



Correlation of *Kashtartava* with *Dehika Prakriti*: A Cross - Sectional Study

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ABSTRACT

Prakriti or body constitution is determined at the time of fertilization by various permutation and combination of three Doshas, five elements and three Gunas. The Prakriti once formed can't be changed. The physical and mental traits of an individual are determined by Prakriti. Each individual has its unique Prakriti. It can neither be created nor be destroyed and it will remain constant through the entire life. Women play an important role in our society. She has received a beautiful gift from God in terms of giving birth to new life. So here comes the concept of menstrual cycle. It is a series of changes that each female goes through every month. Menstrual cycle is recurrent monthly discharge of blood from female genital tract. It starts from early teen years and ends till the menopause at the age of around 50. *Kashtartava* or dysmenorrhoea is painful menstruation of sufficient magnitude so as to incapacitate day to day activities. According to modern science there are two types of dysmenorrhoea, one is primary and other one is secondary. Primary dysmenorrhoea is one which is without any pelvic pathology whereas in secondary dysmenorrhoea the cause is pelvic pathology. In this study we are mainly concerned with primary dysmenorrhoea as it is a physiological entity. In today's era this is a major problem and a huge topic of concern. This condition is so alarming that females are taking analgesics and going to work and in severe cases even those medicines don't work and they have to miss their office or class due to this problem. So a correlation between *Kashtartava* and *Dehika Prakriti* should be made so that we can properly approach towards the condition and provide helping hand to the society. So there is a need for this study that will help us to approach towards dysmenorrhoea in a proper scientific manner and help us to treat the disease in a better way.

Key Words: *Kashtartava*, *Prakriti*, *Dysmenorrhoea*, *Tridosha*

INTRODUCTION

In 21st century when women are considered as equal as men, there is an urgent need for the study that gives detailed description about physiology of menstrual cycle giving all possible information from *ayurveda* as well as from modern science. *Kashtartava* or dysmenorrhoea is itself an alarming situation and its prevalence in different *Dehika Prakriti* has been made so that we can treat the problem according to *prakriti* of female and can

explain about various *ahaar dravyas* to be taken and *vihar* to be followed during *kashtartava*. This minimizes the problem up to some extent. There are few researches in previous years that tried to explain *kashtartava* and physiology of menstrual cycle scientifically but they couldn't provide the complete knowledge of *kashtartava*. Reason being use of insufficient parameter, very low sample size. Academically, this study was aimed to fulfil the empirical and theoretical lacunae in existing



body of knowledge by using VERBAL MULTIDIMENSIONAL SCORING PATTERN for assessment of pain so as to make study more accurate. Pain is the main criteria for assessment of *kashtartava* and in this study its variation has been seen in persons of different *Dehika Prakriti*, by interpreting both *ayurvedic* and modern aspect of *kashtartava*.

With the advent of new millennium and the herald of high-tech era, women's status was expected to reach new horizons both socially and physically. But some of the physiological things trouble the lady to make her slow down the race. Such a problem is *Kashtārtava* (menstrual pain). Maximum women are experiencing the minor psychological and somatic changes for a few days before menstruation and during the days of bleeding. Once the menstruation is over, these menstrual molimina disappear leaving behind an anxiety free well beingness in the lady. When she has painful menstruation in fully blown up and exaggerated manner then it becomes difficult for her. Dysmenorrhoea is the most common gynaecological problem faced by women during their adolescence which causes significant discomfort & anxiety for the woman as well as family. A systematic review of studies in developing countries performed by Harlow and Campbell has revealed that about 25-50% of adult women and about 75% of adolescents experience pain during menstruation, with 5-20% reporting severe dysmenorrhoea or pain that prevent them from ensuing day-to-day activities¹. Dysmenorrhoea itself is not life threatening, but is

