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A STUDY ON ETIOLOGICAL FACTORS RESPONSIBLE FOR KHALITYA (HAIR FALL)

Khushboo Pandey[1], Sanjay Srivastava[2]

[1]PG Scholar, [2]M.D. (Ayu.) Kayachikitsa, Professor & HOD

Pt. Khushilal Sharma Government (Autonomous) Ayurveda Institute, Bhopal (M.P.)

Corresponding Author: neetupandey9425@gmail.com

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ABSTRACT

Face is the mirror of our personality and healthy vibrant hairs add a lot to the improvement of our confidence and personality. Hair plays an important role in making the body externally beautiful. Healthy- and good-looking long hair makes a person mentally enthusiastic and healthy. Alopecia is the disease term for excessive or abnormal hair loss.

Hair is the foundation for a multimillion-dollar industry focused on preserving scalp hair. It affects interpersonal relationships as well as the professional lives of those suffering due to hastily altering lifestyle; the equilibrium state of *Dosha* is rapidly disturbing, resulting in an average life expectancy becoming shortened. These all factors convict various lifestyle disorders, Hair falls as one among them; this thesis aim is the change in lifestyle increases the pace of attaining improvement in Hair fall.

After exploring the possible etiological factors, it can be concluded that [Junk food items, excessive salt, excessive Kshara, Salt with milk, consuming *Vairodhika Ahara* (Mostly Milk with Salt food & dishes), Bakery products, Dietary habits (*Adhyasana & Samashana*), *Madhura* and *Lavana Rasa*, Shampoo and Negligence of proper hair care are predisposing factors, inactive & sedentary lifestyle, less activity, the habit of excessive time spent on mobile, *Ratrijagrana, Divaswapna*, non-application of hair oil, Stress, Anger, Anxiety] are accountable for *Khalitya* (Hair Fall).

Keywords: *Kesha*, *Khalitya*, Hair fall

INTRODUCTION

Beauty has a very important role in our life and the face is the mirror of our personality healthy vibrant and hairs add a lot to the improvement of our confidence and personality. Healthy, beautiful, long, and attractive "Hairs of the scalp an additive factor charm to the personality". It has a great aesthetic value, and it is the crowning glory of any person.

The famous Roman poet Ovid (43 BC – 17 AD) wrote "Ugly is a field without grass, a plant without leaves, or a head without hair"[1] Out of around 1 lac scalp hair, every day 50, 100 hair falls is normal, [2] Severe hair loss evokes not only cosmetic concerns but may give rise to feelings of vulnerability, loss of self-esteem, alterations in self-image and perhaps even self-identity. The prevalence rate of hair fall is 58% in males and females, Men dandruff is 17.1%, and baldness is 50.4 %[3]; the most common site of hair fall is the frontal region (74%), followed by the frontotemporal region (18%) and central parting (8%), however, more than 50% of men over the age of 50 experience some degree of hair loss.[4] Approximately 25% of men who suffer from male pattern baldness begin the painful process before they reach the age of 21[5]. 40% of male and 25% of females in India is victims of hair fall. Pattern hair loss by age 50 affects about half of men and a quarter of women.[6] One of the most common forms of hair loss seen by dermatologists in study group of Ludwig [Ludwig I (66%) and Ludwig II (4%)], followed by Hamilton-Norwood II (18%) and Olsen (4%) and accounts for 25% of the alopecia cases all over world[7] and 2 – 3% of the cases in UK and USA, 3.8% in China, and 0.7% in India. In general, the prevalence was estimated at 0.1 – 0.2% with a lifetime risk of 1.7%.[8] Androgenetic alopecia or common male pattern baldness (MPB) accounts for more than 95% of hair loss in men and can be for all ages. By the age of 35 two-thirds of American men will experience some degree of appreciable hair loss and by the age of fifty approximately 85% of men have significantly thinning hair.[9]

Khalitya is a disease with *Vata-pitta* dominance. "*Khalitya*" under the broad heading of Charaka in *Urdhwajatrugata Roga*, whereas Shusurata in *KshudraRoga* while Vagbhata mentioned it under *Shirokapalagata Roga*. The *Tejas* of the body in association with *Vayu* and other *Dosha* scorches up the *Kesha Bhoomi* (scalp) and abruptly produces the disorder *Khalitya* and Chakrapani advocated commenting on that *Dehoshma* is to be understood by the word *Teja* and *Dehoshma* is directly proportional to *Pitta*[10]. Depletion of *Asthi Dhatu* causes hair loss.[11, 12] Astanga Sangraha stated that in *Indralupta* there is an abrupt fall of hair whereas gradual loss of hair is a sign of *Khalitya*.[13] Sushruta has narrated two signs i.e., falling of hair and cessation of regrowth of the hair.[14] Possessing *Pitta Prakriti* persons have more "*Khalitya*" (hair loss) rather than the other two *Prakriti* due to the respective properties of *Pitta*.[15] Thus, the *Pratyatmalinga* of *Khalitya* may be taken as the gradual loss of hair.

