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STUDY THE HETUS OF KHALITYA WITH SPECIAL REFERENCE TO BHRUHATRAYI

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ABSTRACT:

In this context, Khalitya i.e. (early hair fall) are explained in various texts of Ayurveda. Hair fall is a physiological phenomenon, generally after the mid forties, but it is considered as a disease if it occurs before this period.In most of the Ayurvedic texts Khalitya is explained under "Kshudra- Roga "i.e. minor diseases, but now a days these are the most burning problems in the society. On television also there are lots of advertisements related with various hair products. In cosmetics also these diseases are cared a lot. Some advanced branches of medical science are introduced for hair related problems as "Trichology."

As the advancement of busy professional and social life, overexertion, mental stress, exposure to pollution, improper food intake, altered sleeping habits, play very much important role in aging process of a person in early life. In which hairs are most important part to contribute the personality of the individual, now a days, so to add charm to his personality „Hair Care" is necessary.

Key Words- Agni , utpatti-sthiti-laya , thyroid

INTRODUCTION:

Loss of hair is termed as alopecia. This is of two types permanent and temporary.Khalitya is commonest cause of alopecia. In Khalitya, Bhrajak pitta sites in skin and roma kupa (opening of hair follicle) get vitiated vatadosha Rakta and Khapha dosha block opening of new hair follicle due to which production of new hair stop.overall in Khalitya,hair fall occurs and new hair not appear that leads to baldness.Khalitya is tridoshaja vyadhi i.e. Vata, Pitta, Kapha with Rakta dosha.All doshas are vitiated but have predominanceof Pitta and Rakta dosha mainly.

As Charakacharya says in reference with features of the children blessed with a long life such as, discrete, soft, sparse, oily, deep rooted and black hairs. It shows importance of hairs in life of individual.

Khalitya is commonly seen in the age group of 18-40 years. According to survey up to 40% of men and 25% of women in India are victims of hair fall. It is a slowly progressing disorder. People living in sedentary ways of life, stress induced hectic and unhealthy schedules along with indiscriminate dietary habits result in malnutrition, Anemia, Hypocalcemia& low amino acid level causes many problems which directly reflect in lossof hair. For khalitya, nasya is one of the choices of management for its prime role in maintaining hair growth and preventing khalitya.

AIM:

"To Study the Hetus of Khalitya with special refrence to Bhruhatrayi."

OBJECTIVES:

1. To study the hetus discussed in the classical texts in Khalitya.
2. To study other hetus associated with Khalitya which are observedin modern lifestyle.

HYPOTHESIS:

H_0: Hetus Of Khalitya seen in modern era as told in bhruhatrayi.

H_1: Hetus Of Khalitya not seen in modern era as told in bhruhatrayi.

Inclusion Criteria :

1. The individuals of age group 15-45 years were selected for thestudy. This group is selected because the people are most affected bythese diseases in this age group.

2. Individuals of both sexes were selected.

Exclusion Criteria:

1. The individuals of age group below 15 years & above 45 years.
2. The individuals suffering from chronic skin manifestations wereexcluded from the study.
3. Irregular individuals.

Sample size calculation : At 95 % confidence level minimum sample size needed is 100 (ref.www.samplesurvey.com)

Methods of collection of data:

1. Pre-diagnosed individuals were selected from hospital attached to our institute. 100 individuals will be selected on the basis of simple randomized sampling procedure, after proper inclusion and exclusioncriteria.

2. The individuals participating in the project were provided a questionnaire (attached in Annexure) to collect the informative data wherever necessary.

PREVIOUS WORK DONE:

1. Role of Nasya and Shirodhara abhyanga along with Narsimha ghrita in management of Khalitya: A comparative study by,Dr.Jotishi R.Hetal Jamnagar 2003.
2. Clinical Study on etiopathogenesis of khalitya and its management withGunja taila and keshya drugs combination by Dr.Namrata Sharma, Jamnagar 2006.
3. A Phamaco- clinical Study on Bhringraja in the management of Khalityaby Dr.Mehata Deepa Jamnagar 2001.
4. Study of etiological factors in Khalitya and Palitya Samprapti.by Dr.Malhar S.Joshi MUHS Nashik 2011.

NIDAN PANCHKATTVA OF KHALITYA

Khalitya - Charaka, Sushruta

Khalati - Charaka, Ashtanga Samgraha, Ashtanga Hridaya

Chacha - Ashtanga Hridaya **Indralupta -** Sushruta, Bhoja**Keshaghna -** Harita

Ruhya - Sushruta, Bhoja

Rujya - Ashtanga Samgraha

The examination of a diseased person should be done by Darshana, Sparshana and Prashna, whereas that of the disease by Nidana (etiological factors) Purvarupa (premonitory signs and symptoms), Rupa (Signs and symptoms), Upashaya and Samprapti (pathogenesis). Thus, to understand the disease Khalitya above five factors would be described.

HETU (ETOLOGICAL FACTORS)

So far as disease Khalitya is concerned there is no clear description regarding the causative factors of Khalitya, but by analyzing the explanation of the pathogenesis of the disease and by collecting the scattered reference from Ayurvedic texts, anindirect knowledge of etiological factors may be acquired.

Acharya Charaka has said that "Teja along with Vatadi Dosha, burn the Keshbhoomi to produce Khalitya". Chakrapani, while commenting on this, points out that Dehoshma is to be understood by the word Teja and Dehoshma is directly proportional to Pitta (Chakrapani – Ch. Chi. 26/132).

Acharya Sushruta has encapsulated the pathogenesis in following way, that Pitta along with Vata enters into the Romakoopa (hair roots) and produces Khalitya whereas the augmented Kapha along with Rakta obstructs the Romakoopa thus preventing the production of new hair.

