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AN OBSERVATIONAL STUDY OF KESHA IN DOSHAJA PRAKRUTI

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ABSTRACT

Hair contributes one's personality and has always remained the centre of attraction. Hair on an individual's scalp and body are his personal mark. In today's life, due to use of various shampoos and hair colors, affects the person's natural hairs pattern. In ancient Ayurveda literature, different characteristics of hairs are given according to doshaja prakruti. Everyone should know about his prakruti & accordingly pattern of his hair & of course which style or treatment is suitable for his hair. Taking into consideration of dosha predominance we can change view of treatment. For this purpose, basic study of kesha in different doshaja prakruti is necessary.

KEYWORDS: doshaja prakruti, kesha, Ayurveda.

INTRODUCTION

Beauty is always associated with hair in spite of age. So, all and everyone is extra conscious about it and are in search of better remedy for their crowning glory. But, to keep the healthy hairs in the healthy state is entirely the duty of human being. In the fast world today, there is race for cosmetics, changed life style or more specifically westernized culture, indifferent dietary habits has made hairs either gray at prematurity or to fall down. Different types of oil (chemical oils), shampoos, soaps, pharmaceutical propaganda in the name of 'Soundarya Prasadhanam' to promote the growth of hairs has made the condition worse. It does not affect the person physically but disturbs him emotionally and age conscious victims start running after the advertisements of various cosmetic preparations like shampoos, conditioners, hair colors and other chemical products available in the market. All of these seem to worsen the condition again.

In ancient Ayurveda literature, different characteristics of hairs are given according to doshaja prakruti. Everyone should know about his prakruti & accordingly pattern of his hair & of course which style or treatment is suitable for his hair. In Ayurveda unchangeable dosha predominance from time of intrauterine life to death is called as Prakruti, which affects the anatomy, physiology and psychology of that person.[1] Different diseases can occur in different deha prakruti to different extent due to various causative factors. Taking into consideration of dosha predominance we can change view of treatment. This is honest attempt to study kesha i.e. hair in different doshaja prakruti to prevent hair diseases easily keeping in mind prakruti of the person.

AIM

To study the Kesha in different doshaja prakruti.

OBJECTIVES

1. To study the literature of prakruti parikshan and Kesha.
2. To find out probable impact of doshaja prakruti on Kesha.

REVIEW OF LITERATURE

In development of fetus, due to its own reasons dosha become intensified. This non pathogenic intensified status of dosha remains unchangeable from birth to death is called as Prakruti.[2] During conception fetus present with various proportion of dosha. Due to this dominance of one or more than one dosha ata time of Garbha-dharana, is responsible for psychosomatic expressions, called deha Prakruti.[3] Predominance of one, two or all three dosha in various proportions, affects fetus. Exhibition of such predominance is called Dosha Prakruti of that individual.[4]

Formation of Prakruti

Prakruti is formed at the time of sperm-ovum union in accordance to attributes of predominant dosha.[1] These dosha predominance is in normal state and not an aggravated. According to Dalhana, these predominant vata etc. are of two types Normal and abnormal of which

the former emerging simultaneously with the body are source of natural constitution while the latter cause abnormality in fetus.

For the development of human constitution Kashyapa lays emphasis on Panchabhautica nutrient rasa supplied by the mother to the fetus and the fetus is nourished by the mother, so identical type of Prakruti of human being is formed from embryonic life.[5]

Important Features of Prakruti
Sushruta citing the example of poisonous insects emphasizes that Prakruti is being genetic, do not harm the individual.[6] Charaka has described following Intra-uterine factors that are responsible for the formation of Prakruti.[7]
a. Shukrashonit Prakruti (sperms and ovum).
b. Kal Garbhashaya Prakruti (Season and condition of uterus).
c. Matur Ahar-Vihar Prakruti (Foods and regimes of mother).
d. Mahabhutvikar Prakruti (Role of Mahabhuta comprising fetus).

Types of Prakruti
Prakruti is initially of two types
1. Doshaja (due to predominance of Dosha).
2. Gunaja (due to reflection of Psychological effects).

1. Doshaja Prakruti
Doshaja Prakruti is of 7 types:[8]
1. Vatala
2. Pittala
3. Kaphala
4. Vata-Pittala
5. Vata-Kaphala
6. Pitta-Kaphala
7. Vata-Pitta-Kaphala

Some persons are of Ekdoshaj Prakruti i.e. Vatika Prakruti, some of Paittika Prakruti and some of Kaphaja, other are of Dwandwaja Prakruti (predominance of two dosha) and yet another of Sama Prakruti (equilibrium of all the three doshas). Person of Sama Prakruti are always healthy and of Vatika etc. always ailing.