Alopecia is defined as the loss of hair from areas where hair normally grows along with partial or complete baldness. It is the most common type of hair loss, affecting more than 50 million men and 30 million women in the United States.[16] Androgenetic alopecia, commonly called male or female pattern baldness, while there are many possible reasons people lose hair including serious disease, reaction to certain medications, and in rare cases extremely stressful events, most hair loss in men can be blamed on heredity. It was caused by the predominance of the male sex hormone, testosterone, which women also have in trace amounts under normal conditions.

Modern science revealed, Hair fall is not a disease but just a symptom, which is precipitated according to causative factors. So, we cannot compare *Khalitya* with specific modern diseases. Hair loss can be an early indicator of many diseases such as Thyroid problems, Addison's disease, Anemia, Mineral deficiency, Hormonal imbalances, etc, Coloring, Dyeing, Straightening, Perming, Tight hairstyles, and ironing

in the long run damage the hair root and shaft. Other causes of hair fall are deficiency of Proteins and Vitamins, Typhoid, Chemotherapy agent, Pregnancy, and Puerperium period. The etiological factors in the text are *Atilavanasevena*, *Atiksharasevena*, Milk with salt, *Viruddhahara*[17] etc. and the disease *Khalitya* also has been included in *UrdhvajatrugataRoga* and in that context; *Dushtapratisyaya* has been cited to be one among the *Nidana* and occurred due to the negotiation of *Dushtapratishyaya*.[18] Shusuruta described that an excessive intake of *Lavana* during pregnancy can cause congenital *Khalitya*.[19] Male pattern baldness is generally characterized by the onset of a receding hairline and thinning crown, which later turns into baldness on the top of the head. In women, an inherited pattern of baldness can cause a generalized thinning of hair over the scalp and sometimes it seems to be a "Christmas pattern"[20] hair loss. Hair in these areas including the temples and mid-anterior scalp appear to be the most sensitive to DHT. This pattern eventually progresses into more apparent baldness throughout the entire top of the scalp, leaving only a rim or "horseshoe"[21] patterns of hair remaining in the more advanced stages of MPB. For some men, even this remaining rim of hair can be affected by DHT. The Hamilton-Norwood scale in males and the Ludwig- Savin scale in females have been developed to grade androgenic alopecia which we used to define the grade of hair loss in this study.

AIM AND OBJECTIVES

To find out the probable causes accountable for the occurrence of *Khalitya* (Hair Fall).

MATERIAL & METHODS

This study was initially planned with a sample size of 400 (Ethical Clearance dated 7th September 2019), however, due to an outbreak of Covid – 19 pandemic (in the year 2020) there was a lockdown in the city therefore sample size was rescheduled as 100 subjects with approval of IEC dated 29th December 2020. Once again in the year 2021 due to an outbreak of the Covid-19 pandemic second wave lockdown in the city, 50 patients were registered, having the clinical features as described in the text of dermatology from O.P.D. and I.P.D. of Pt. Khushilal Sharma Government Ayurveda Institute, Bhopal.

The specially designed proforma contains the detailed points related to Patients history, Physical examination, hair and scalp analysis and history about this, dietary history, lifestyle in present scenario and personal history, salt, salt with milk, *Kshara*, *Virruddha Ahara*, drug history, *Vegadharan* history, *Prakriti* assessment, involved *Srotas* assessment and male & female patient the scale accordingly Norwood – Hamilton scale, Ludwig Scale and Savin Scale of hair fall of randomly selected patient of *Khalitya* (Hair fall) as per Ayurveda and modern medicine, modified questionnaire based proforma. A proforma in the form of a validated questionnaire was used as a tool. The Proforma has been designed in such a way that each character described in the Ayurvedic classics has been transformed into simple questions maintaining the original idea intact.