Thus observing the pathogenesis described by different Acharya, it can besaid that the Vata, Pitta and Kapha Dosha and Rakta Dushya are the maininternal causative factors of Khalitya. In addition to this, Acharya Charakahas mentioned various factors which vitiates Vatadi humors by which Shirogata Rakta also gets vitiated and gives rise to different Shiroroga. According to Vagbhatta, Khalitya comes under the roof of Shiroroga. So, the etiological factors mentioned by Acharya Charaka can be understood as that of disease Khalitya (Ch. Su. 17/8-14; A.S. Ut. 27).

Charaka in Vimanasthana, while describing the disorders occurring due to the over indulgence in Kshara, Lavana and Viruddha Ahara has mentioned the occurrence of Khalitya as a consequence of it. It has been mentioned that the Viruddha Ahara like, simultaneous intake of Lavana (salt) with milk in the diet induces Khalitya. Thus, it can be said that a person habituated to excessive Lavana or Kshara intake and taking Viruddha Ahara in routine is prone to have Khalitya (Ch. Vi. 17- 19).

Vegavidharana - Suppression of the natural urges Abhyanga Dwesha - Grudge against massage Asatmya Gandha - Inhalation of unwholesome odours Ama - Undigested or semi-digested material

Raja - Dust Dhooma - SmokeAtapa - Heat Hima - Cold

Prajagarana - Waking at nightDivaswapna- Day sleep

Sheetambu Sevana - The use of very cold water Desha Kala Viparyaya - Abnormal clime and seasonAtimaithuna - Excessive sex act

In addition to this Acharya Charaka, in Chikitsa Sthana 26 has mentioned that by ignorance of Pratishyaya, Khalitya occurs as a complication. – (Ch. Chi. 26/107-109)

Nidan (Etiological Factors) in Khalitya by variousauthors at a glance:

Sr.No.	Roopa	Su.	Ch.	M.N	A.S.	A.H	B.P.	Y.R.
1	Krodha	+	-	+	+	+	+	+
2	Shoka	+	-	+	+	+	+	+
3	Shrama	+	-	+	+	+	+	+
4	Lavan Ras Ati-sevan	-	+	-	-	+	+	-
5	Kshara Ati-sevan	-	+	-	-	-	-	-

6	Upekshit Dushta Pratishyay	-	+	-	-	-	-	-
7	Dhum Sevan	-	-	-	+	+	-	-
8	Atap sevan	-	-	-	+	+	-	-
9	Ratri Jagaran	-	-	-	+	+	-	-
10	Vega Vidharan	-	-	-	+	+	-	-
11	Madya Pan	-	-	-	+	+	-	-
12	Viruddha Ahar	-	+	-	-	-	-	-
13	Ushar bhumi	-	+	-	-	-	-	-
14	Diva swapna	-	-	-	+	+	-	-
15	Pitta Prakruti	-	+	-	+	+	-	-

HAIR CARE IN AYURVEDA

In the chapter of Dinacharya, Ritucharya hair care is discussed indirectly.Here, they suggest some procedures which keep hair healthy and attractive. Some of them are as follows :

Moordha Taila :

Oil should be regularly applied on head (scalp), it is called MoordhaTaila also. Adoption of this procedure in routine makes the scalp revitalized, keeps hair healthy, black and firm rooted, induces sleep and keeps away Khalitya and Palitya (Ch. Su. 5/81).

Nasya :

It has been described in Charaka Samhita that administration of Nasya in proper time with proper method keeps eyes, ears and nose of the person healthy. The hair of that person does not turn gray and he does not suffer from hair falling. His hair growth is also accelerated (Ch. Su. 5/57-58). Above sentences shows the importance of Nasya to preventand to cure the

diseases of hair like Khalitya and Palitya.

Snana :

The process of taking bath is called Snana in Ayurvedic texts. According to Acharya Charaka, Snana is pious, vitalizer, aphrodisiac,expeller of fatigue, sweat harmful things etc. from the body and an enhancer of life. (Ch. Su. 5/25)

Acharya Sushruta has given some additional information of Snanain context of hair fall that the head and hair should not be washed with hot water or with very cold water. He adds that bathing should be done.According to season and geographical distribution, but the overhead bathwith hot water should be avoided always (Su. Chi. 24/57-61).

Acharya Vagbhatta adds that pouring warm water over the body bestows strength but the same over the head makes for loss of strengthbut the same over the head makes for loss strength of the hair and eyes(A. H. Su. 2/17).

Dhoomapana :

In Charaka Samhita, in the topic of Dinacharya, the benefits of Dhumapana are described. Along with other benefits it is said to cure theKhalitya and Palitya, further it also improves the health ofhead and senses (Ch. Su. 5/30-31).

According to Acharya Sushruta inhalation of medicated firms improves the firmness of hair on the head, beard and teeth (Su. Chi.40/15).

Kshaurkarma :

According to Acharya Charaka, hair cutting (Kalpana) and propertying (Samprasadhana) of hair of scalp and beard should be done regularly (Ch. Su. 5/99).

Acharya Sushruta says that the management of hair (Kesha Prasadhana) should be done with Keshaprasadhani (combs and brushes). It is also saidthat it is Keshya and aborter of Raja, Mala, Jantu etc. and increases the beauty of hair. Acharya adds that by regular cutting of hair a person may achieve vigor, look etc. (Su. Chi. 24/73).

According to Acharya Vagbhatta, one should not allow the hair, nailsand moustaches grow long. It must be trimmed regularly (A. H. Su.
2/31).

