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Role of *Srotas* in *Khalitya* (Hair Fall) - A Clinical Study

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ABSTRACT

External appearance and Beauty take priority over intellectual achievement and simplicity. To appear honestly beautiful or handsome, noble and majestic is the dream of every human being. It also gives people self-confidence, personal style. A Person's body without hair is seen like a tree without leaves. Hair plays a very crucial role not only in females but also in males. Hair fall in *Ayurveda* can be correlated with *Khalitya*. The incidence of *Khalitya* (Hair Fall) is increasing day by day. *Srotas* are the channels or inner transport system of the body which is the site for the activities of other bodily elements like *Dosha*, *Dhathu*, *Mala*, *Agni*, etc. *Srotas* are the channel or structure through which *Sravanam Karma* i.e., flowing, moving, oozing and permeation of different constituents and nutrients of the body takes place. Any disturbance at the level of *Srotas* either structurally or functionally leads to the genesis of diseases. *Rasa*, *Rakta*, *Mamsa*, *Asthi*, *Majja* and *Swedavaha Srotas* are by any way all involved in the *Khalitya* (Hair Fall). Statistical analysis showed that *Khalitya* (Hair Fall) was significantly related with involved *Srotas* viz. *Rasa*, *Rakta*, *Mamsa*, *Asthi*, *Majja* and *Swedavaha*.

Key words: *Khalitya*, *Hair Fall*, *Srotas*

INTRODUCTION

The human body is made up of innumerable *Srotas* (channels) which are responsible for performing all the physiological and functional activities. All *Dosha*, *Dhathu* and *Mala* perform their functional activities with the help of these *Srotas*. It has been a practice since long, to recognize all the *Vyadhilaskhana*. The body is divided into small units depending upon their chief function or structure. Each unit comprises many *Avayavas* (Organs) and each organ is made up of

innumerable *Srotas*. *Ayurveda* is the first medical system to announce and describe the existence of innumerable *Srotas*, within the human body. The term *Srotas* is derived from the root "*Susravana*" meaning to exude, to ooze, to flow, to filter. Those from which *Sravana* or flow of the body substances takes place or those through which the materials flow in the body are called *Srotas*.^[1,2] Thus, they are the channels or pathways of the body through which the materials needed for tissue building, nutrition and other nutrients flow from one corner of the body to the other. In other words, materials are transported through these *Srotas* from the place of production to the place of need.

Srotas are the complex pathways or channels of the nervous system governed by *Vayu* for carrying out the functional and physiological activities of the human body.

The following synonyms of *Srotas Sira* (Vein), *Dhamani* (Artery), *Rasayani* (Lymphatics ducts), *Rasavahini* (capillary), *Nadi* (Tubular conduits), *Pantha* (Passages), *Marga* (Pathways, tracts), *Sharirachidra* (Body orifices), *Ashaya* (Repertories), *Niketa* (resorts), *Sthana*

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(Sites), *Samvrutsamvrutani* (open / closed passages).^[3,4] *Srotas* are structural as well as functional units of the body. Any alteration in its structural or functional forms leads to emergence of disease conditions through vitiation in terms of *Dosha*, *Dhatu* and *Mala*. For the holistic approach of management of disease, the complete knowledge of *Srotas* is a must for an *Ayurveda* physician. The net result of these all-pathological changes of *Khalitya* will make *Srotorodha*. Here the affected *Srotas* are *Raktavaha* and *Romakupya*. The *Raktavaha Srotas* in terms of *Avarodha* deprive the localized nutrition's i.e., *Rakta Prasadana Karma* is affected. So, this *Rakta Prakopa* along with *Romakupya Avrodha* results in the arrest of the further growth of hair, leading to *Khalitya*.

AIM AND OBJECTIVES

To find out the role of *Srotas* in the manifestation of *Khalitya* (Hair Fall).

METHODOLOGY

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

- Sign 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.

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.

LITERARY REVIEW

The functions of Srotas are transportation of biological fluids, physiological regulatory factors, nourishment of tissue, and biodiversity of medicaments on the integrity of the Srotas.