found to have a profound impact on the daily activities and may result in missing work or school, inability to participate in sports or other activities. Thereby, it may accentuate the emotional distress brought on by the pain. The problem of absenteeism from school or work is also underappreciated. In a study on college girls, 42 % of the study subjects reported absenteeism or loss of activity on at least one occasion. In several longitudinal studies of young women, rates of absenteeism ranged from 34 to 50 %. In another study, dysmenorrhoea accounted for 600 million lost work hours and \$2 billion in lost productivity annually². In Ayurveda, dysmenorrhoea is not explained as a separate disease entity. It can be because women were not suffering much from this problem those days because of pin pointed Ritucharya & Rajasvalacharya. Though *Kashtartava* is not separately described as a disease in Ayurvedic classics there are many other diseases in which *Kashtartava* is mainly considered and is only described as a symptom. Hence, this study is particular about the explanation of the *Kashtartava* on the basis of different classical references from *samhitas*.

Kashtartava

DEFINITION

Kashtenamuchyatiitikashtartava.

It can be defined as a condition where *skashthapravrutti* of *artava* takes place. The word *kashtartava* is formed by two words *kashta* and *artava*. *Kashta* means painful, difficult, and *artava* is a substance that flows out of the body at a particular period or specific time. In ayurvedic



classics *kashtartava* has not been described as a separate disease. Instead, it has been considered a *lakshana* of various *yonivyapada* like *vatajayonivyapada*, *sanipatikyonivyapada*, *pariplutayonivyapad*, *udavartiniyonivyapad*, *antarmukhiyonivyapada*, *suchimukhiyonivyapada*, *mahayonivyapada*, *vatajartavadushti*, *khsinaartavadushti*, *asrikdar*. Almost all *Ācharyas* have described regarding this symptom but all references are scattered in description of different *Rogas*.

Dysmenorrhoea

Painful menstruation of sufficient magnitude so as to incapacitate day-to-day activities is known as dysmenorrhea³. There are two types of dysmenorrhea- primary or spasmodic dysmenorrhea and secondary or congestive dysmenorrhea.

PRIMARY DYSMENORRHEA - Pain during menstruation without any pelvic pathology is known as primary dysmenorrhea.

SECONDARY DYSMENORRHEA - Pain during menstruation associated with pelvic pathology is known as secondary dysmenorrhea⁴.

Prakriti

According to *Acharya Sushruta*, *prakriti* is defined as the group of characters inherited by an individual from the *sukra*(sperm) and *sonita*(ovum) of the parents depending upon the predominance of *doshas* prevailing at the time of sexual intercourse⁵. *Prakritis* are based on *doshas*, each *dosha* has some attributes which display themselves in particular individuals.

Prakritis are seven in number: *Vataj*, *Pittaj*, *Kaphaja*, *VataPittaja*, *VataKaphaja*, *Kapha Pittaja*, *Tridoshaja*⁶

AIMS & OBJECTIVES

- To ascertain a correlation between *kashtartava* and *DehikaPrakriti*.
- To access degree of pain in patients of *kashtartavaby* using Verbal Multidimensional Scoring Pattern⁷.
- To access *DehikaPrakriti* of the subjects using *Prakriti Assessment Performa*⁸.

MATERIALS AND METHODS

Study design – a cross-sectional study

This study is an open study. All the observations were made across the sections.

Selection of volunteers

The proposed study was conducted in CBPACS hospital and cases of *Kashtartava*& various *DehikaPrakriti* were selected from SRPT and KriyaSharir OPD of the hospital.

Selection criteria

On the basis of age group (12-30 years) females, irrespective of religion, or socio economic status.

Sample size

[Daniel Formula] $n = Z_p (1-p)/d^2$ n- Sample size, Z- confidence interval, p- prevalence, d- level of significance.

Z-1.96, p- 71.96%, d-5%(0.05)

$N = \frac{1.96 \times 1.96 \times 0.7196(1-0.7196)}{0.05 \times 0.05} = 3.100 = 3 \times 30 = 90$ volunteers.

Inclusion criteria



Patients with Primary Dysmenorrhoea i.e. pain without any pelvic pathology.

