as well as *Ushna* (hot) *Guna* (attributes) of *Dravya* (drugs). Due to the mentioned qualities the *Kapha Dosha* which provides *Sthirata* (steadiness) of *Loma* in *Loma Kupas* (hair follicles) gets reduced results in the loss of stability of hairs due to dryness and ends in *Roma Chyuti* (falling of hair). On account of *Bahya Prayoga* a fact must be kept in mind that hair will not get rid by single application. But it may possible if it is used for about 6 months because the half-life of hair follicle is 6 months. Other than using some medications, in present scenario a wide range of depilation techniques like plucking, threading, shaving, waxing, electrolysis and laser therapy are available.

Single drugs and Yogas for *Loma Shatana*

In various modern literature single drugs like *Sami* (*Prosopis cineria*), *Bhallataka* (*Semecarpus anacardium*), *Rambha* (*Musa paradisiaca*), *Ingudi* (*Balanites aegyptiaca*), *Palasa* (*Butea monosperma*), *Arka* (*Calotropis gigantea*), *Syonaka* (*Oroxylum indicum*), minerals like *Haritala*, *Manashila* and *Saindhava Lavana* in *Bhasma* form and animal products like *Sankha*, *Gruha Godhika* are mentioned in *Loma Shatana*.

***Loma Shatana Yogas*^[11]**

Apart from single drugs, there are much *Yogas* available from many classics and some of the yogas are namely, *Harathaladhi Churna*, *Harathaladhi Lavana*, *Sankadhi Lepa*, *Kshara Taila*, *Aragvadhadya Taila*, *Karpuradhi Taila* etc.

CONCLUSION

Hirsutism is a condition of hyper androgenism which is due to many underlying pathologies. To adopt a proper treatment, the apt cause to be found out through various diagnostic procedures. An apt diagnosis can be made from simple clinical examination to wide variety of laboratorial as well as radiological investigations. Through examinations the apt cause metabolic/ genetic/ miscellaneous can be identified. Then based on the cause apt line of treatment as mentioned can be drawn along with available *Bahya Prayoga*.

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