Study design – Clinical Observational Study (Cross-Sectional Study), Duration – 12 Months, Sample Technique – Purposive sampling technique

COLLECTION OF DATA

The data was collected by using a prepared case record form. The collected data were summarized in appropriate tables and charts for easy statistical evaluation. The data was collected as per protocol.

CRITERIA FOR DIAGNOSIS

- Signs and symptoms of *Khalitya* (Hair Fall) as described in Ayurveda as well as in modern medical science.
- For diagnosis of male patient Norwood – Hamilton scale
- For diagnosis of female patients Ludwig Scale and Savin Scale

CRITERIA FOR SELECTION OF PATIENT

INCLUSION CRITERIA

- Patients having the clinical features of hair fall occurring anywhere on the scalp as described in Ayurveda as well as Modern Medical Science.
- Patients of either sex aged between 21 to 50 years.

- Patients were willing to give written informed consent for participation in the proposed research work.

EXCLUSION CRITERIA

- Patients were not fulfilling inclusion criteria.
- Patients with conditions of Alopecia areata like Alopecia totalis and Alopecia Universalis.
- Alopecia due to other scalp disorders like Tinea-capitis, Trichotillomania, Tillogen effluvium, and Traumatic alopecia.
- Patients having endocrine disorders and other systemic disorders like syphilis and malignancy etc.
- Hair loss due to chemotherapy.
- Pregnant and Lactating women.

RESEARCH QUESTION

- A study was not able to find out possible etiological factors accountable for *Khalitya* (Hair fall)?
- Due to the overindulgence in *Kshara*, *Lavana*, and *Virudhaahara* had mentioned the occurrence of *Khalitya*?
- *Virudhaahara* like simultaneous intake of *Lavana* (salt) with milk in the diet induced by *Khalitya*?

CRITERIA FOR ASSESSMENT

- The patients were analyzed based on Etiological factors, clinical presentation, signs, and symptoms of *Khalitya* (Hair Fall).
- Literature related to *Khalitya* (Hair Fall) as decrypted in Ayurveda as well as in modern medical science were reviewed and the collected data of etiological factors obtained from questionnaires of hair fall were corroborated concerning lifestyles of *Khalitya* (Hair Fall).
- Obtained data were statistically analyzed and presented along with explanatory notes, discussion, and conclusion.

SCALE

For this study, Norwood – Hamilton Scale for males and Ludwig & Savin Scale for females were adopted for patterns of Hair loss.

RESULTS

The possible etiological factors accountable for *Khalitya* (Hair fall) were observed in only one aspect viz. The etiological study was categorized into the following components. Observations, observed in 50 cases of *Khalitya* are as below:

- DEMOGRAPHIC: Maximum patients (48%) in Age Group – 21 – 30 years, (64%) Female, (100%) Hindu, (60%) Married, (66%) Post Graduated, (52%) Students, (88%) were belongs to upper middle class, (72%) Migrated or Birthplace.
- CLINICAL FEATURES: Maximum patients (100%) *Kesha Patana*, (82%) *Kesha Tanutwa*, (72%) *Kesha Rukshata*, (68%) *Palitya, (*66%*) Darunaka*, (56%) *Shira Kandu and* (36%) *Kesha Sweda*. (38%) Less Hair Volume, (53.13%) Widening pattern of Hair Loss in Females, (44.44%) Bald spot at the top of head Pattern of hair loss in Males.
- FAMILY HISTORY: Maximum patients (70%) Family history of *Khalitya*
- PERSONAL HISTORY: Maximum patients (66%) Vegetarian diet, (44%) Madhur Rasa predominant diet, (44%) *Samashana* dietary habit, (54%) *Mandagni*, (44%) *KruraKoshtha*, 46% *Sama Mala Pravritti*, (88%) *Samyakmutrapravriti*, (60%) *Samaja Jihwa*
- *KESHA* (HAIR) & *KESHABHOOMI* (SCALP) HISTORY: Maximum patients (54%) Dry Hair, (60%) Dry Scalp, (54%) Comb Twice a Day, (76%) Not making tight Hair style pulls the Scalp, (36%) Using Shampoo Alternate Day, (80%) Not using Soap, (62%) Not using Conditioner, (58%) Never using Serum, **(**24%) Using Hair oil every day, (68%) Not using Hair oil, (74%) Using Hard water for Hair Wash, 50% Using Chemical agents, 80% Using Hair Electric Equipment's, (84%) Not using direct *Urdhwanga Swedana.*
- *AHARAJA NIDANA*: Maximum patients (72%) *Dushit Ama Janya Ahara*, (68%) Excessive *Lavana* (Salt), (50%) Excessive *Kshara* (Alkaline), (50%) Ajinomoto (Mono Sodium Glutamate) in Chinese food, (50%) Maggie, (44%) Canteen food, (44%) Excessive Carbohydrates, (44%) butter, (24%) Mayonnaise, (22%) *Sheetambusevana* (Use of very cold water), (14%) Excessive