2. Gunaja Prakruti
It is grouped primarily into 3 heads -
a) Satvik
b) Rajasa
c) Tamasa

3. Bhautik Prakruti
a. Sushruta has mentioned human constitution according to Panchamahabhutas. Vata, Pitta and Kapha Prakruti do include Vayu Mahabhuta, Teja Mahabhuta and Jala Mahabhuta Prakruti respectively.
b. The person of Parthiva constitution has firm and large body and is tolerant. That of Nabhas

(Pertaining of Akasha) constitution is pure, long lived and having large cavities.[9]

4. Jatyadi Prakruti[10]
This classification has mentioned in Ashtanga Samgraha.
1. Jatiniyat Prakruti – features according to caste.
2. Deshaniyat Prakruti (Habitational)
3. Kalaniyat Prakruti (Seasonal)
4. Vayniyat Prakruti
5. Balaniyat Prakruti
6. Kulaniyat Prakruti
7. Pratyatmaniyat Prakruti

Ayurvedic Review of Kesha
The word 'Kesha' originally has been brought about form. With which has been explained as it means which grows on head.- Vachaspatyam.

Synonyms of kesha
1. Kesha
2. Bala
3. Kacha
4. 4.Chikura
5. Kuntala
6. Shirorooha
7. Ashrahs
8. Moordhaja
9. Shirasija

Keshotpatti
According to Sushruta the hair is one of the 'Pitruja Bhava' means the structure, color and quantity of hair of a progeny are dependent on paternal side. Acharya Charaka considered hair as parthiva dravya as well as pitruja bhava because of its qualities like roughness, steadiness, heaviness etc.[11]

There is no detailed description found in Ayurvedic claim regarding the production of Kesha in particular but it has been stated in the process of Dhatu Nirmana that when Paka of Asthidhatu occurs by its own Agni, the Majja Dhatu emerges from sara bhaga and at the same time hair of scalp and body emerges as mala.[12] Sharangdhara believe in the theory that kasha are the updhatu of Majja dhatu.[13]

Keshotpatti Kala
According to Charaka the Keshotpatti Kala in foetus is at seventh month. While according to Vagbhata it is in six months.

Kesha Poshana
According to Charaka ingested food is digested to assimiable Ahara Rasa which is further divided into two parts namely Sara bhaga and Kitta bhaga. The kitta bhaga is responsible for the production and nutrition of so many things like sweat, urine and hair.

According to Sushruta, kesha poshana occurs from the end part of Dhamani which are attached to Romakoopas.

Kesha Varnotpatti

The colour of Hair differs in different Desha, Jati, rtc. An exotic range of color is seen in hairs ex. Black, brown, red, golden etc. but Ayurveda has adored the black colour of hair. Regarding the production of the colour of hair, Ayurveda says that Teja Mahabhuta is responsible for colour if hair. Bhrajaka pitta one of the manifestation of Teja Mahabhoota, combines with Prithvi and Vayu Mahabhootas and produces black colour. In short.

Krishna Varna = Teja + Prithvi + Vayu

Kesha Samkhya

In ancient classics, many controversies have been noticed on this topic.

1. As per Acharya Yagnavalka, the total number of human hair is 3.5 crores.
2. Acharya Charaka has described that there are 29956 and stated that which are equal to Dhamniagras.
3. According to vidyotini tika of Charaka Samhita the number of hair is 72 cores.
4. Acharya Sushruta believes that like the Dhamani agras hairs are innumerable.[14]
5. Ashtang Samgrahakara holds same view as that of Charaka.

Modern Review of Kesha

Recently modern science has developed a branch deal with patho-physiology, care and preservation of hair, known as Trichology. Earlier hair and its disorders were described under the heading of skin diseases. Hair, nails and sebaceous glands in particular situation grow in the skin in its process of development and as such they are taken to be integrated part of the skin and usually described as appendages of skin.

Definition

"Hairs are the elastic threads like structures derived partly from undifferentiated cells of the foetal epidermis."

Functions of hair

1. The real function of hair is definitely protective. Around the hair roots there are a series of structures. These are designed to protect the scalp from heat rays, thermal and mechanical shock, etc.
2. The presence of hair protects the body from extreme temperature of the environment by acting as a insulator, especially in animals of cold countries.

The hair also does the tactile receptor functions. Hair serves a sexual function in promotion of the evaporation of the apocrine sweat and the accompanying characteristic odour that goes along with it provides a sexual attraction for the lower animals.

Generations and types of the hair

Hair belongs to appear first in foetal life and they are constantly shed placed since them and the process continues through the whole span of life.

Human hair growth cycle

Hair grows about 1-2 cm per month. The growth varies in different people, race and also on the different parts of the body. Hair follicles grow in repeated cycles in a mosaic pattern so that the whole hair coat isn't lost at one time. Peaks of hair replacement occur in the spring and autumn. Hair growth and development is under endocrine control. Fine balance of esterogens, androgens, gonadotropins determines the pattern in an individual.