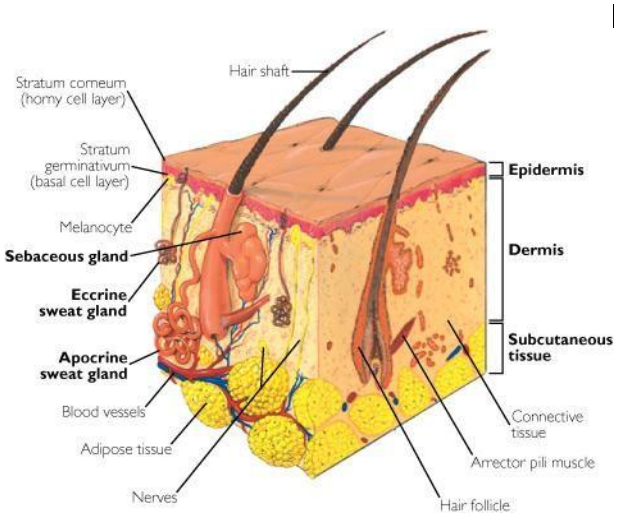
Ushnisha :

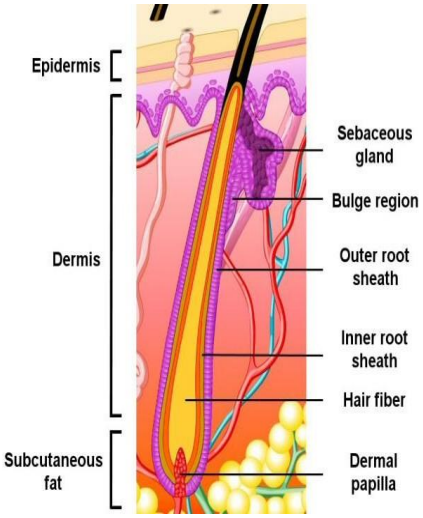
The wearing of Ushnisha (turban) on head protects the hair from wind, heat, dust etc. and is said to be pious and beneficial for hair (Su. Chi. 24/75). Thus, there are many types of daily regimens described forthe care of hair. Acharya Sushruta says that the hair should not be stretched with finger, nails nor should be rubbed with force or shaken wildly in wind (Su. 24/95).

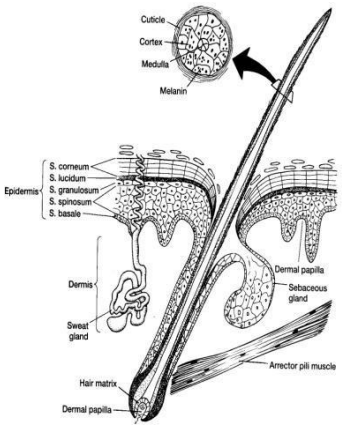
In this way there is a proper guideline in Ayurvedic texts to keep the hair in healthy status. All these small advises have long lasting effectson hair and if we don‟t pay attention to them we are bound to pay the penalty.

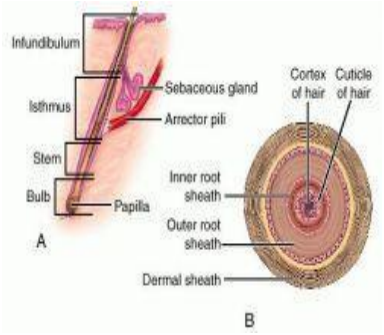
MODERN REVIEW:

Structure of Skin & Hair Follicle:









The skin is the second largest organ in the body and of primary Importance. The skin has specialized appendages like sweat gland, hair follicle, sebaceous gland etc.

The skin has a diverse range of functions to perform like –

1. To give support Excretion
2. Maintain body temperature
3. Immune response
4. Protection
5. Production of Vitamin D

Sensory function

In many of these properties of skin the role of hair is significant.The key role of hair is to provide protection against heat loss. Hair traps air adjacent to skin and thus it provides invisible insulating layer. Specialized hair such as eyebrows and eyelashes protects that particular organ and related system from foreign particles, bacteria etc. Hair fiber may also increase the surface area for faster evaporation of sweat from neighbouring apocrine glands. Some hair follicles have a highly developednerve network around them, which plays a pivotal role in providing sensory and tactile information about the environment. Consequently, thehair follicle is of great importance for the survival of mammals.

The hair is not significant importance just biologically but also through cosmetic and commercial perspective. The secondary function of hair – To make the human personality attractive – is now in focus. Hair styles are used to make a statement, to identify the individual with a particular function of society. Hair is the foundation for a multimillion dollar industry focused on removing unwanted body hair plus presenting, argumenting and preserving scalp hair.

DISEASE REVIEW - MODERN VIEW:

Diffuse hair loss is a very common complaint in practice and though a simple complaint their patients are seriously concerned about it. Patient notices his hair entangled in comb or brush, thinning of the scalp hair subsequently raising his level of worry. In modern science, many types of alopecia are described in which partial or total hair loss may be present. But here the diffuse hair loss has been given primary concentration.

SYNONYMS:

1. Defluvium capillorum.Diffuse hair loss.
2. Falling of hair.

ASSOCIATED SYMPTOMS:

Associated symptoms may be present depending upon etiological factors like itching of scalp in fungal infection, burning and redness of scalp in chemical burn, symptoms of underlying diseases like anaemia, hypothyroidism, hyperthyroidism, etc. may be present simultaneously.

ETIOLOGICAL FACTORS:

Each and every disease has its own causative factors, knowledge ofwhich is inevitable for prompt treatment.

1. Hormonal Imbalance
2. Increase in testosterone.
3. After delivery.
4. Intake of contraceptive pills.
5. Diseases or Illness:
6. Severe infection.
7. Hyper pyrexia like typhoid, malaria.
8. Thyroid disease i.e. Hyperthyroidism, hypothyroidism.
9. Alopecia.
10. Fungal infection of the scalp.
11. Dandruff.
12. Nutritional Deficiency:
13. Low serum protein.
14. Low serum iron.
15. Medication:

16. Cancer.

17. After Major Surgery, Chronic Illness.3.Stress.
18. Due to Mechanical Damage.

19. Trichotillo-mania.

20. Hair styling treatment.

21. By combing with force or combing in wet hair, rubbing of the hair etc.

22. Hair drying.

23. Others:

24. Pollution.

25. Over exposure to sun.
26. Use of strong chemical containing shampoo, hair dye.

27. Use of hard water.

28. Congenital Defects of Hair Shaft:

29. Newly Find Hair Loss Gene.

PATHOGENESIS:

As described in earlier pages, falling of hairs occurs due to so many etiological factors. The pathogenesis also varies as per the etiological factor involved. So, pathogenesis according to related etiological factors isdescribed as under.