- Patients of age group between 12-30 years.
- Unmarried women.
- Females having regular menstrual cycle.
- Patient suffering from Dysmenorrhoea from more than three consecutive cycles.

Exclusion criteria

- Females having any pelvic pathology like fibroid uterus, pelvic tumors.
- Secondary Dysmenorrhoea.
- Other systemic disorders like HTN, Diabetes, Hyper/Hypo thyroidism.
- Any congenital anomalies.
- Age less than 12 years and more than 30 years.
- Females suffering from abnormal uterine bleeding.

Method of study

- Diagnosed cases of Primary Dysmenorrhoea were selected randomly.
- Informed Consent from patients was taken.
- Grading of pain of the volunteers was done.
- *Prakriti* was determined using *Prakriti* Assessment Proforma.
- Volunteers of various *Prakriti* with different grading of pain were recruited for the study.

Assessment of *prakriti*

For the assessment of *Prakriti*, Performa was used. Based on the score acquirement, *Prakriti* of volunteers was assessed as;

Criteria for *Ekal Prakriti*:

The *prakriti* was designated as an *ekalPrakritivataj*, *pittaj*, *kaphaj* if the 50% score

of highest dosha was greater than two other individual doshas.

Criteria of *Sannipataj Prakriti*

The *prakriti* was designated as *sannipataj* if all the three dosha had a difference of not more than 10%.

Criteria of *Dwandaj Prakriti*

The rest of *prakriti* excluding *ekal* and *sannipataj* were designated as *Dwanda jPrakriti*. *Charak Samhita* explained the specific attributes of a particular *Dosha* along with the description of the specific features these attributes produce in an individual. Thus, *Vata*, *Pitta* and *Kapha* have been assigned with eight, five and twelve attributes (*Guna*) respectively. Each attribute produces one or more observable features at the physical, physiological, or psychological domains. This questionnaire was designed in such a way that, each feature as described in *Charak Samhita (Vimana Sthana)* has been converted into a simple question/statement. The respondents were required to record their agreement or disagreement with the statement/question in a column provided for the purpose in the form of “yes” or “no”. The scores to be allotted for a particular type of response were specified against the statement in a separate column. The mathematical model included in this questionnaire is dependent on the “*Guna*” principle of *Ayurveda*. The percentage dominance of a *Dosha* in an individual was calculated on the basis of the total scores obtained for each *Dosha* by simple mathematical calculation as shown in:

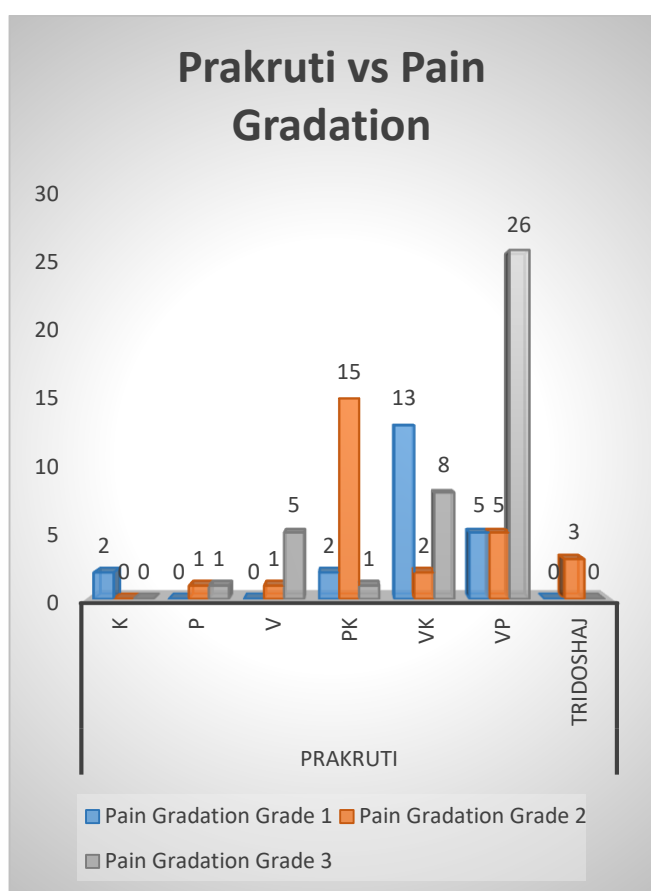
Total score scored by an individual for a *Dosha*
x100