Under normal circumstances hair growth in each hair follicle occurs in a cycle. There are three main phases of hair growth cycle.

- **Anagen**: Growth phase. The majority of hair follicles will be in this phase. The hair grows in length.
- **Catagen**: Transition phase. The dermal papilla is broken away and the follicle shrinks.
- **Telogen**: Resting phase. The hair doesn't grow but stays attached while the dermal papilla is resting. After telogen the follicle re-enters anagen and the dermal papilla reattaches to the base of the follicle. If the old hair has not already epilated it will be pushed out by the new growing hair.

MATERIAL AND METHODS

During the study of "Observational study of kesha in doshaja prakruti" 200 volunteers were selected randomly. Each volunteer was examining by the standard chart of "prakruti parikshan" and prakruti vinishchaya was done. Kesha parikshana of each and every volunteer was done.

a) Selection of Volunteers
Volunteers were selected from Dept. of Kriya Sharir and campus of college and Hospital.

b) Inclusive Criteria
1. Age- 18 to 30 years.
2. Sex- Male and female.
3. Under graduate & post graduate students & volunteers between the same age group available in IPD, OPD & college premises.

c) Exclusive Criteria
1. Volunteers below 18 years and above 30 years.
2. Volunteers who have colored, dyed or straightened hairs
3. Volunteers suffering from any systemic diseases.
4. Volunteers with hair, scalp and skin diseases.

d) Steps in study
Prakruti Parikshana
200 volunteers were selected randomly and examine by the standard chart of "prakruti parikshan" and prakruti vinishchaya was done.

Kesha Parikshana
Kesha
Before examination the volunteer was instructed to wash and dry hairs without using any soap or shampoo after five days abstinence from hair wash. Total area of scalp was divided into four quadrants – two temporal areas, frontal area and occipital area. Observations noted.

a) Sphutitva
Examination method – Darshan Pariksha–for splitting of hairs
Examination method – Prashna Pariksha

Q. Is there tendency of hair splitting?

Sphutit kesha	Splitting of hairs at end along with shaft in many hairs in four quadrants observed
Alpa sphutit kesha	Splitting of hairs at end in some hairs in four quadrants observed
Asphutit kesha	No splitting of hairs seen

b) Snigdhatva
Examination method – Darshan Pariksha, Sparshan Pariksha
Rough to touch and lustreless hairs – Vataprakruti lakshana
Soft to touch – Pitta prakruti lakshana
Soft to touch along with shining hairs – Kapha prakruti lakshana.

Ruksha kesha	Dryness of hairs observed Rough to touch
Eshat snigdha kesha	Very soft to touch No luster
Asphutit kesha	Soft to touch Shiny hairs

c) Ghanata
Examination method – Darshan Pariksha
Trichoscopic examination

Alpa kesha	<2 hairs/follicular unit
Madhyam kesha	2-4 hairs/follicular unit
Ghana kesha	>4 hairs/follicular unit

d) Kesha Varna
Examination method – Darshan Pariksha
Trichoscopic examination.

Dhusar kesha	Dry, lusterless, rough hairs Dusty hairs
Kapil kesha	Reddish brown hairs
Shyam kesha	Raven Black hairs

e) Palitatva
Examination method– Darshan Pariksha and Prashna Pariksha

Q. Is graying of hairs present before 30 yrs?

Kshipra sampoorna palit kesha	Graying of hairs in all the four quadrants
Eshat palit kesha	Some of hairs in every quadrant are having gray colour
Apalit kesha	Not a single gray hair seen in any of the quadrant

f) Khalitatva
Examination method – Darshan Pariksha
                                Prashna Pariksha
                                Trichoscopic examination
Q. Do you have complaint of severe hair fall?
Q. Do you have patches of baldness in the scalp?

Kshipra sampoorna khalit kesha	Complete baldness is seen in all the four quadrants
Eshat khalit kesha	Some of the patches of baldness seen over any of the four quadrants
Akhalit kesha	No baldness seen in any of the quadrants

g) Kutilta
Examination method – Darshan Pariksha
Presence of curly hairs – kutil kesha – Kapha Prakruti lakshana

Akutil kesha	Curling of hairs is not seen at all
Eshat kutil kesha	Some of hair, mostly near forehead line show curling
Kutil kesha	Significant curly hairs

Hair Examination
General hair examination
Texture of hair – assessed by 'Card Diagnosis'
To figure out hair texture, volunteer's hair are grabbed on the top, side and back and watched how it falls when it let go on white card paper.