Hormonal Imbalance:

Since hormone both stimulates hair growth and cause hair loss, hormonal changes have the biggest impact on hair loss. This can affect both men and women in the following way.

Hair loss caused by Androgen DHT:

This is the most common cause of hair loss and affects both genders equally. Everyone has DHT (Di Hydro Testosterone) but onlysome people are affected with the hair loss due to it. So, there has to be another factor is the presence of great number of androgen receptor in large number in a follicle is inherited genetically.

Fall Due To Intake of Contraceptive Pills:

Women, who have a genetic predisposition to suffer fromandrogenic alopecia, can suffer from it at a much younger age by taking the contraceptive pills. The hormonal change that occurs triggers the onset of androgenic alopecia. 2 – 3 months after the withdrawal of the medicine the woman may notice shedding of hair. This may continue for 6months.

Hair Falling After Delivery:

After delivery, many women experience a loss of hair; this is causedmany hairs simultaneously entering the resting (telogen) phase. Within two to three months after giving birth, some women will notice large amounts of hair coming out in their brushes and combs. This can last one to six months, but resolves completely in most cases. This condition is caused by the hormonal changes that take place after a woman‟s body recovers from her pregnancy.

Hair falls after Disease:

Hair falling after systemic disorders like hyper-pyrexia, thyroid malfunction, and severe infection is always seen, since the follicle is very sensitive to minute imbalances of the body.

Alopecia:It includes Alopecia areata, alopecia totalis, alopecia universalis,etc.

Alopecias are a major cause of hair falling. In this disease the germinativezones of hair follicles, surrounded by T Lymphocytes are seen. As the result of reaction of immune system to hair follicle, hair falling occurs. Occasionally it can be associated with disease like hyperthyroidism, hypothyroidism, vitiligo, etc.

Hair Fall Due to Dandruff:

It is not a disease but a condition of skin – seborrhic dermatitis (seborrhea) causing excessive oily skin and favours a fungal infection of hair of scalp and other areas of body. it makes allergic types of reactionof skin i.e. reddening and itching with thin scale formation of skin (fur, feathers etc.). The fungus called Malassezia furfur (variously known as synonyms). The skin lesion is called tinea versicolor. The lesion causing fawn to brownish red coloured scales on trunk, and occasionally also on

axillae, groin, thighs, face, and scalp. It is a type of superficial mycosis,which is, chronic

and asymptomatic in many cases.

Hair Fall Due to Nutritional Deficiency:

Nutritional deficiency especially those related with low serum protein and low serum iron may cause hair loss. In protein malnutrition tosave total protein content, the body shifts growing hair into the resting phase. If this happens, massive amounts of hair shedding can occur 2 to 3 months later. As a sign of this, hair can be pulled out by the roots in fairamount and easily.

Hair Fall Due to Medication:

Some drugs like β blocker, Flucanozole, heparine, lithium, maycause temporary hair shedding in a small percentage of people.

Chemo Therapy and Radiation:

Chemo therapy and radiation are utilized for curing carcinoma. It may cause hair loss because it stops hair cells from dividing. After 1 to 3 weeks of treatment, hairs break off and become thin. Patient can lose up to 90% of their scalp hair. The hair will regrow after treatment ends.
Hair Fall Due to Stress:

Stress may trigger the onset of genetic hair loss or may worsen existing Androgen hair loss which occurs after 3 months of the stressful event has occurred. In most cases it is temporary, if the patient is not predisposed to Androgenic Alopecia.

Hair Fall Due to Mechanical Damage:

Damage to the hair can be self inflicted either by intentional or unintentional means. Some of them are as follows:

Trichotillomania or Hair Pulling:

Some children and less often adults have habit of pulling or twisting hairs.This can be part of a behavioural problem. If the behaviour is not stopped, permanent hair loss can result from the constant stress on the hair.

Hair Styling Treatment:

Excessive use of hair clips may break the hairs. Chemical treatments of the hair like bleaching, straightening, relaxing or permanentwaving are popular in present era. Hair can become weak and fragile ifany of this chemicals are of poor quality or if used too often. Some of them may cause chemical burn and thus damaged hair follicle. Hair shaft injury resulting in premature desquamation of inner root sheath is caused by a number of cosmetic products. Shampoo or hair dye containing strong chemicals like selenium may induce same reaction. Forceful massage, vigorous brushingwith old and poor quality, nylon brushes and combing in wet hair may also cause hair loss. The hair becomes more fragile and breaks at various lengths.
Hair Fall Induced By Some Other Functions:

Pollution, over exposure to sun and use of hard water also causes hair falling. These factors damage the structure of the hair.

Congenital Defects of Hair Shaft:

It is seen rarely. It includes in following defects –

Pilli Corti – In this congenital defect hair becomes flattened, twisted and reflects light unevenly.

Menke Syndrome – In this syndrome kinky hair are associated with retarded mental and physical growth along with copper deficiency.

NEWLY FOUND HAIR LOSS GENE:

In most of the advances in genetics we hear about the newsinvolved in one or two genetic inheritance pattern. One such gene is the recent "Hairless" gene identified in humans by Angela Christiano and friends at Columbia University (Ahmad 1998). The "hairless" gene causes the permanent hair loss disease "generalized atrichia". In the Mendelian genetics of generalized atrichia a recessive gene is passed from parent to child. This research technique forms a template for finding on other genes involved in hair growth and hair disease (w.w.w.hairlosshelp.com)

SYMPTOMS:

Though diffuse hair falling is the cardinal symptoms of this disease, some specific pattern of hair falling, according to the etiological factor canbe seen. Some associated symptoms may also be observed depending upon the type of etiological

factors. There is also variation in evolvement and pattern of hair fall specific to underlying pathology.