Annavaaha Srotas

Amasaya and *Vamaparswa* have been considered as *Moolasthan* of *Annavaaha Srotas*, including *Annavaaha Dhamani*.^[5,6] *Annavaaha Dhamani* plays vital role in the *Preeṇan Karma* of *Rasa Dhatu* by carrying *Paramsukshma Tejohuta*, properly digested, *Panchbhautic Ahararasa* to whole of body. *Amasaya* is the storage site of the *Panchbhautic Anna* and along with the *Vamaparshwa*.

Rasavaaha Srotas

Hridaya and *Dasa Dhamani* have been considered as *Moolasthan* of *Rasavaaha Srotas*.^[5] *Hridaya* is organ heart which is situated in the middle mediastinum of thorax and pumps the blood along with *Rasa Dhatu* throughout the body continuously. *Hridaya* works as storage and pumping action of *Rasa Dhatu*, after that *Dasa Dhamani* transports that *Rasa Dhatu* which is pure minutest essence of properly digested food through all corners of body.

Raktavaaha Srotas

Yakrit and *Pliha* are considered as *Moolasthan* of *Raktavaaha Srotas*, *Raktavaaha Dhamani* are also considered.^[5,6] Origin of *Yakrit* and *Pliha* takes place from *Śonit (Rakta)* during embryonic development,^[8] after birth for particular time period, production of *Rakta* takes place in *Yakrit*. *Raktavaaha Dhamani* conducts the blood after attaining red colour,^[7] throughout all corners of the body.

Asthivaha Srotas

Meda and *Jaghan* have been considered as *Moolasthan* of *Asthivaha Srotas*.^[5] According to *Dhatuṣaṇanyaya*, the origin of *Asthi Dhatu* takes place on account of the specific action of *Asthidhatvagni* and *Asthiposhkanśa* which is formed at the time of *Medodhatu Utpatti*. Entire hip region can be considered as a *Moolasthan* mention *Jaghan* region.

Majjavaha Srotas

Asthi and *Sandhi* have been considered as *Moolasthan* of *Majjavaha Srotas*.^[5] *Majja* is primarily found in long bones.^[9] Bone marrow occupies the cavities of the bones.

Svedavaaha Srotas

Medomoola and *Lomakoop* have been considered as *Moolasthan* for this *Srotas*.^[5] Production of *Sveda* takes place in the form of *Mala* of *Meda Dhatu*.^[10] *Lomekoop* is *Avirbhav Sthan* of *Sveda* and through that *Sveda* is excreted out of body.