Thin hair	If hair falls flat and limp
Normal hair	If hair stickup straight or if it poufs up
Thick hair	Anything in between is

Hair density
Examination method – Darshan Pariksha
                                Trichoscopic examination

Scanty	<2 hairs/follicular unit
Normal	2-4 hairs/follicular unit
Dense	>4 hairs/follicular unit

Rate of hair fall – assessment by 'Standard wash test'
Volunteer was advised for five days abstention from shampooing. On 6th day, volunteer was asked to wash and rinse their hairs in basin whose hole is covered by gauze to entrap the lost hairs. Hairs are then collected on a paper envelop and counted with the help of magnifying lens. Gradation was done as follows:

- 50-100 hairs/day- 0
- 100-150 hairs/day- 1
- 150-200 hairs/day- 2
- >200 hairs/day- 3

Simple pull test.
A gentle traction is applied on a group of hairs in the central area of scalp. (Approximately 20-60 hairs) from proximal to distal end.

The grasp is made with the help of thumb, index finger and the middle finger. Then how much hairs comes out are counted and gradation was done as follows:

- <2 hairs   -   0
- 2-4 hairs   -   1
- 4-6 hairs   -   2
- 6-8 hairs   -   3

OBSERVATIONS AND RESULTS

To study the "an observational study of kesha in doshaja prakruti", 200 volunteers were selected randomly from R.A. Podar Hospital.

RESULTS AND STATISTICAL ANALYSIS OF FINDINGS

Table 1: Sphutitva.

Prakruti	Sphutit kesha	Alpa sphutit kesha	Asphutit kesha	Chi-square value	df	P value	significant
VP+VK	25	28	14	13.32	2	0.0013	Yes
PV+PK	5	24	36	5.861	2	0.0534	No
KV+KP	8	26	34	2.293	2	0.3177	No
Total	38	78	84				
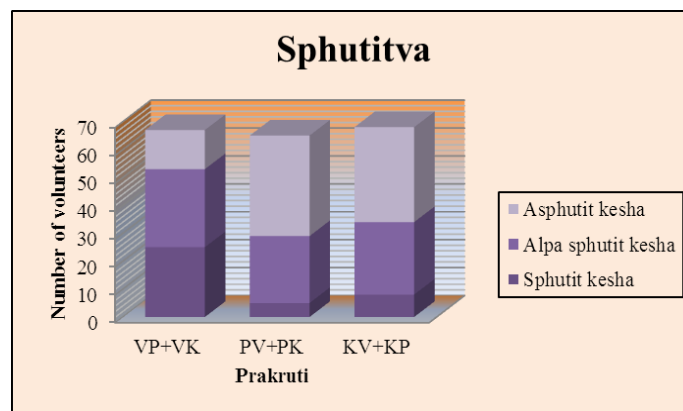
Table 2: Snigdhata.

Prakruti	Ruksha kesha	Eshat snigdha kesha	Snigdha kesha	Chi-square value	df	P value	significant
VP+VK	15	34	18	1.048	2	0.5923	No
PV+PK	15	41	9	7.127	2	0.0283	Yes
KV+KP	4	30	34	10.58	2	0.0051	Yes
Total	34	105	61				
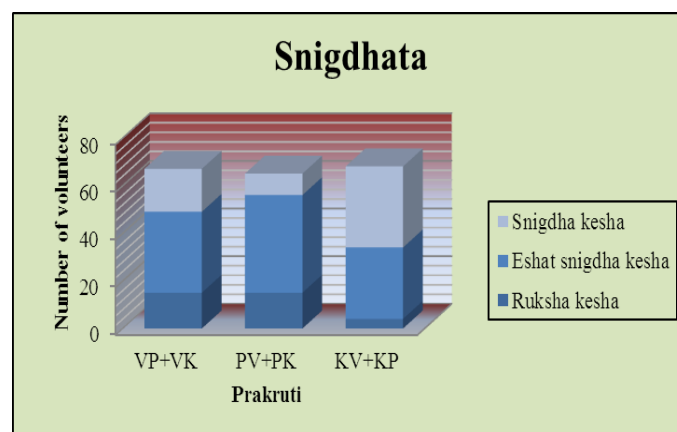
Table 3: Ghanata.

Prakruti	Alpa kasha	Madhyam kesha	Ghana kesha	Chi-square value	Df	P value	significant
VP+VK	6	46	15	0.3628	2	0.8341	No
PV+PK	7	50	8	5.252	2	0.0724	No
KV+KP	5	34	29	6.679	2	0.0355	Yes
Total	18	130	52				
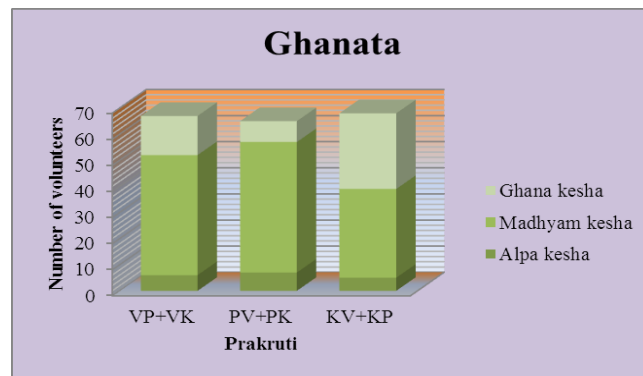
Table 4: Kesha varna.