Water, (96%) All Bakery Products, (92%), Baking Soda (Meetha Soda), (88%) Eno, (82%) Singdana/Roasted Salty Nuts, (94%), (92%) Salt in Rice, (90%) Salt in Salad Dressing, (88%) Burger/Hotdog, (88%) Yeast Bread, (84%) French Fries, (78%) Mixed Nuts, (70%) Sauce/Pasta sauce, (68%) Hajmola/ pulse/ others salted Toffee, (68%) Instant Noodles, (68%) Sprinkle Salt in Dal/Sabji, (66%) Canned Soup, (36%) Tortilla Chips, (12%) Packed Salted foods, (4%) Pickles, (96%) Paneer with milk, (88%) Other dish with Salt and Milk, (86%) Pasta, (76%) Salt in Kheer, (76%) Vegetable of Dry Fruits, (72%) Salty biscuit with Milk, (72%) Veg Sandwich with Milk and salt, (70%) Poori with salt and milk, (62%) Salty Chapatti with Milk, (22%) Any Vegetables with Milk and (6%) Sev Vegetables with Milk, (100%) Milk+salt, (64%) *SheetaAhara*, (46%) Milk + fruits (milk shake/ custard), (40%) Milk + curd, (38%) Curd at night, (36%) *VidahiAnnana* Like-*Sarshapa/Rajika*/ Pickles, (34%) Green vegetable + Milk, (24%) Fish fried in Mustard oil, (18%) Milk+*Amla Rasa Dravya*, (6%) Muli/Lahsun/Shijan/Urad+milk, (6%) Milk with Khichadi or Salt, (2%) Fish+milk (90%) Godhuma (Wheat), (66%) Milk, (62%) Green Vegetable, (60%) Ghee, (56%) Munga Dal, (30%) SaindhavaLavana, (26%) Dadima, (24%) Mridwika (Munakka), (22%) Honey, (20%) Patola, (16%) Shalichawal/Shathi chawal, (16%) Amla/Haritaki/Triphala, (8%) Yava flour [Table No – 41] (100%) Oily food and Fried food, (98%) Fermented Food, (96%) Spicy food, (96%) Artificially Preserved food, (96%) Frozen Food, (44%) Excessive Sharkara, (16%) Alchohal, (8%) Pan/Gutka/Tobacco/Ganja, (6%) Cigarette smoker.