RESULTS

Fig 1: Annavaha Srotasa

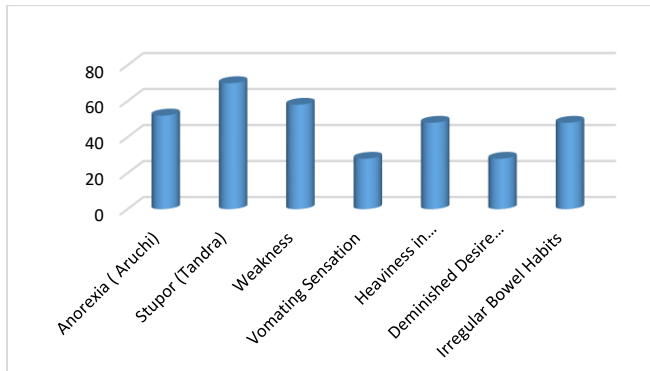


Fig 2: Rasavaha Srotasa

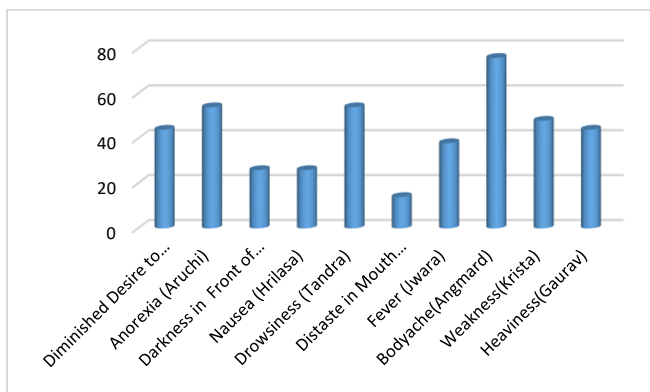


Fig 3: Asthivaha Srotasa

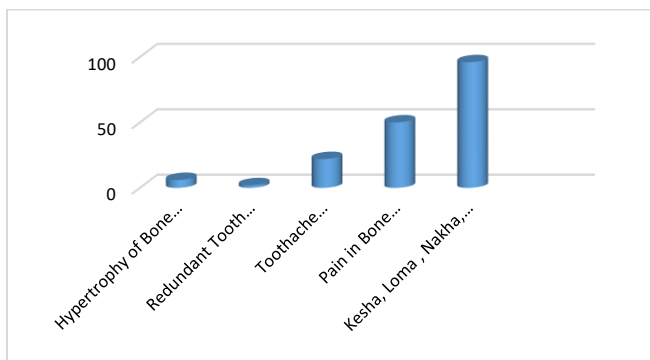


Fig 4: Majjavaha Srotasa

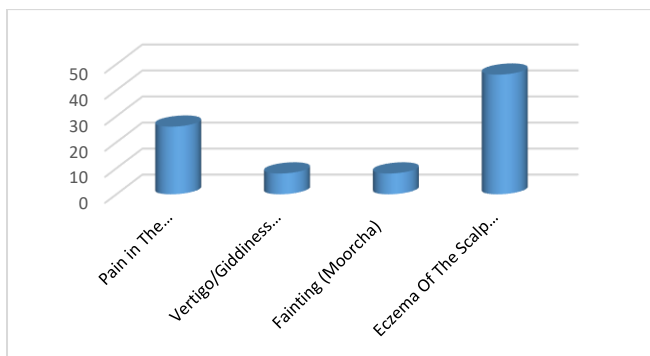


Fig 5: Purishvaha Srotasa

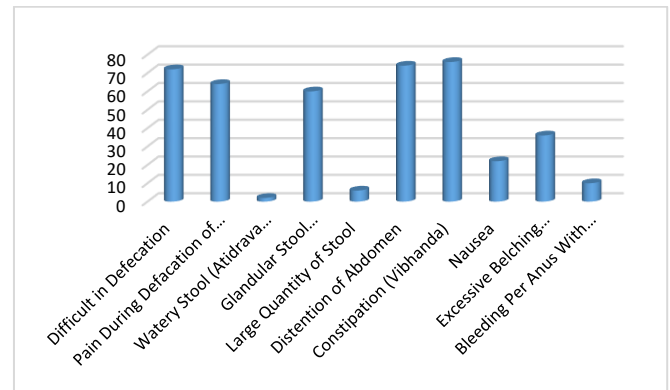
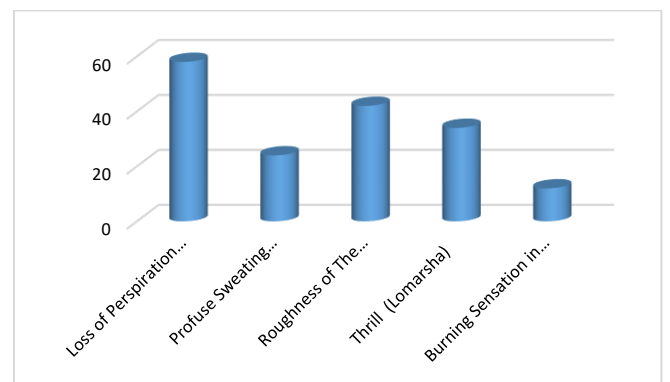