Total scores allotted to that *Dosha*

RESULTS AND OBSERVATIONS

Distribution of volunteers on the basis of age, religion, race, dysmenorrhoea in relation to *prakriti* and dysmenorrhea (graph 1) in relation to age group, occupation, duration of pain, family history and relation with menarche were presented in the forms of tables, charts and graphs.



Graph 1 Significant association between *Prakriti* and Pain gradation

Chi square test was applied for the analysis of data. Out of 90 volunteers 48 % were within the age group 20-23 years, 81% students suffered from primary dysmenorrhoea, 67% of the volunteers were suffering from pain in first two days mainly. 62% of the volunteers were having positive family history of dysmenorrhoea. 61% of the volunteers were suffering from the pain since menarche. The result was found significant and *Vataprakrati* and *Vata pitta prakriti* are those *prakriti* which mainly suffers from dysmenorrhoea of grade 3 i.e severe pain.

Since observations are on ordinal scale (gradations), we have used **Chi-Squared test** to test the association (correlation). From table no.2 we can observe that **P-Value** is less than 0.05. Hence we conclude that there is significant association between *Prakriti* and Pain gradation

Table 2 Statistical analysis

	Value	df	P-Value
Pearson Chi-Square	66.468 ^a	12	0.000
N of Valid Cases	90		

DISCUSSION

Dysmenorrhoea was closely observed with different *dehikaprakriti* in various ways (Table No. 1)

Table 1 Significant association between *Prakriti* and Pain gradation

Pain Gradation		Prakruti							Total
		K	P	V	PK	VK	VP	Tridoshaj	
Grade 1	Count	2	0	0	2	13	5	0	22
	%	9.1%	.0%	.0%	9.1%	59.1%	22.7%	.0%	100.0%
Grade 2	Count	0	1	1	15	2	5	3	27
	%	.0%	3.7%	3.7%	55.6%	7.4%	18.5%	11.1%	100.0%
Grade 3	Count	0	1	5	1	8	26	0	41
	%	.0%	2.4%	12.2%	2.4%	19.5%	63.4%	.0%	100.0%
Total	Count	2	2	6	18	23	36	3	90
	%	2.2%	2.2%	6.7%	20.0%	25.6%	40.0%	3.3%	100.0%



1. Distribution of volunteers in tabular form on the basis of different *prakriti*–

According to the results 40 % females of dysmenorrhoea were having *vata – pitta prakriti* (majority of females) which was followed by *vata – kaphaprakriti* (26 %), then *pitta – kaphaprakriti* (20 %), *vatajprakriti* (7%), *sannipatik*(3%), *kaphaj* and *pittajprakriti* both were equally found to be 2 %.

2. Distribution of volunteers of different *prakriti* of grade 1 dysmenorrhoea.

Grade 1 have maximum patients of *vatakaphaprakriti*.e 59%. *Vata pitta* have 23 %, *pitta kapha* and *kaphaprakriti* both have 9 % patients respectively. *Sannipataj*, *vataj* and *pittajprakriti* havenot got any significant results

3. Distribution of volunteers of different *prakriti* of grade 2 dysmenorrhoea

Grade 2 have maximum patients of *pitta kaphaprakriti*.e 56%. *Vata pitta* have 18%, *pitta* and *vataprakriti* have 4 % volunteers respectively.*Kaphaprakriti* have 0% patients respectively. *Vata – kaphais* of 7%. *Sannipataj* has not got 11 % of results