Prakruti	Dhusar kesha	Kapil kesha	Shyam kesha	Chi-square value	Df	P value	significant
VP+VK	24	13	30	9.208	2	0.0100	Yes
PV+PK	8	29	28	7.603	2	0.0223	Yes
KV+KP	4	11	53	11.43	2	0.0033	Yes
Total	36	53	111				
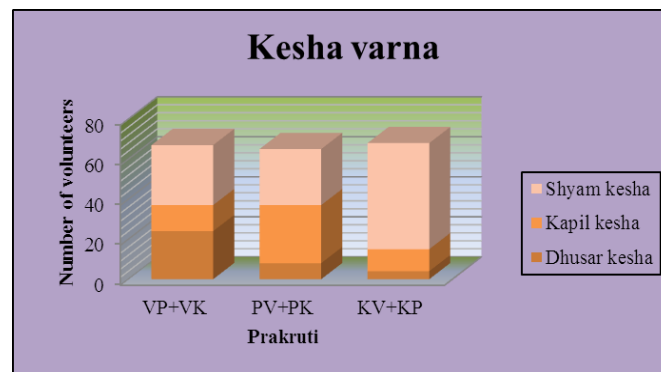
Table 5: Palitatva.

Prakruti	Kshipra sampoorna palit kesha	Eshat palit kesha	Apalit kesha	P value	Significant
VP+VK	0	27	40	0.8870	No
PV+PK	0	37	28	0.0324	Yes
KV+KP	0	19	49	0.0598	No
Total	0	83	117		
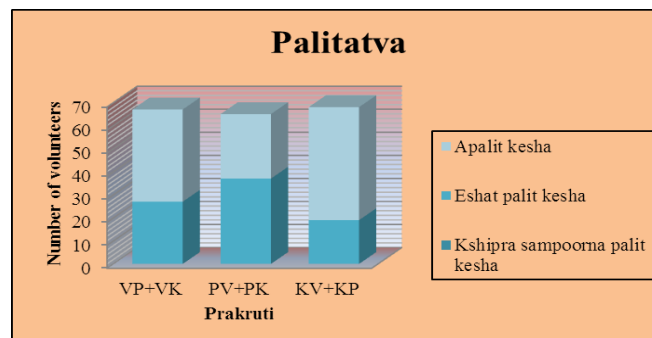
Table 6: Khalitatva.

Prakruti	Kshipra sampoorna khalit kesha	Eshat khalit kesha	Akhalit kesha	P value	Significant
VP+VK	0	32	35	0.4791	No
PV+PK	0	33	32	0.2540	No
KV+KP	0	20	48	0.0624	No
Total	0	85	115		
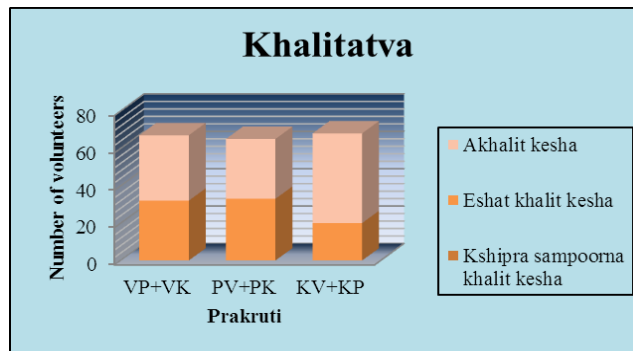
Table 7: Kutilta.

Prakruti	Akutil kesha	Eshat kutil kesha	Kutil kesha	Chi-square value	Df	P value	significant
VP+VK	46	14	7	1.310	2	0.5196	No
PV+PK	37	22	6	0.8230	2	0.6627	No
KV+KP	42	20	6	0.06496	2	0.9680	No
Total	125	56	19				
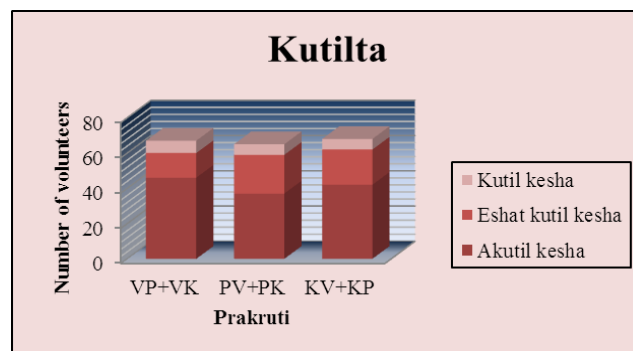
General hair examinations
Table 8: Texture of hair.