Fig 6: Swedavaha Srotasa



Assessment of Involved Srotas

In Anna Vaha Srotas, (70%) Stupor (Tandra), (58%) Weakness, (52%) Anorexia (Aruchi), (48%) Heaviness in Abdomen, (48%) Irregular bowel habits. In Rasa Vaha Srotas, (76%) Body ache (Angamarda), (54%) Anorexia (Aruchi), (54%) Drowsiness (Tandra), (48%) Weakness (Krista), (44%) Diminished Desire to Eat (Ashradha), (44%) Heaviness (Gaurav). In AsthiVahaSrotas, All Patients were having hair defect of Hair (Keshha, Loma, Nakha, and Samshru Vikara), (50%) Pain in bone (Asthishoola). In Majjavaha Srotasa, (46%) Eczema of the Scalp (Arunsika). In Purisha Vaha Srotas, (76%) Constipation (Vibandha), (74%) Distention of Abdomen, (72%) Difficulty in Defecation, (64%) Pain during Defecation of Stool, (60%) Glandular Stool (Atigrantha Mala). In Sweda Vaha Srotas (58%) Loss of Perspiration (Aswedana), (42%) Roughness of the Skin (Parushya). After assessment of Srotas, we find that mainly Annavaha, Rasavaha, Purishvaha and Asthivaha Srotas are involved in manifestation of Khalitya.

DISCUSSION

In the Indian System of Medicine, the importance of *Srotas* is given for every *Murthiman Bhavas*. *Srotas* are the channels different from *Sira* and *Dhamani*, which carry nutrients to the body organs and are widely spread all over the body. It also carries waste materials for the excretion from the body. Without *Srotas*, the physiological functions of the human body will not be possible. Unobstructed *Srotas* allow manufacture of new tissues and proper flow of nutrients and waste materials. Impaired functions of *Srotas* lead to stagnation of *Dosha*, *Dhatu* and *Mala* in the different *Srotas* of the respective *Dhatu*. Hence, improper *Ahara* leads to the *Rasavaha Srotas Dushti*. Once the *Srotas* become abnormal, it brings abnormality in *Dhatu* and transportation will hamper the required destination. The improper diet and faulty lifestyle due to hampering of *Agni*, aggravates the *Dosha*. Any imbalance in the *Srotas* causes disease, so for the proper development of the human body, a proper functioning of *Srotas* is a must.

Anna Vaha Srotas

70% Patients were having Stupor (*Tandra*), 58% Patients were having Weakness, 52% Patients were having Anorexia (*Aruchi*), 48% - 48% Patients were having Heaviness in Abdomen and Irregular Bowel Habits and 28% - 28% Patients were having Vomiting Sensation and Diminished Desire to Eat (*Ananabilasha*). On the basis of dominant character *Dushti* in this *Srotas* "*Vaigunyat Pawakasya Cha*" means disturbance in *Agni* and as in dietary habits mostly patients were *Samshana* type and *Mandagni* both are causative factors of *Annavah Srotodushti*. It hampers the transportation of food nutrients in the digestive tract. Symptoms of *Tandra*, *Aruchi*, aggravates *Kapha*, it causes *Agnimandya* and '*Rogah Serveapi Mandagni*'. This aggravates *Kapha*, hampers the *Annavaha Srotodushti* and may lead to *Khalitya*.

Rasa Vaha Srotas

76% Patients were having Body ache (*Angmard*), 54% Patients were having Anorexia (*Aruchi*), 54% Patients were having Drowsiness (*Tandra*), 48% Patients were having Weakness (*Krista*), 44% Patients were having

Diminished Desire to Eat (*Ashraddha*), 44% Patients were having Heaviness (*Gaurav*), 38% Patients were having Fever (*Jwara*), 26% Patients were having Darkness in Front of Eyes (*Tama*), 26% Patients were having Nausea (*Hrilasa*) and 14% Patients were having and Distaste in Mouth (*Mukhvairasya*). On the basis of dominant character *Dushti* in this *Srotas* '*Chintyanam cha atichintnata*' means stress level were mostly found, *Samshana* dietary habits, *Guru Sheeta*, *Atisnigdha Ahara* taking in diet cause hamper the *Rasavaha Srotas* and disturbed its *Moola Amashaya* & *Annavahini Dhamni* leads to several diseases may be as *Khalitya*. Heavy foods take a longer time for digestion and *Agni* must work for a prolonged period to digest, it may because *Agni Dushti*. *Abhishyandi Ahara* is *Srotorodhakara* as they are *Pichchhila* and *Guru* in nature and hence it blocks the minute channels and produces *Ama* which causes *Srotodushti* and further leads to other *Srotodushti* ultimately leads to several diseases.