In hair loss caused by androgenic DHT, men generally have hair loss concentrated in a specific pattern form the front to the crown. Whereas women tends to have thinning throughout their head without specific pattern. But in general recession of anterior scalp line appears in men and some women.

In Alopecia areata well circumscribed circular areas of hair loss, 2-5 cm in diameter are seen.

In tinea capitis infection, hair loss may be minimum with scaling or discrete patches with black dots may be present.

In hair loss due to trauma, broken hairs with irregular out line are characteristic. Where as in Trichotillomania hair may show the picture with irregular length of hair due to pulling.

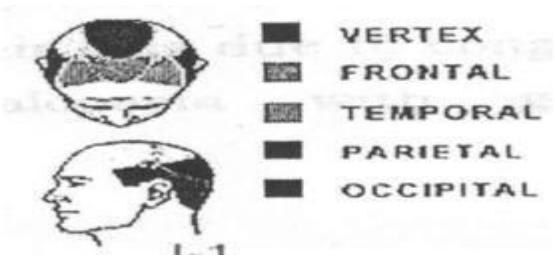
PROGNOSIS:

Hair falling due to hormonal imbalance i.e. after delivery or by intake of contraceptive pills is easily curable but it can take 1 to 6 months.

Hair loss due to nutritional deficiency, medication, chemotherapy is also reversible.

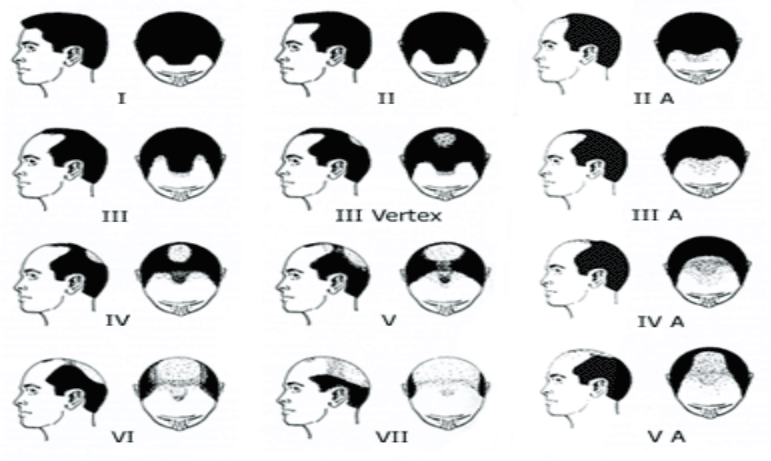
REGIONS OF SCALP:

There are also different regions of the scalp where hair loss occurs, each area has a name which describes the respective region where the hair loss is taking place.



The most commonly used chart for men is the one developed by Dr.Hamilton and then later modified by Dr. O‟tar Norwood called the **Norwood**

– Hamilton scale.



THE NORWOOD/HAMILTON SCALE

3.5.3 Ludwig Scale

Women who suffer from Androgenic Alopecia have a pattern of hairloss called Female Pattern Loss. This loss does not occur in the same pattern as men but appears as a diffuse thinning throughout the scalp. There is a chart designed to classify Female Pattern loss called the **Ludwig Scale**.

Table No.2 Distribution of various hetus of Khalitya:

SR. NO.	Hetu	Median	Mean	S.D.	95% C.I.
1	Madhur rasasevan	1.000	0.950	0.702	[0.812, 1.088]
2	Amla rasasevan	1.000	0.850	0.702	[0.712, 0.988]
3	Lavana rasasevan	2.000	2.300	0.628	[2.177, 2.423]
4	Katu rasasevan	1.000	0.770	0.723	[0.628, 0.912]
5	Tikta rasasevan	1.000	1.040	0.828	[0.878, 1.202]
6	Kashaya rasasevan	0.000	0.510	0.798	[0.354, 0.666]
7	Atapsevan andDhumsevan	2.000	1.920	0.787	[1.766, 2.074]
8	Vegavidharan	1.000	1.470	0.881	[1.297, 1.643]
9	Ratrijagran	2.000	1.670	0.753	[1.522, 1.818]
10	Shrama	2.000	1.780	0.811	[1.621, 1.939]
11	Vyasana	1.000	1.090	0.996	[0.895, 1.285]
12	Krodha,Shoka,Chinta	2.000	1.880	0.756	[1.732, 2.028]

The median Madhur rasasevan score was 1 and mean score was 0.950 with S.D. of 0.702. The 95% confidence interval of mean was [0.812, 1.088].The median Amla rasasevan score was 1 and mean score was 0.850 with S.D. of 0.702. The 95% confidence interval of mean was

[0.712, 0.988].The median Lavana rasasevan score was 2 and mean score was 2.300 with S.D. of 0.628. The 95% confidence interval of mean was [2.177, 2.423].The median Katu rasasevan score was 1 and mean score was 0.770 with S.D. of 0.723. The 95% confidence interval of mean was [0.628, 0.912].The median Tikta rasasevan score was 1 and mean score was 1.040 with S.D. of 0.828. The 95% confidence interval of mean was [0.878, 1.202].The median Kashaya rasasevan score was 0 and mean score was 0.510 with S.D. of 0.798. The 95% confidence interval of mean was [0.354, 0.666].The median Atapsevan and Dhumsevan score was 2 and mean score was 1.920 with S.D. of 0.787. The 95% confidence interval of mean was [1.766, 2.074].The median Vegavidharan score was 1 and mean score was 1.470 with S.D. of 0.881. The 95% confidence interval of mean was [1.297, 1.643].The median Ratrijagran score was 2 and mean score was 1.780 with S.D. of 0.811. The 95% confidence interval of mean was [1.621, 1.939].The median Shrama score was 2 and mean score was 1.780 with S.D. of 0.811. The 95% confidence interval of mean was [1.621, 1.939].The median Vyasana score was 1 and mean score was 1.090 with S.D. of 0.996. The 95% confidence interval of mean was [0.895, 1.285].The median Krodha, Shoka, Chinta score was 2 and mean score was 1.880 with S.D. of 0.756. The 95% confidence interval of mean was [1.732, 2.028].

