

INTERNATIONAL AYURVEDIC MEDICAL JOURNAL







Review Article ISSN: 2320-5091 Impact Factor: 6.719

ETIOPATHOGENESIS OF KHALITYA (HAIR FALL) - A CONCEPTUAL STUDY

Khushboo Pandey¹, Sanjay Srivastava²

¹PG Scholar, ²M.D. (Ayu.) Kayachikitsa, Professor & HOD Pt. Khushilal Sharma Government (Autonomous) Ayurveda Institute, Bhopal (M.P.)

Corresponding Author: neetupandey 9425@gmail.com

https://doi.org/10.46607/iamj4111082023

(Published Online: August 2023)

Open Access

© International Ayurvedic Medical Journal, India 2023

Article Received: 03/07/2023 - Peer Reviewed: 25/07/2023 - Accepted for Publication: 10/08/2023.



ABSTRACT

In the fast-paced world of today, people are suffering from stress and strain due to the hustle and bustle of urban lifestyle and blank in the context of differentiating greed and the need of the body. It appears to be a global epidemic due to the present era of Stress and Strain due to the Competitive lifestyle and a change in dietary habits. In today's developing world a race for cosmetics and an increasing pace of Westernized culture families are undergoing rapid changes. Compelled to adopt a sedentary, stressful lifestyle and faulty food habits have made hair prone to either gray at prematurity or baldness at an early age. The prevalence of *Khalitya* is increasing rapidly day by day. *Khalitya* is a disease with *Vata-pitta* dominance; The *Tejas* of the body in association with *Vayu* and other *Dosha* scorches up the *Keshabhoomi* (scalp) abruptly producing the disorder *Khalitya*. Depletion of *Asthi Dhatu* causes hair loss. *Nidanapanchaka* is a great tool for the diagnosis of diseases. Here an attempt is made to review *Nidanapanchaka* or causes and pathogenesis of *Khalitya* (Hair fall). In the present review article, *Nidanapanchaka* is explained. ArcharyaSusruta has emphasized "*Sankshepta Kriya Yogo Nidana Parivarjanam*", by understanding the *Nidanapanchaka* in depth and understanding *Samprapti* helps in planning specific preventive Measures and Management of *Khalitya*.

Keywords: Kesha, Khalitya, Nidanapanchaka, Hair fall

INTRODUCTION

Beauty has a very important role in our life and the concept of beauty is gaining more and more attention globally day by day, and face is the mirror of our personality and healthy vibrant hair add a lot to the improvement of our confidence and personality. 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, with Hair fall as one among them. Generally, it's a physiological phenomenon, after the mid 50's, but it is considered a disease if it occurs before this period. 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" Hair loss affects interpersonal relationships as well as the professional lives of those suffering. Out of around 1 lac scalp hair, every day 50, 100 hair falls is normal², so seeing a few strands of hair on a brush is not necessarily dangerous, but more than this is one of the biggest problems in the health world. It is a universal problem that has affected both sexes of all races to different extents for as long as mankind has existed. The prevalence rate of hair fall is 58% in males and in females, in males' dandruff is 17.1% and baldness 50.4 %³.

Khalitya is a disease with Vata-pitta dominance. The Tejas of the body in association with Vayu and other Dosha scorches up the Kesha Bhoomi (scalp) and abruptly produces the disorder Khalitya. Depletion of Asthi Dhatu causes hair loss. AstangaSangraha stated that in Indralupta there is an abrupt fall of hair whereas gradual loss of hair is a sign of Khalitya. Sushruta has narrated two signs i.e., falling of hair and cessation of regrowth of the hair. Possessing Pitta Prakriti persons have more "Khalitya" (hair loss) rather than the other two Prakriti due to the respective properties of Pitta. Thus, the Pratyatmalinga of Khalitya may be taken as the gradual loss of hair.