Asthi Vaha Srotas

All Patients were having defect of hair (*Kesha*, *Loma*, *Nakha*, and *Samshru Vikara*), 50% Patients were having Pain in Bone (*Asthishoola*), 22% Patient were having Toothache (*Dantashoola*), 6% Patients were having Hypertrophy of Bone (*Adhyaasthi*) and 2% were having Redundant Tooth (*Adhidanta*). All patients were having *Asthivaha Srotas Dushti* as the *Kesha* are the *Mala* of the *Asthi Dhatu*. *Asthi* is the seat of *Vata*. When a patient takes *Nidana* like *Vatavardhaka Ahara* (*Atiruksha*, *Atisheeta*), *Vatavardhaka Vihara* (*Ratri Jagran*), then *Vata* gets aggravated. This aggravates *Vata* and hampers the *Asthivaha Srotas Dushti* and may lead to *Khalitya*.

Majja Vaha Srotas

46% Patients were having Eczema of the Scalp (*Arunsika*), 26% Patients were having Pain in the Interphalangeal Joint (*Parva Shoola*) and 8% - 8% Patients were having Vertigo/Giddiness (*Bhrama*) and Fainting (*Moorcha*).

Purishavaha Srotas

76% Patients were having Constipation (*Vibhanda*), 74% Patients were having Distention of Abdomen, 72%

Patients were having Difficulty in Defecation, 64% Patients were having Pain During Defecation of Stool, 60% Patients were having Glandular Stool (*Atigranthita Mala*), 36% Patients were having Excessive Belching (*Atiudgara*), 22% Patients were having Nausea, 10% Patients were having Bleeding Per Anus With Pain And Burning, 6% Patients were having Large Quantity of Stool and 2% Patients were having Watery Stool (*Atidrava Mala*). On the basis of dominant character *Dushti* in this *Srotas* may be *Ajirna*, *Adhyasana*, *Durbalagni* and suppression of *Adharniya Vega* are described as a causative factor of *Purish Vaha Srotas Dushti*, *Vibandha (Malsanga)* which found in this study, is mainly due to *Ama* as symptoms of distension of abdomen and it obstructed *Purishvaha Srotas*, which altered normal function of metabolism leads to may be as *Khalitya*.

Sweda Vaha Srotas

58% Patients were having Loss of Perspiration (*Aswedana*), 42% Patients were having Roughness of The Skin (*Parushya*), 34% Patients were having Thrill (*Lomasha*), 24% Patients were having Profuse Sweating (*AtiSwedana*) and 12% Patients were having Burning Sensation in The Body (*Angaparidaha*). On the basis of dominant character *Dushti* in these *Srotas* may be *Krodha*, *Shoka*, *Sheeta* and *Ushna Ahara* taking diet in orderly, hampering the *Swedavaha Srotas* and altering the *Loomkoopas* leads to *Khalitya*.

CONCLUSION

Hence in view of *Roga Nidan*, and *Chikitsa*, a detailed & clear knowledge of *Srotasdushti* become very much necessary as it is responsible for carrying and transformation of tissue elements by maintaining the health. Structurally, the *Srotas* are the hollow channels originating from the root space, spread within the whole body to act as a transport system for the fulfillment of nutritional needs of organism and to get rid of the end results of metabolism from the body. Ayurveda postulates that *Dosha*, *Dhatu*, *Mala*, *Srotas* and *Agni* are the *Vyadhi Ghatakas* (components of the disease process) each one having its definite role, to play in the causation of the disease. *Ama* has been

defined as a condition in which the first *Dhatu* i.e., *Rasa* is not properly formed due to *Mandagni*, leading to the impairment of primarily *Rasa Vaha Srotas* and later on it affects all *Srotas*. It may affect all the *Dosha*, *Dushya*, *Dhatu* etc. In this study in *Asthi Vaha* only one symptom is 100%, *Annavaha*, *Rasvaha* and *Purishavaha* are mostly symptoms.

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