Prakruti	Thin	Normal	Thick	Chi-square value	Df	P value	Significant
VP+VK	19	35	13	0.4889	2	0.7831	No
PV+PK	25	27	13	3.383	2	0.1842	No
KV+KP	9	38	21	5.291	2	0.0710	No
Total	53	100	47				
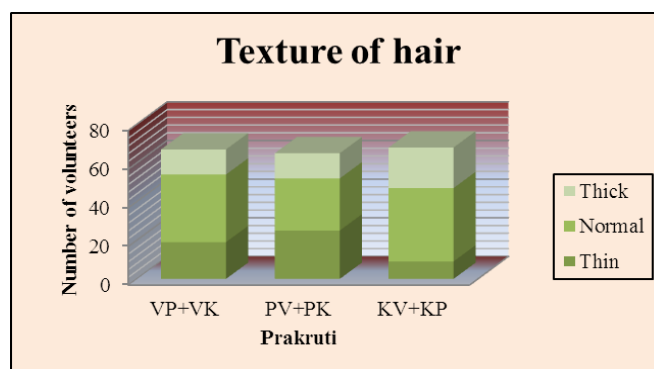
Table 9: Hair density.

Prakruti	Scanty	Normal	Thick	Chi-square value	Df	P value	Significant
VP+VK	17	40	10	0.9115	2	0.6340	No
PV+PK	19	38	8	2.686	2	2610	No
KV+KP	7	40	21	6.352	2	0.0417	Yes
Total	43	118	39				
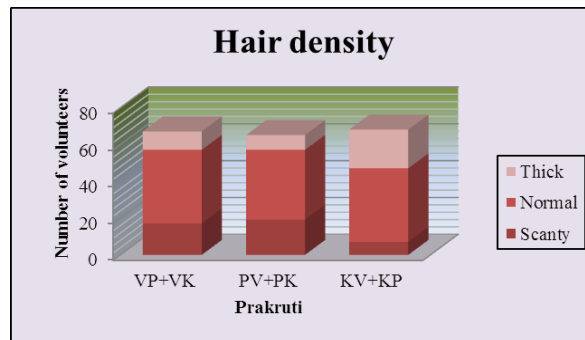
Specific hair examinations
Table 10: Rate of hair fall.

Prakruti	50-100 hairs / day	100-150 hairs/day	150-200 hairs/day	>200 hairs/day	Chi-square value	df	P value	Significant
VP+VK	21	22	18	6	2.734	3	0.4345	No
PV+PK	11	25	28	1	8.007	3	0.0459	Yes
KV+KP	29	29	9	1	7.800	3	0.0503	No
Total	61	76	55	8				
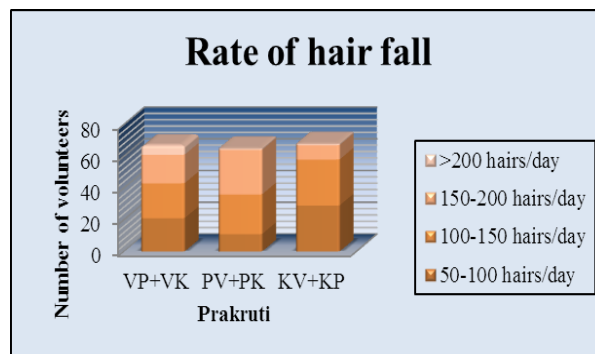
Table No. 11 Simple pull test.

Prakruti	<2 hairs	2-4 hairs	4-6 hairs	6-8 hairs	Chi-square value	Df	P value	Significant
VP+VK	15	28	19	5	0.4948	3	0.9200	No
PV+PK	13	23	25	4	8.958	3	0.0299	Yes
KV+KP	24	32	9	3	5.999	3	0.1116	No
Total	52	83	53	12				
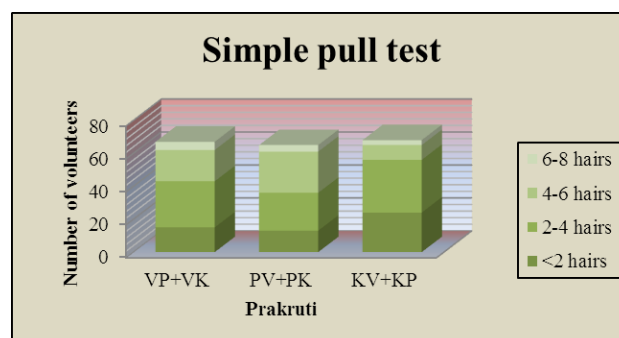
DISCUSSION

With globalization of Ayurveda, whole world seems towards Ayurveda with ray of hope for successful treatment keeping limitations and adverse effect of modern treatment in mind. Keeping prakruti of a person in mind, we can prevent hair diseases like premature graying of hairs, alopecia, etc.