The etiological factors in the text *Atilavana Sevena*, *Atikshara Sevena*, Milk with salt, *Viruddhahara*⁹etc. and the disease *Khalitya* also has been included in *UrdhvajatrugataRoga* and in that context; *Dush-*

tapratisyaya has been cited to be one among the *Nidana* and occurred due to the negotiation of *Dushtapratishyaya*. ¹⁰Shusurata described that an excessive intake of *Lavana* during pregnancy can cause congenital *Khalitya*. ¹¹

AIM AND OBJECTIVES

To understand the concept of etiopathogenesis of *Khalitya* (Hair Fall).

MATERIAL AND METHOD

Material has been collected from ancient Ayurveda texts, research journals, and electronic databases.

LITERATURE REVIEW

ETYMOLOGY

The literal meaning of the word *Khalitya* is falling off the hair. *Khalitya* is a disease in which the fall of hair occurs in various forms i.e., the hair either fallout completely or incompletely but pre-maturely. ¹²

DEFINITION

The commentary of Arun Datta specified that the gradual falling of hair should be called *Khalitya*. This gradual falling of hair slowly leads to baldness. ¹³ Kartika further differentiated *Khalitya*, *Ruhya*, and *Indralupta* by mentioning that *Indralupta* is a hair loss from beard and mustaches, *Khalitya* is a condition in which hair loss occurs only in the scalp and *Ruhya* is the entity in which hair loss occurs all over the body. ¹⁴

Based on the foregoing, it may be said that the gradual loss of hair from the scalp is known as *Khalitya*, so in this work, the word *Khalitya* is to be understood as per the above definition.

NIDANA PANCHAKA OF KHALITYA

HETU (ETIOLOGY)

There is no specific reference to the etiological factor of *Khalitya* in Ayurveda literature, but by analyzing the explanation of the pathogenesis of the disease and by collecting the scattered reference from texts, an indirect knowledge of etiological factors may be acquired.

Non-application of hair oil results in *Khalitya*¹⁵ and due to the overindulgence in *Kshara* and *Lavana* helps in the emersion of *Khalitya*. The *Virudhaahara*-like, simultaneous intake of *Lavana* (salt) with milk

in the diet induces *Khalitya* as observed in the people of Saurashtra and Bahlika. 16, 17, 18 In addition to this mentioned that by ignorance of Pratishyaya, Khalitya occurs as a complication 19. The effect of Nasya never has been Khalitya²⁰. Acharya Vagbhatta has enumerated Shiroroga under the caption of UrdhvajatrugataRoga and these are further subdivided into nine KapalagataVyadhi, Khalitya being one of them. There is no separate mention of the specific causative factor for Khalitya but the general etiological factors of Shiroroga can be considered as that of Khalitya which are stated as follows²¹Vegavidharana (Suppression of the natural urges), AbhyangDwesha (Grudge against massage), asatmyagandha (Inhalation of unwholesome odors), Ama (Undigested or semi-digested material), Raja (Dust), Dhooma (Smoke), Atapa (Heat), Hima (Cold), Avashyaya (Exposure to frost at night), Prajagarana (Waking at night), Divaswapna (Day sleep), sheetambusevana (The use of very cold water), Desha Kala Viparyaya (Abnormal clime and season), Atimaithuna (Excessive sex act), Prakvata (Facing headwinds), Manahtapa (Mental affliction), Madya (Intoxication), Rodana (Excessive weeping), Uchibhashya (Talking too loudly)

SAMPRAPTI (PATHOGENESIS):