- *VIHARAJA NIDANA*: Maximum patients (50%) *Avyayama*, (80%) Travelling by Own vehicle, (64%) Travelling by Two-wheeler Vehicle, (38%) Using Scarf in Travel, (30%) Using Helmet in Travel, (84%) facing *Prakvata* in travel. (80%) Facing over-exposure to the Sun, (66%) Non-Air Conditioner atmosphere, (58%) Sedentary type of work, (40%), (64%) *Ratrijagrana* for Gadgets, (56%) sleeping between 10 PM to 2 AM, (62%) 6-8 hours at night, (46%) Awakening between 6 to 8AM, (82%) *Diwashyana*, (64%) Sedentary lifestyle, (56%) Using High *Upadhanam* (Pillow), (54%) Talking to loud, (4%) *Nasya*, (58%) 6 to 9 hours spend on Gadgets, (100%) Time spend on Mobile, (58%) Sitting with down head position continuously 6 to 9 hours, (56%) *Purisha* (Defecation) *Vega Dharana*, (38%) *Nidra* (Sleep), *Vega Dharana*, 34% *Mutra* (Urination) *Vega Dharana*, 20% *Kshuta* (Hunger) and (16%) *Vashpa* (Crying) *Vega Dharana*
- *MANSIKA NIDANA*: Maximum patients (72%) Mental work, (72%) *Krodha* (anger), (68%) *Chinta* (worry), (38%) *Bhaya* (fear), (24%) *Shoka* (grief), **(**26%) Stress of losing a Job, **(**30%) Tensed emotional status.
- *PRAKRITI* ASSESSMENT: Maximum patients (46%) *Vata Pitta Deha Prakriti* with dominancy of *Pitta*
- INVOLVED *SROTAS* ASSESSMENT: After assessment of *Srotas*, we find that mainly *Annavaha*, *Rasavaha*, *Purishvaha*, and *Asthivaha Srotas* are involved in the manifestation of *Khalitya*.
  - In *Annavahasrotas*, (70%) Stupor (*Tandra*), (58%) Weakness, (52%) Anorexia (*Aruchi*), (48%) Heaviness in Abdomen, (48%) Irregular Bowel Habits.
  - In *Rasvaha Srotasa*, (76%) Body ache (*Angmard*), (54%) Anorexia (*Aruchi*), (54%) Drowsiness (*Tandra*), (48%) Weakness (*Krisata*), (44%) Diminished Desire to Eat (*Ashraddha*), (44%) Heaviness (*Gaurav*)
  - In *Asthivaha Srotasa*, All Patients were having defect of Hair (*Kesha*, *Loma*, *Nakha*, and *Samshru Vikara*), (50%) Pain in bone (*Asthishoola*) In *MajjavahaStrotasa*, (46%) Eczema of the Scalp (*Arunsika*).
  - In *PurishavahaSrotasa*, (76%) Constipation (*Vibandha*), (74%) Distention of Abdomen,

(72%) Difficulty in Defecation, (64%) Pain during Defecation of Stool, (60%) Glandular Stool (*Atigranthita Mala*)

- In *SwedavahaSrotasa* (58%) Loss of Perspiration (*Aswedana*), (42%) Roughness of the Skin (*Parushya*)
- NORWOOD–HAMILTON SCALE AND LUDWIG SCALE & SAVIN SCALE ASSESSMENT: In Norwood & Hamilton Scale, 33% Grade – V Male pattern hair loss, 27.78% Grade – III Male pattern hair loss, 22% Grade – VI Male pattern hair loss In Ludwig and Savin Scale, 37.5% Grade – I 3 Female pattern hair loss, 25% Grade – I 4 Female pattern hair loss, 21.87% Grade – I 2 Female pattern hair loss.

DISCUSSION

It is mentioned that one should eat in proper quantity. The quantity to be eaten depends upon the power of digestion and metabolism. The amount of food, which, without disturbing the equilibrium is digested as well as metabolized in proper time, is to be accounted as the proper quantity. Thus, it can be said that a person habituated to excessive *Lavana* or *Kshara* intake and taking *Virudhaahara* (incompatible diet) in routine is prone to have *Khalitya*. *Mandagni* is unable to digest and metabolize even small quantities of digestible food. It is due improper digestion pure *Rasa* will not form, which are responsible for malformation of *Rasadi Dhatu*, and it may be counted as one of the important pathological factors responsible for *Khalitya*.

CONCLUSION

Khalitya was instrumental in consolidating enormous data and deriving dependable conclusions. *Khalitya* is an offshoot of the digestive disturbances as per Acharya Charaka, narrated that "*Rogasarveapimandagni*" This is also aggravation and vitiation of *Pitta* and *Vata Doshas*, which are held responsible for the emersion of *Khalitya*.

After completion of the study, the research data suggest that the root cause of increasing *Khalitya* (hair fall) is improper *Ahara*, *Vihara* in patients have more affection for junk food items, excessive salt, excessive *Kshara*, Salt with milk, consuming *Vairodhika Ahara* (Mostly Milk with Salt food & dishes), Bakery products, Dietary habit (*Adhyasana* & *Samashana*), *Madhura* and *Lavana Rasa* predominant diet. Shampoo and Negligence of proper hair care are concluded as predisposing factors. inactive & sedentary lifestyle, less activity, the habit of excessive time spent on mobile, *Ratrijagrana*, *Divaswapna*, non-application of hair oil, were found in the majority of patients, Psychological Stress, Anger, and Anxiety.

Nidana are the factors responsible for the emergence of disease. Before starting treatment, the physician instructed the patients to change their lifestyle, which is a causative factor for the *Khalitya* (Hair Fall). This lifestyle change increased the pace of attaining improvement. It is a fact that routine lifestyle including food habits is a causative factor for hair fall.

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