4. Distribution of volunteers of different *prakriti* of grade 3 dysmenorrhoea.

Grade 3 have maximum patients of *vata pitta prakriti*.e 63%. *Vataprakriti* have 12 %, *vata – kaphaprakriti* have 20% and *pitta prakriti* 2% and *pitta kaphaprakriti* have 3% patients. *Kapha* and *Sannipatajprakriti* has not got any significant results. Grade 3 being the highest grade of pain in the entire grade

5. Significant association between *Prakriti* and Pain gradation.

Since observations are on ordinal scale (gradations), we have used **Chi-Squared test** to test the association (correlation). From the results we can observe that **P-Value** is less than 0.05. Hence we conclude that there is significant association between *Prakriti* and Pain gradation.

6. Distribution of duration of pain of different grades in *vataprakriti* individuals.

Among these 6 candidates of *vata prakriti* 83% of the females suffer from primary dysmenorrhoea of grade 3, which is the maximum grade of pain in verbal multi dimensional scoring pattern. Followed by grade 2 patients which were 17 % after those grade 1 patients which were 0 %.

7. Distribution of duration of pain of different grades in *pitta prakriti* individuals.

There were only 2 candidates of *pitta prakriti*, among them 50% of the females suffered from primary dysmenorrhoea of grade 2 and other 50% suffered from grade 3 respectively.

8. Distribution of duration of pain of different grades in *kaphaprakriti* individuals.

Among those 2 candidates 100% of the females suffer from primary dysmenorrhoea of grade 1 and 0 female suffer from dysmenorrhoea of grade 2 & grade 3

9. Distribution of duration of pain of different grades in *vata pitta prakriti* individuals.

Among those 36 candidates 72% of the females suffer from primary dysmenorrhoea of grade 3 and 14 % female suffer from dysmenorrhoea of grade 2 and grade 1 respectively.



10. Distribution of duration of pain of different grades in *vataj prakriti* individuals.

Among those 23 candidates 56% of the females suffer from primary dysmenorrhoea of grade 1 and 35 % female suffer from dysmenorrhoea of grade 3 and 9 % of female suffer from dysmenorrhoea of grade 2.

11. Distribution of duration of pain of different grades in *pitta kaphaprakriti* individuals.

Among those 18 candidates 83 % of the females suffer from primary dysmenorrhoea of grade 2 and 11 % female suffer from dysmenorrhoea of grade 1 and 6% of grade 3.

12. Distribution of duration of pain of different grades in *sannipatajprakriti* individuals

Among those 3 all the females which I have got as a result was suffering from grade 2 dysmenorrhoea. None of the female of *sannipatikprakriti* suffered from grade 1 or grade 3 dysmenorrhoea.

Table 3 Correlation of various *prakriti* with *kashtartav* (different grades of pain of dysmenorrhoea)

<i>Prakriti</i>	Majority grade
<i>Vata</i>	Grade 3 (84 %)
<i>Pitta</i>	Grade 1 and grade 2 (50 %)
<i>Kapha</i>	Grade 1 (100%)
<i>Vata – pitta</i>	Grade 3 (72%)
<i>Vata – kapha</i>	Grade 1 (57 %)
<i>Kapha – pitta</i>	Grade 2 (83 %)
<i>Sannipataj</i>	Grade 2 (100%)

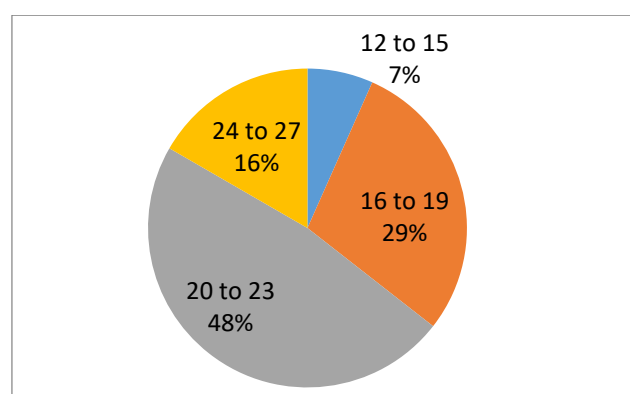
So, from the table no. 3, we can say that *Vataprakrati* and *Vata pitta prakriti* are those *prakriti* which mainly suffers from dysmenorrhoea of grade 3 i.e severe pain.