There is no detailed description found in classics regarding the production of hair in particular, but it has been stated in the process of production of Dhatu when the metabolism of Asthi Dhatu occurs by its own AgniMajjadhatu emerges from Sara part and at the same time hair of scalp & body and nails form as Mala.²²Kesha is an important Updhatu of Majja.²³ The hair (*Kesha*) is the waste (*Mala*) of *Asthi* (bone) Dhatu. Hence anything detrimental to Asthi Dhatu will be harmful to the hair. When the skin & hair is exposed to the wind it causes aggravation of Vata-Dosha resulting in dryness. Depletion of Asthidhatu and sweat causes hair loss.24 The health of hair depends upon the health of bones and the skin. The oiling of hair is received from Kapha, softens from Pitta, and is black due to Vata. Pranavata conveys the sensations to the brain and for 'standing on ends' of the hair Vyanavata is responsible. The nourishment

of hair depends entirely upon the Rasa-Dhatu (lymph). De-arrangement in Rasadhatu causes premature graving as a resultant hair fall. As a whole, the health of hair depends upon Rasa-Dhatu (lymph) Asthi-Dhatu (bone), and all three Doshas. Optimum Majja and Medodhatu keep the hair oily.25 The description of Samprapti of Khalitya stated in different ancient texts of Ayurveda is as below. Regarding Samprapti, Charak opines that the provoked Tejas of the body in association with Vayu and other Dosha scorches up the Keshabhoomi (scalp) abruptly producing the disorder Khalitya. Chakrapani interrupts the word Teja in two ways while commenting on this topic, one is *Dehoshma* (body temperature) or Dehagni – Pachakapitta and the other is Pitta situated in the scalp. The causation of Khalitya by mainly two Doshas Vata and Pitta as Dehoshma is due to Pitta only. KaphaDosha is not considered in this Samprapti. He has given a thought on the prerogative of KaphaDosha too, in the causation of Khalitya by using the word 'Aniladyaih' i.e., Vata etc. Acharya Sushruta a well-versed surgeon, states in the KshudraRoga Adhikara, self-explanatory pathogenesis of Khalitya, Pitta combines with Vata and gets into the pores of hair (hair follicle) causing hair fall then Kapha along with Rakta obstructs the pores of those hairs and makes it impossible for further hairs to grow, thereby manifesting the disease condition called Khalitya, the involvement of all the three Doshaviz. Vata, Pitta, and Kapha along with Shonita in the occurrence of *Khalitya*.²⁶

Due to indulgence of *Hetu* i.e., intake of food as well as prolonged use of toxic substances which become harmful, they disturb the normal *Agni Vyapara* or digestion and metabolism. The *Sama Agni* may vitiate and result in *Manda*, *Tikshna*, or *Vishama*. The morbid state of *Agni* results in the condition of *Ajirna*, which is associated with *Ama* (undigested part of food). The *Ama* is an unwanted, harmful substance; when it circulates in the body, it vitiates the channels or transport system i.e., it causes *Strotodustiand* also vitiated *Pachaka Pitta*, *Samana Vayu*, *Vyana Vayu*, and *Rakta Dhatu*. The *Strotodustiat* the *Rasa Dhatu* level progresses in the *Rakta Dhatu*. The

vitiated *Rasa*, *Rakta* has a bad effect on the production of *MansaDhatu*.²⁷The skin and *Mansa* are associated, hence the vitiated *Mansa Dhatu* impaired the structure and the main functions of the skin, then *Bhrajaka Pitta Dusti* occurs so, that *Pittoshma* increases and there is *Lomakoopapaka* which affects the hair follicles and *Keshapata* occur.

Due to the indulgence of Hetu, there is Kaphaprakopa which leads to an increase in Klinatva. It causes the Strotorodha which affects the hair follicles and the ShirogataRomakoopa leading to Khalitya, and it also stops the formation of new glands, when Vata and Pitta both are aggravating together increase Laghu, Sukshma, and Rukshaguna. This Guna will have direct action on Asthidhatu which affects the reduction in concerned Dhatu. This may be localized or systematic, but Khalitya is localized. A reduction in Asthi Dhatu will reflect in the reduction of its Mala i.e., hair, then start the process of falling hair, and the combing up hair also become weak because of the above-said Laghu, Sukshma, and Ruksha Guna, when this Nidana continues its increase the localized temperature and makes the Klinatva of Kapha which is already in the Skandana form. This is the depletion form of Kapha. The depletion occurs due to Ama, Divaswapana, etc. The net