Discussion on Parameters

1   Sphutitva

Out of 200 volunteers, 67 volunteers were of vata predominant prakruti, 65 volunteers were of pitta dominant prakruti while 68 were of kapha dominant prakruti. 38 volunteers with sphutit kesha were observed, in which 25 were of vata pradhana prakruti. When non-parametric statistical test was applied to this data obtained, it shows significant sphutitiva in vata pradhana prakruti. As per literature review, majority from 67 vata dominating prakruti volunteers possess sphutitva, which is clear from the study observations.

2   Snigdhata

Out of 200 volunteers, 67 volunteers were of vata predominant prakruti, 65 volunteers were of pitta dominant prakruti while 68 were of kapha dominant prakruti.   34 volunteers with ruksha kesha were observed. 105 volunteers showed eshat snigdha kesha while 61 were with snidha kesha, which appreciable. When non-parametric statistical test was applied to this data obtained, it shows significant snigdhata in kapha as well as pitta pradhana prakruti. Kapha dominating prakruti volunteers should have more snigdhatva than other two prakruti according to literature review. From observations, it will be clear that both kapha and pitta predominant prakruti, shows snigdhatva in their kesha.

As snigdha is guna of kapha and even pitta has eshat snigdha guna, the observation matches with literature.

3   Ghanata

Out of 200 volunteers, 67 volunteers were of vata predominant prakruti, 65 volunteers were of pitta dominant prakruti while 68 were of kapha dominant prakruti.   18 volunteers had alpa kesha while 130 volunteers were having madhyam ghanata of kesha. 52 volunteers with ghana kesha were observed, in which 29 were of kapha pradhana prakruti. When non-parametric statistical test was applied to this data obtained, it shows significant ghanata in kapha pradhana prakruti, which again proves that kapha prakruti individuals have ghana that means thick hair.

4   Kesha varna

Out of 200 volunteers, 67 volunteers were of vata predominant prakruti, 65 volunteers were of pitta dominant prakruti while 68 were of kapha dominant prakruti. 36 volunteers had dhusar kesha in which 24 were of vata pradhantva while out of 53 volunteers with

kapil kesha 29 were having pitta pradhana prakruti. 111 volunteers with ghana kesha were observed, in which 53 were of kapha pradhana prakruti. According to statistical analysis, it was found that observations match with literature review as predicted.   In 67 vata pradhan prakruti volunteers dhusar varna of kesha was significant while in 65 pitta pradhana prakruti volunteers, kapil varna and 68 kapha prakruti pradhana volunteers, shyam varna of kesha was significantly observed.

5   Palitatva

Out of 200 volunteers, 67 volunteers were of vata predominant prakruti, 65 volunteers were of pitta dominant prakruti while 68 were of kapha dominant prakruti. Not a single volunteer with kshipra sampoorna palit kesha was observed. 83 volunteers had eshat palit kesha while 117 volunteers were having apalit kesha. Out of 83 volunteers with eshat palit kesha 37 were of pitta pradhana prakruti. When non-parametric statistical test was applied to this data obtained, it shows significant palitatva in pitta pradhana prakruti. In pitta pradhanata, tendency of graying of hairs is more prominent, which we can observe from the data obtained.   In pitta dominating 65 volunteers, palitatva is markedly seen which is according to literature review.

6   Khalitatva

Out of 200 volunteers, 67 volunteers were of vata predominant prakruti, 65 volunteers were of pitta dominant prakruti while 68 were of kapha dominant prakruti. Not a single volunteer with kshipra sampoorna khalit kesha was observed. 85 volunteers had eshat khalit kesha while 115 volunteers were having akhalit kesha. When non-parametric statistical test was applied to this data obtained, it shows does not show any significant khalitatva in pitta pradhana prakruti. As per the literature, pitta dominating prakruti should have khalitatva, but amongst 65 pitta dominant volunteers, no one was having complete baldness. Not much volunteers were with partial baldness also in above age group. Volunteers with some patches without hairs are noted in the study, but complete alopecia was not noted. Khalitatva in pitta prakruti is stated, but it is in the case ekal pitta prakruti.   Volunteers in study are of dwandwaja prakruti, so some characteristics of pitta prakruti might be superimposed by secondary prakruti characteristics.   Also sample size of this study is restricted to only 200 volunteers. If large sample size is taken it might show significant results.