Graph No.5.1.3: Distribution of various hetus of Khalitya:

Table No.3: Distribution of Khalitya:

Median	**Mean**	**S.D.**	**95% C.I.**
2.000	1.790	0.656	[1.661, 1.919]

Median Khalitya score was 2 while mean score was 1.790 with S.D. of0.656. The 95% confidence interval of mean was [1.661, 1.919].

Graph No.5.1.4: Distribution of Khalitya:

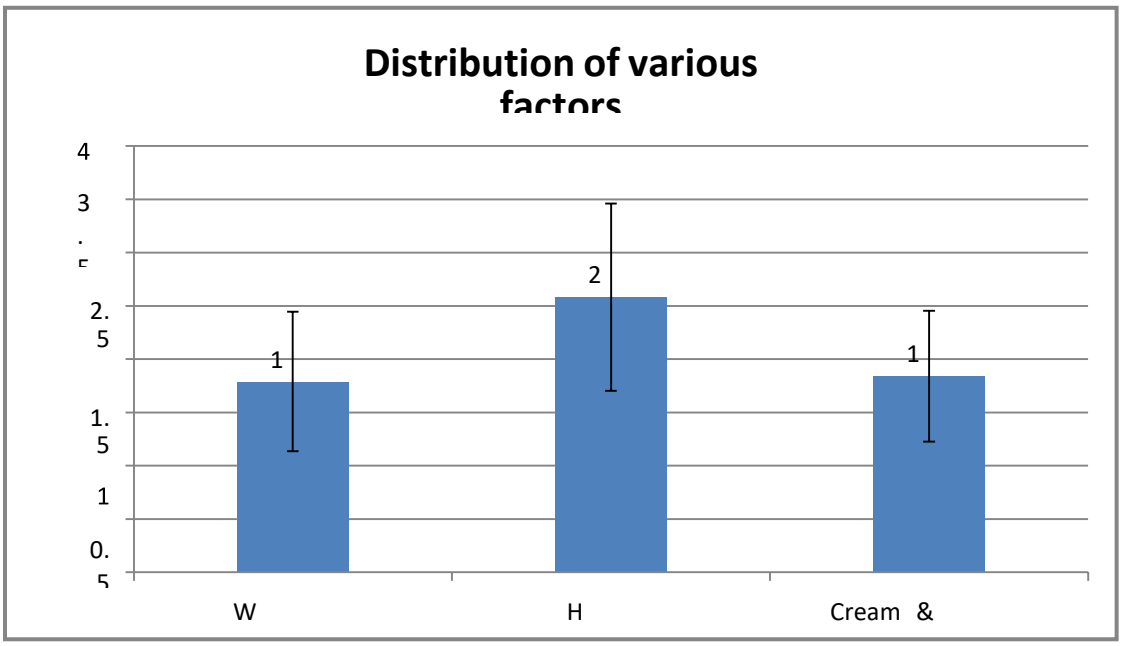


Table No.4: Distribution of some miscellaneous factors:

SR. NO.	Factors	Median	Mean	S.D.	95% C.I.
1	Water type	2.000	1.790	0.656	[1.661, 1.919]
2	Hair Oils	3.000	2.580	0.878	[2.408, 2.752]
3	Cream & Shampoo	2.000	1.840	0.615	[1.719, 1.961]

The median water type score is 2 and mean score is 1.790 with S.D. of0.656. The 95% Confidence interval for mean is [1.661, 1.919].

The median Hair oil score is 3 and mean score is 2.580 with S.D. of0.878. The 95% Confidence interval for mean is [2.408, 2.752].

The median cream & shampoo score is 2 and mean score is 1.840 with S.D. of 0.615. The 95% Confidence interval for mean is [1.719, 1.961].

Table No.5.1.6: Correlation between Khalitya hetu severity score and Khalitya Praman:-

To test whether the hetus of Khalitya as per Bruhatrayi are relevant todayor not, "Hetu severity score" is calculated as sum of scores of all hetus ofa specific patient.

The spearman rank correlation coefficient (rho), denoting correlation between „Hetu severity score" and Khalitya praman is calculated.

Correlation analysis:-

„rho"	**Sample size**	**test statistic „S"**	**P – value**	**Remark**
0.545	100	75909	< 0.001	Significant

The Spearman rank correlation between „Hetu severity score" and „Khalitya praman" is 0.545 which suggest significantly positive correlation(P-value < 0.001) between hetus of khalitya discussed in Bruhatrayi and severity of Khalitya observed in study. Hence there is association between discussed Hetus and khalitya.

Table No.5.1.7: Correlation between Khalitya and miscellaneous factors:-

For assessing correlation between of Khalitya and miscellaneous factors, „Khalitya score" of each individual is correlated with „Total factor score" which is calculated for each individual by adding up the scores of all3 factors for that individual.

The spearman rank correlation coefficient (rho) is used for this calculation.

Correlation analysis:-

„rho"	**Sample size**	**test statistic „S"**	**P – value**	**Remark**
0.658	100	56917	< 0.001	Significant

The Spearman rank correlation between Khalitya score and total factor score is 0.658 which suggest significantly positive correlation (P-value < 0.001) between two variables.