result of these pathological changes will make *Sroto-rodha*. Here the affected *Srotas* are *Raktavha* and *Romakoopa*. The *Raktavahasrotas*a turns of it *Ava-rodha*, so this *Rakta Prakopa* along with *Roma-kupaAvrodha* results in the arrest of the further growth of hair leading to *Khalitya*. The *Kapha Dosha* is dried up within the pores of the skin of the scalp thus obstructing the growth of new hairs, causing *Khalitya*.

Dosha:Tridoshaprakopaka

Vata: Samana, Vyan

Pitta: Pachaka, Bhrajaka

Kapha:Tarpaka

Dushya: Rasa, Ratka & Asthi Dhatu

Mala: Sweda, Kesha

Agni: Jatharagni, Rasagni, Raktagni&Asthyagni

Srotasa:Rasavaha, Raktavaha, Asthivaha, Swedava-

ha, Manovaha Srotodushti: Sanga

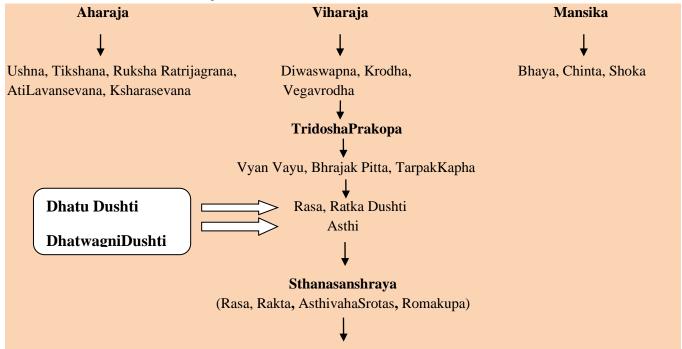
Udbhava Sthana: Amashaya

SthanaSamshraya: Rasa, Ratka &Asthi Vaha Strotas,

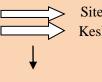
Romakoopa

Vyakta Sthana: Romakoopa/Keshabhoomi (Scalp)

Rogamarga: BahyaRogamarga Adhisthana: Keshabhoomi



Dosha DushyaSammurchana Keshabhoomi Dagdhatva



Site of Romakupa/ Keshabhoomi Kesha Patana&Shiramukha

Khalitya

PURVAROOPA (PRODROMAL SYMPTOMS)

Khalitya is not described as a separate entity and no specific *Purvaroopa* has been described. In Ayurveda literature, in such cases, the appearance of the symptoms in a very mild form may be considered *Purvaroopa*. In this way, the occasional loss of some hairs may be considered as *Purvaroopa* of *Khalitya*.

ROOPA (CLINICAL FEATURES)

Rupa of Khalitya is concerned very little explanation is found in Ayurveda classics. Acharya Sushruta has narrated two signs i.e., falling of hair and cessation of regrowth of the hair²⁸, while AstangaSangraha stated *Indralupta* there is an abrupt fall of hair whereas gradual loss of hair is a sign of *Khalitya*. Thus, the *Pratyatmalinga* of *Khalitya* may be taken as the gradual loss of hair ²⁹.

UPASHAYA

In the case of *Khalitya*, no specific homologation or unhomologation diet or drugs have been mentioned. Acharya Charak stated that the diet, drug, or behavior, which are opposite to the etiological factor of the disease, and which do not deteriorate the latter can be considered *Upashaya* (ref Ch. Ni. 1). Thus, the diet, drugs, and behavior, which are antagonists to *Vata Dosha*, *Pitta Dosha*, and etiological factors, can be considered as *Upashaya* in *Khalitya*.