It is written in samhitas that *vata* is major and most important cause of pain in our body. We all know that *vata* plays major role in pathogenesis of

kastartava. So severe pain of grade 3 is mainly found in *vataprakriti*. If we talk about *pitta* we have studied *pitta gunai, esasneha, tikshana, ushna, dravtvan, amla, sara and katu*. The guna of *Artavaare* very similar to *pitta*. In *vatapittajprakriti*, *pitta* is present in *anubandhi* with *vata* and *pitta* can cause *artavadushti*. So, that is how these two *prakrities* tends to have dysmenorrhoea of grade 3.

Distribution of volunteers on the basis of age, occupation, duration of pain, family history, and relation with menarche was done.

1. Distribution of volunteers of primary dysmenorrhoea on the basis of age – majority of the volunteers (48 % for age group 20-23 years and 29 % volunteers were belonging to the age group 16-19 years) had suffered from primary dysmenorrhoea was mainly in the age group below 23 years. So, by this result it is clear that mainly college going girls were suffering from primary dysmenorrhoea. (Graph no. 2)

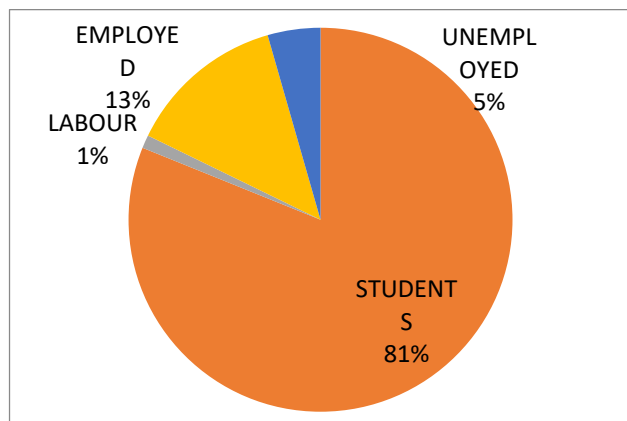


Graph 2 Distribution of volunteers in pie chart form on the basis of occupation

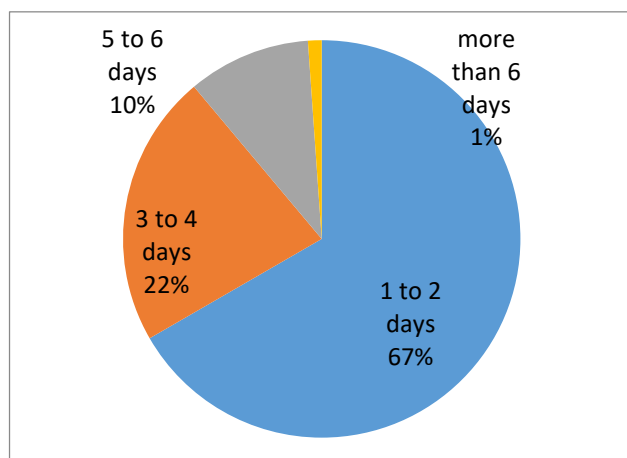
2. Distribution of volunteers of primary dysmenorrhoea on the basis of occupation – majority of the students suffered from primary dysmenorrhoea i.e 81%. (Graph no.3)



3. Distribution of volunteers of primary dysmenorrhoea on the basis of duration of pain – Majority of the volunteers (67 %) who were suffering from primary dysmenorrhoea suffered from pain in first two days mainly. (Graph no.4)