Hence Khalitya can also be attributed to these miscellaneous factors.

DISCUSSION:

Ayurveda gives more importance to the proper diagnosis of a disease withits hetu (etiological Factor) i.e.: Nidan and in Ayurveda Nidan Parivarjana is called half treatment. (Chikitsa). So study of hetu is very important. In Ayurvedic texts various hetus are mentioned related with the diseases Khalitya, such as Krodha (anger), Shok(Grief), Shrama(Fatigue), Lavan Rasa Ati Sevan, etc. Today, as the life style of human beings has been changed, some new factors are introduced such as various hair products for maintenance of hair as Shampoo, Hair Creams, hair colouring agents& Dyes.

Considering all these causes, to be evaluated for their actual role inpathogenesis of the disease I had selected the topic as " STUDY THE HETUS OF KHALITYA WITH SPECIAL REFRANCE TO BHRUHATRAYI."

In „Nidana Panchaka", Nidana is the first and most important criterion to diagnose the disease. For the description of Samprapti (Pathogenesis) ofa disease one should know Hetus (Nidana) of the disease and presence of Hetus in the individual should be studied by interviewing the individual very keenly.

Therefore, study of Hetus is very important to state the Samprapti of a disease and its treatment. For the research, 100 individuals were studied randomly which having agebetween 15yrs to 45 yrs as mentioned in material and methods.

In observation table. No. 1 Out of 100 individuals, 11 individuals were from age group 15 – 20 years, 24 individuals were from age group 21 – 25 years, 26 individuals were from age group 26 – 30 years, 19 individuals were belonging to age group 31 – 35 years, 16individuals were having age between 36 – 40 years while 4 individuals were having age between 41 – 45 years.

In observation table No.2 acording to gender Out of 100 individuals,44 individuals were male while 56 individuals were female.

Gender: Male-44% Femle-56%

In observed individuals females are more affected by the disease. Those having Prakruti with Pitta association are having more evidence of Khalitya. Age group 26-30 yrs. is more affected by the disease.

OBSERVATION & RESULTS ON BASIS OF STATISTICAL ANALYSIS:

Madhur Rasa Sevan:

The median Madhur rasa sevan score was 1 and mean score was 0.950 with S.D. of 0.702. The 95% confidence interval of mean was [0.812, 1.088]. Madhur Rasa of Control-Khalitya is

significant, as The

95% confidence interval of mean was [0.812, 1.088]for madhur is more. So it might be suggesting that persons consuming more Madhur Rasa are not prone to suffer Khalitya.

As Madhur Ras is having Vata and Pitta shamak property it may be helpfulto control the disease by doing Dhatu poshan with its snigdh and balya guna. This is helpful in kesh poshan.

Amla Rasa Sevan:

The median Amla rasa sevan score was 1 and mean score was 0.850 with S.D. of 0.702. The 95% confidence interval of mean was [0.712, 0.988]. For Amla Rasa is not significant for Control- Khalitya. It suggests that there is no role of Amla Rasa in Khalitya.

As Amla Ras is Ushna, Laghu so act as Pitta Vardhak, there should be evidence of disease in individuals, but in Khalitya, Amla ras might be working in pathogenesis as observed in this group.

Lavan Rasa Sevan:

The median Lavana rasa sevan score was 2 and mean score was

2.300 with S.D. of 0.628. The 95% confidence interval of mean was [2.177, 2.423].For Lavan Rasa is highly significant for Control- Khalitya ,itsuggest that Lavan Rasa plays important role pathogenesis of in Khalitya in observed individuals.

As Lavan Ras is Pitta Vardhak, due to its Ushna and Tikshana guna, it acts in Dhatu nashan. It has great role in the Samprapti of Khalitya.

Katu Rasa Sevan:

The median Katu rasa sevan score was 1 and mean score was0.770 with S.D. of 0.723. The 95% confidence interval of mean was [0.628, 0.912].For Katu Rasa is highly significant for Control- Khalitya ,it suggests that Katu Rasa plays important role in pathogenesis of Khalitya& Palitya in observed individuals.

As Katu Ras is Pitta and Vata Vardhak, by its Ushna, Tikshna guna,it may be producing rukshata and poshanabhav, leading to Dhatunash and the disease Khalitya.

Tikta Rasa Sevan :

The median Tikta rasasevan score was 1 and mean score was 1.040with S.D. of 0.828. The 95% confidence interval of mean was [0.878, 1.202].

For Tikta Rasa is not significant for Control- Khalitya ,it suggests thatTikta Rasa does not play important role in pathogenesis of Khalitya in observed individuals.

Kashay Rasa Sevan :

The median Kashaya rasasevan score was 0 and mean score was 0.510 with S.D. of 0.798. The 95% confidence interval of mean was [0.354, 0.666].

For Kashay Rasa is not significant for Control- Khalitya ,it suggests that Kashay Rasa does not play important role in pathogenesis of Khalitya in observed individuals.

Atap Sevan and Dhum Sevan :

The median Atapsevan and Dhumsevan score was 2 and meanscore was 1.920 with S.D. of 0.787. The 95% confidence interval of meanwas [1.766, 2.074].

For Atap sevan is significant for only Control-Khalitya. It suggests there that Atap sevan plays important role in pathogenesis Khalitya.

As Atap sevan increases Ushna guna in the body, as well as sthanik rukshatva leading to Sampapti of Khalitya.

Veg Vidharan :

The median Vegavidharan score was 1 and mean score was 1.470 with S.D. of 0.881. The 95% confidence interval of mean was [1.297, 1.643].

For Veg Vidharan is highly significant for Control- Khalitya. It suggeststhat Veg Vidharan plays important role pathogenesis of in Khalitya in observed individuals.

Veg Vidharan causes Vata prakop mainly, leading to excessiveRukshavastha and poshanabhav leading to Khalitya.