DIFFERENTIAL DIAGNOSIS

Though the clinical diagnosis is usually straightforward, other conditions that typically need to be considered are:

KHALITYA

The gradual and generalized falling of hair over the scalp is called *Khalitya*. *Tejas* (*Pitta*) of the body in association with *Vayu* and other *Dosha* scorches up the hair root giving rise to *Khalitya*.

INDRALUPTA

The falling of hair over the scalp in a coined pattern, patch by patch, suddenly lost is called *Indralupta*. When the *KaphaDosha* combines with *Raktadhatu* it results in degeneration and shutting down completely of hair follicles thus leading to baldness called *Indralupta*.

PALITYA

Tejas of the body in association with *Vayu* and other *Dosha* scorches up the hair root giving rise to *Khalitya*, but if there is partial scorching then it gives rise to premature graying (*Palitya*).

DARUNAKA

Due to the derangement of *Vata* and *KaphaDosha* has signs and symptoms of *Daruna* (Cracked scalp), *Kandura* (Itching of the scalp), and *Ruksha* (Dryness of the scalp) called *Darunaka*.

BHEDA (TYPES)

There is a type of clinical feature based on *Dosha* involvement. Ashtanga Samgrahakara& Acharya Harita denoted this disease by the name of *Keshaghna* classified *Khalitya* (*Visheshrupa*) in four types' of viz.³⁰.

VATAJA KHALITYA: In this type, *Kesha Bhoomi* appears as if it is *Agnidagdha* and it becomes *Shyava* and Aruna. Acharya Harita stated that *Ruksha* and *Pandura's* scalp.

PITTAJA KHALITYA: In this type, the color of the scalp is *Peeta*, *Neela*, and *Harita*. The scalp is surrounded by the *Siras* (veins). Sweat may be found all over the scalp. Acharya Harita stated that Red and burnt the scalp.

KAPHAJA KHALITYA: In this type, the color of the scalp is more or less the same as the color of skin but here it is *Ghana* and *Snigdha* in appearance and the color tends towards whitish tinge. Acharya Harita stated that *Singha's* scalp.

TRIDOSHAJA KHALITYA: In this type of *Khalitya*, characteristics of all three *Dosha* are observed, the scalp looks burnt, and it bears a nail-like appearance. Acharya Harita stated that Bears are characteristic of all the *Dosha*.

SADHYA-ASHADHAYTA (PROGNOSIS)

In Charaka or Shushruta Samhita prognosis of *Khalitya* is not depicted, while in Ashtanga Samgrah, some conditions of the scalp of the patient, when the disease turns out to be *Asadhya* (incurable) i.e., *Ekdoshaja* types, are said to be *Sadhya*. Both of them have opined about the *Tridoshaja* or *Sannipataja* type to be *Asadhya*, burnt-like appearance, nail like appearance, absolute hair loss, and injury of the scalp due to burn.

PATHYAPATHYA

There is no clear-cut description of *Pathyapathya* of *Khalitya* in *Samhita*, but as the disease, *Khalitya* is related to *Shiroroga*, *Twakavikar*, *Rakta Vikara*and*Dhatukshayajanya* or due to *Mansik Nidan Janya* (psychological disturbance). *Rasayana*, *Rakta Dosha Prashamana*, *Vayasthapana*, *Twachya*, and *Madhya Dravaya* help prevent the *Khalitya*.

DISCUSSION

The physician, who knows the proper diagnosis technique, succeeds every time in the treatment. These five elements of *Nidan Panchaka* help in making an accurate diagnosis. By knowing the *Nidanapanchaka*, physicians can diagnose the disease at an earlier stage and not only plan treatment but prevent further complications also. It is a tool for the diagnosis of disease at starting to end level. The naming of disease is not given that much importance, but knowing the definite etiological factors, *Dosha* vitiation, pathogenesis, or progress of disease and checking it at an early stage is given prime importance. The first knowledge of *Hetu* is important to avoid the occurrence of disease because the basic principle of treatment is *Nidanparivarjan*.

In Charak Samhita, 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*.