7   Kutilta

Out of 200 volunteers, 67 volunteers were of vata predominant prakruti, 65 volunteers were of pitta dominant prakruti while 68 were of kapha dominant prakruti. 125 volunteers with akutil kesha were observed. 56 volunteers had eshat kutil kesha while 19 volunteers were having kutil kesha.   When non-parametric statistical test was applied to this data obtained, it does not showed significant kutilta in kapha pradhana prakruti.   In kapha dosha pradhana68

volunteers very few were with kutil kesha, which is not enough to prove that kapha prakruti pradhana individual shows kutil kesha as stated in Samhita. Kutilta in kapha prakruti is stated, but it is in the case ekal kapha prakruti. Volunteers in study are of dwandwaja prakruti, so some characteristics of kapha prakruti might be superimposed by secondary prakruti characteristics. Also sample size of this study is restricted to only 200 volunteers. If large sample size is taken it might show significant results.

8   Texture of hair
Out of 200 volunteers, 67 volunteers were of vata predominant prakruti, 65 volunteers were of pitta dominant prakruti while 68 were of kapha dominant prakruti. 53 volunteers with thin hair texture were observed. 100 volunteers had normal hair texture while 47 volunteers were having thick hair texture. When non-parametric statistical test was applied to this data obtained, it does not showed significant result. From this observation, conclusion regarding texture of hair in different prakruti cannot be made.

9   Hair density
Out of 200 volunteers, 67 volunteers were of vata predominant prakruti, 65 volunteers were of pitta dominant prakruti while 68 were of kapha dominant prakruti. 43 volunteers with scanty hairs were observed. 118 volunteers had normal hairs while 39 volunteers were having thick hairs. Out of 39 volunteers having thick hairs 21 volunteers were of kapha prakruti. When non-parametric statistical test was applied to this data obtained, it shows significant hair density in kapha pradhana prakruti. According to review of literature, in kapha prakruti thick hair density is expected. Out of 200 volunteers, 68 volunteers were having kapha dominant prakruti. Thick hair density was appreciated in them according to statistical analysis.

10   Rate of hair fall
Out of 200 volunteers, 67 volunteers were of vata predominant prakruti, 65 volunteers were of pitta dominant prakruti while 68 were of kapha dominant prakruti. 61 volunteers with 50-100 hairs/day hair loss were observed. 76 volunteers had hair fall between 100-150 hairs/day while 55 volunteers were having 150-200 hairs/day loss. >200 hairs/day fall seen in about 8 volunteers. Marked number of volunteers having pitta pradhana prakruti were observed in 100-150 hairs/day fall and 150-200 hairs/day fall. When non-parametric statistical test was applied to this data obtained, it shows significant rate of hair fall in pitta pradhana prakruti. Khalitya is the characteristic feature of pitta prakruti. Total 65 volunteers were pitta pradhan prakruti. Rate of hair fall was found to be significant amongst them. So, loss of hair is expected more in pitta prakruti, which was found during observations.

11   Simple pull test
Out of 200 volunteers, 67 volunteers were of vata predominant prakruti, 65 volunteers were of pitta

dominant prakruti while 68 were of kapha dominant prakruti. 52 volunteers with <2 hairs coming out were observed. 83 volunteers had 2-4 hairs coming out after simple pull test while 53 volunteers were having 4-6 hairs coming out. 6-8 hairs came out in about 12 volunteers. Marked number of volunteers having pitta pradhan prakruti were observed in 2-4 hairs and 4-6 hairs coming out after simple pull test. When non-parametric statistical test was applied to this data obtained, it shows significant result of simple pull test in pitta pradhana prakruti. In pitta prakruti, khalitya is common, according to the literature review. So, hair fall is markedly seen in these volunteers. A simple traction causes more number of hairs to come out of the follicle, which indicates simple pull test is significant in them.

CONCLUSION
The study entitled "An observational study of kesha in doshaja prakruti" was undertaken. Based upon the results of the study displayed in the form of tables and graphs and critically discussed in the previous chapter, the following conclusions are drawn.
1. **Sphutitva:** Sphutitva is more significant in vata pradhana prakruti.
2. **Snigdhata:** Snigdhata is present in both kapha and pitta pradhana prakruti.
3. **Ghanata:** In kapha pradhana prakruti, ghanata is appreciable.
4. **Kesha varna:** Kesha varna is significant in all the three prakruti.
5. **Palitatva:** Kshipra palitya is characteristic feature of pitta pradhana prakruti.
6. **Khalitatva:** Though khalitatva is stated in pitta prakruti, sampoorna khalitatva was not recorded as significant. But partial baldness and patches of baldness could be present.
7. **Kutilta:** Sampoorna kutil kesha was not significantly seen in kapha pradhana prakruti, but curling of hair near forehead region was observed.
8. **Texture of hair:** Conclusion regarding texture of hair in different prakruti cannot be made.
9. **Hair density:** Hair density is thick in the case of kapha pradhana prakruti.
10. **Rate of hair fall:** Rate of hair fall is significant in pitta dominating prakruti.
11. **Simple pull test:** Simple pull test is positive in case of pitta pradhana prakruti.

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