Ratri Jagaran :

The median Ratrijagran score was 2 and mean score was 1.780 with S.D. of 0.811. The 95% confidence interval of mean was [1.621, 1.939]. For Ratri Jagaran is highly significant for Control- Khalitya. It suggeststhat Ratri Jagaran plays important role pathogenesis of in Khalitya.

Ratri Jagaran causes Vata as well as Pitta Prakop leading toKeshamula pachan causing Khalitya.

Krodha,shok,chinta:

The median Krodha, Shoka, Chinta score was 2 and mean score was1.880 with S.D. of 0.756. The 95% confidence interval of mean was [1.732, 2.028].

For Krodha,shok,chinta is highly significant for Control- Khalitya. It suggest that Krodha,shok,chinta plays important role pathogenesis of in Khalitya in observed individuals.

Krodha mainly increases Pitta leading to increased Shariroshmawhich cause kesh mula pachan causing Khalitya. Excessive grief leads to Vata as well as Pitta Prakop, which leads to increased Rukshatva, and Poshanabhav of dhatu resulting in Khalitya.Chinta is main nidan in Rasa Pradoshaj Vyadhi, as it causes Vata and Pitta Prakop leading to improper nourishment of the dhatu, which can lead to Poshanabhav of mala of dhatu ie. Kesh, leading to Khalitya.

14 . Shrama:

The median Shrama score was 2 and mean score was 1.780 with

S.D. of 0.811. The 95% confidence interval of mean was [1.621, 1.939].

For Shrama is not significant for Control- Khalitya.It suggests that Shrama does not play important role in pathogenesis of Khalitya in observed individuals.

15 . Vyasan:

The median Vyasana score was 1 and mean score was 1.090 with

S.D. of 0.996. The 95% confidence interval of mean was [0.895,1.285].For Vyasan is not significant for Control- Khalitya.

It suggest that Vyasan does not play important role in pathogenesis ofKhalitya in observed individuals.

: Discussion on the basis of Miscellaneous Factors relatedwith hair observed in various groups:

The median water type score is 2 and mean score is 1.790 with S.D. of0.656. The 95% Confidence interval for mean is [1.661, 1.919].

The median Hair oil score is 3 and mean score is 2.580 with S.D. of0.878. The 95% Confidence interval for mean is [2.408, 2.752].

The median cream & shampoo score is 2 and mean score is 1.840 with

S.D. of 0.615. The 95% Confidence interval for mean is [1.719, 1.961].

Prakupit Vat and Pitta does dushan of Rakta and produce darunak (dandruff) causing rukshata at keshamula which can lead to poshanabhavof kesh and produce Khalitya.

Individuals using Soaps, Shampoos or chemical based hair washing agents, Hair dyes, creams, are having more evidence of Khalitya.

Chemical based products used for maintenance of hair are generallyhighly acidic or alkaline. Which means they are having Teekshna, Ushana
properties. Locally they act as irritants and does sthanik dosha prakop (Bhrajak Pitta) leading to kesha rukshatva. Thus taking part in pathogenesis of Khalitya.

Individuals using Plain Coconut oil or Herbal oils were less prone to sufferfrom Khalitya and Palitya as observed in different groups.

Shiro-Abhyang is one of the important karma told under dinacharya in theclassics, which is helpful in kesha poshan.

As told in Sushrut Samhita, hair wash must be according to season and geographical condition. It is necessary to avoid hair wash with excessive hot or excessive cold water.

Individuals using hard water for hair wash and drinking were more found in the Khalitya .

Hard water is having kshariya guna, which cause twacha and kesharukshatva due to Teekshna guna. Though used externally, it causessthanik dohsa prakop which take part in pathogenesis of Khalitya.

No individuals were observed who were having chronic disease, under chemotherapy and under long term drug intake in studied groups.

Inshort,we can come to the analysis that, in observed individuals Lavan and Katu ras plays great role in the samprapti of Khalitya. It is Pitta vardhak due to its Ushna and Tikshana guna which acts in dhatu nashana.Atapsevan aiso plays important role in pathogenesis of Khalitya as it increases Ushana guna in body, causes sthanik rukshatva and leads to samprapti of Khalitya.Veg-vidharan also plays important role in causingKhalitya as it causes vata prakop leads to excessive rukshavastha and poshanabhav. Ratri jagaran is also causes Vata as well as Pitta prakop leading to keshamula pachan. Manasik hetus like Krodha,Shok and Chintaplays important role in pathogenesis of Khalitya. Tikta,Kashay ras sevan and Shrama, Vyasana these hetus are not seen significant in pathogenesis of Khalitya in observed individuals.

CONCLUSION:

In etiopathological study of Rasadhikya in diet excess intake of Lavanaand Katu and Amla are responsible etiopathological factors for the development of Samprapti of Khalitya .

In study of etiological factors related with vihar- Atap Sevan, Ratri Jagaran, Veg Vidharan are

main factors in development of Khalitya Samprapti. In study of Manasik Bhava, excess Krodha(Anger), Chinta(Worry) and Shoka(Grief) are found to be main responsible factors in pathogenesis of Khalitya.

In study of miscellaneous factors related with hairs daily used soaps, shampoos, creams, oils having some chemical substances as ingredients and are found to be having some role in pathogenesis of Khalitya.
In study of miscellaneous factors Hard water and excessive hot water for hair wash frequently are mainly take part in Samprapti of Khalitya.

More individuals suffering from Khalitya are found in early age ie.26-30 yrs and more are females from which most are in unmarried, educated and good socioeconomic condition class hence are more conscious to taketreatment for early hair fall.
By overall study, only one factor is not responsible for pathogenesis of Khalitya . There are some main factors responsible in every individuals to be assessed and asked to avoid, if possible at patient level. Then the treatment

is given with proper advice of Pathya and Apathya for patients sufferingfrom Khalitya to get maximum results.

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