Each component of *Nidanapanchaka* individually helps to make a correct diagnosis. If one component indicates a disease, then other aspects of *Nidanapanchaka* confirm the diagnosis. This applies to *Khalitya* (Hair fall) too. A good diagnosis is a basis of good treatment which gives fame and trust to a physician.

CONCLUSION

Khalitya (Hair fall) is the most common condition in young and old age. In the pathophysiology of Khalitya, there is the involvement of Rasa, Rakta Mamsa, and Asthivaha Srotas. Hair fall is a cosmetic disorder affecting patients psychologically. Millions of people worldwide suffer from hair loss. Hence gaining the knowledge of Nidana Panchak helps the physician to get the proper path for treating the disease. So along with drug interventions, emphasis must be given to the high-risk factors i.e., dietary and lifestyle modifications, socioeconomic, behavioral, and nutritional issues and to promote a healthier lifestyle.

REFERENCES

- 1. https://archive.org/stream/OvidTheArtOfLoveAndOtherPoems/Ovid_2_Art_of_Love_and_others_djvu.txt
- https://www.aad.org/public/diseases/hairloss/insider/shedding
- Verman S Dr. Priyadarshini Mahendra et al. Study on Hair Fall with Hair Related problems among Males of Age 18-50 Years: Study on Chennai Based Population 2018, Oct, Vol-12(10): LC09-LC12
- Shastri Pt. Kashinath, Charaksamhita of Agnivesha, elaborated by Charaka Varanasi: Vol. I Sutrasthana Ch 28 Chaukhambha Sanskrit Sansthan, 1st edition; Reprint 2009, verse 16.
- Murthy Srikantha, K.R, Ashtanga Hridaya, Varanasi, Chowkhamba Krishnadas Academy, 2004; Ch 11 verse 22
- 6. Murthy. Srikanth K. R, Ashtanga samgraha of vagbhata vol-2. uttarasthana 9th edition

- 2005.varanasi:chaukhambha orientalia ; Ch 27 verse 19; pg288
- Shastri Kaviraj Ambikadutta, Sushuta Samhita, Varanasi: Chaukhambha Sanskrit Sansthana part 1st, Nidanasthana ch.13 edition 2011, verse 32
- 8. Shastri Pt. Kashinath, Charaksamhita of Agnivesha, elaborated by Charaka and Dridhabala, Varanasi: Vol.IVimanasthana Ch 8, Chaukhambha Sanskrit Sansthan, 1st edition; Reprint 2009, verse 97.
- Shastri Pt. Kashinath, Charak Samhita of Agnivesha, elaborated by Charaka and Dridhabala, Varanasi: Vol.IVimanasthana Ch 1, Chaukhambha Sanskrit Sansthan, 1st edition; Reprint 2009, verse 17.
- Shastri Pt. Kashinath, Charaksamhita 2nd part, of Agnivesha, elaborated by Charaka and Chakrapanidatta, Edited with Vidhyotini Hindi commentry Varanasi: Chaukambha Sanskrit Sansthana6th edition 2000; page no- 737.
- 11. Shastri Kaviraj Ambikadutta, Sushuta Samhita, Varanasi: Chaukhambha Sanskrit Sansthana part 1st, Sharirasthana ch.13 edition 2011, page no- 35
- 12. Vachaspatyam 3rd Vol. Pg. 2244, N.V. S.pg. 260, Vaidyakashabdasindhu
- 13. Murthy Srikantha, K.R, Ashtanga Hridaya, Commentary by Arundatta Varanasi, Chowkhamba Krishnadas Academy, Uttartantra 2004; Ch 23 verse25
- Madhavakara Madhava Nidanam translated into English by Ayurveda –Vidvan Prof. K.R. Srikantha Murthy Reprint- 2009 publisher's chaukhamba Orientalia, Varanasi.Ch. 55 verse 28-29
- Shastri Pt. Kashinath, Charaksamhita of Agnivesha, elaborated by Charaka Varanasi: Vol. I Sutrasthana Ch 5 Chaukhambha Sanskrit Sansthan, 1st edition; Reprint 2009, verse 82-83
- 16. Shastri Pt. Kashinath, Charaksamhita of Agnivesha, elaborated by Charaka Varanasi: Vol. I Vimansthana Ch 1Chaukhambha Sanskrit Sansthan, 1stedition; Reprint 2009, verse 17-19
- 17. Shastri Pt. Kashinath, Charaksamhita of Agnivesha, elaborated by Charaka Varanasi: Vol.ISutrasthana Ch26 Chaukhambha Sanskrit Sansthan, 1stedition; Reprint 2009, verse 43.
- 18. Murthy Srikantha, K.R, Ashtanga Hridaya, Varanasi, Chowkhamba Krishnadas Academy, Sutrasthana 2004; Ch 10 verse 12

- Shastri Pt. Kashinath, Charaksamhita of Agnivesha, elaborated by Charaka, andDridhbala, Varanasi: Vol. II Chikitsasthana Ch 26 Chaukhambha Sanskrit Sansthan, 1st edition; Reprint 2009, verse 107-109
- Shastri Pt. Kashinath, Charaksamhita of Agnivesha, elaborated by Charaka Varanasi: Vol. I Sutrasthana Ch5Chaukhambha Sanskrit Sansthan, 1stedition; Reprint2009, verse 95.
- Murthy Srikantha, K.R, Ashtanga Hirdaya, Varanasi, Chowkhamba Krishnadas Academy, Uttartantra 2004; Ch 23 verse 2
- Shastri Pt. Kashinath, Charaksamhita of Agnivesha, elaborated by Charaka, andDridhbala, Varanasi: Vol. II Chikitsasthana Ch 15 Chaukhambha Sanskrit Sansthan, 1st edition; Reprint 2009, verse 18.
- 23. Sarngadharacarya, Sarngadhara Samhita, Chaukambaorientalia, Varanasi,8th edition, 2011 Purva Khanda Ch 7, verse 151-152&UttarKhanda Ch 5, verse 16
- 24. Shastri Kaviraj Ambikadutta, Sushuta Samhita, Varanasi: Chaukhambha Sanskrit Sansthana part 1st, Sutrasthana ch.11 edition 2011, Verse 15
- Shastri Kaviraj Ambikadutta, Sushuta Samhita, Varanasi: Chaukhambha Sanskrit Sansthana part 1st, Sutrasthana ch.35 edition 2011
- Shastri Kaviraj Ambikadutta, Sushuta Samhita, Varanasi: Chaukhambha Sanskrit Sansthana part 1st, Nidanasthana ch.13 edition 2011Verse 32-33
- Shastri Pt. Kashinath, Charaksamhita of Agnivesha, elaborated by Charaka, andDridhbala, Varanasi: Vol. II Chikitsasthana Ch 15 Chaukhambha Sanskrit Sansthan, 1st edition; Reprint 2009, verse 16.
- Shastri Pt. Kashinath, Charaksamhita of Agnivesha, elaborated by Charaka, andDridhbala, Varanasi: Vol. II Chikitsasthana Ch 15 Chaukhambha Sanskrit Sansthan, 1st edition; Reprint 2009, verse 16.
- Murthy Srikantha, K.R, Ashtanga Sangraha, Varanasi, Chowkhamba Krishnadas Academy, Uttartantra 2004; Ch 27
- Murthy Srikantha, K.R, Ashtanga Hridaya, Varanasi, Chowkhamba Krishnadas Academy, Uttartantra 2004; Ch 23 verse 30

Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: Khushboo Pandey & Sanjay Srivastava: Etiopathogenesis of khalitya (hair fall) – a conceptual study. International Ayurvedic Medical Journal {online} 2023 {cited August2023} Available from:

http://www.iamj.in/posts/images/upload/2054 2060.pdf