Graph 3 Distribution of volunteers in pie chart form on the basis of age group

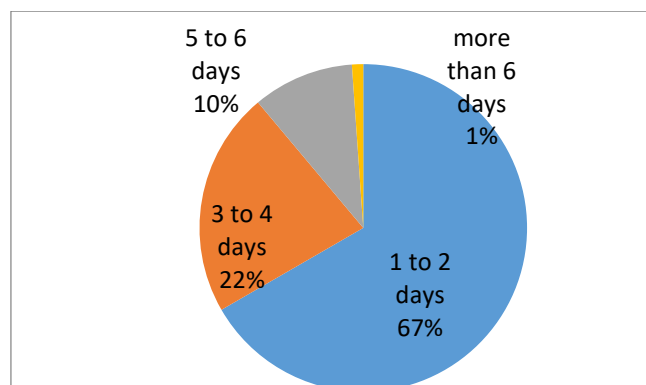


Graph 4 Distribution of volunteers in pie chart form on the basis of duration of pain

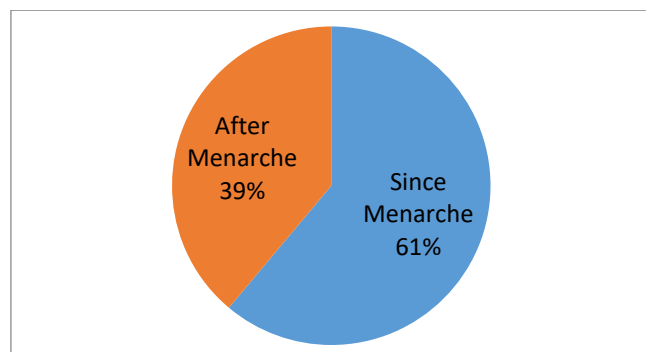
4. Distribution of volunteers of primary dysmenorrhoea on the basis of presence of family history - Majority of the volunteers (62 %) who were suffering from primary dysmenorrhoea was having positive family history. (Graph no.5)

5. Distribution of volunteers of primary dysmenorrhoea on the basis of relation with menarche - Majority of the volunteers (61 %) who were suffering from primary dysmenorrhoea was

suffering from the pain since menarche. (Graph no. 6)



Graph 5 Distribution of volunteers in pie chart form on the basis of family history of dysmenorrhea



Graph 6 Distribution of volunteers in pie chart form on the basis of relation with menarche

CONCLUSION

As we have already discussed that the word *Kashtartava* can be explained as – “*Kashtenamuchyatiitikashtartava*” i.e. the condition where *Artava* flows down with highest difficulty and that pain is known as “*Kashtartava*”. *Kashtartava* is a border term covering all the problems related to menstruation. Primary dysmenorrhoea, though not mentioned in classics. The word *Artava* has two meaning i.e. *Antahpushpa* (ovum) and *Bahirpushpa* (menstrual blood). But here it can be inferred as *Bahirpushpa* (menstrual blood only). Origin of *Artava* is caused by *rasa* and



RaktaDhatu by proper *Sthanika Agni*. *ArtavaPravritti* depends upon proper function of *Apana* and *VyanaVayu*, because *Apana* is responsible for *Raja Pravritti*, while *Vyana* is responsible for whole body blood circulation. The menstrual rhythm or we can say that the length of the cycle depends upon the Hypothalamo pituitary ovarian axis and its function. Whereas the amount of blood lost, depends upon the uterine condition. While describing the features of *ArtavaAyurveda* has mentioned it should be without pain. When it is associated with pain, it is known as *Kashtartava* which, is not mentioned anywhere as a separate disease in classical text but there are several disease conditions which can be correlated with *Kashtartava*. It is taken as a symptom of many disease, some of them are *VatajaYonivyapada*, *VatajaArtavadushti*, *Udavarta*, *Suchimukhi*, and *ArtavaKshaya* are. Since *VataDosha* and pain are proportional to each other and the *VataPrakopakaNidana* has been taken as the *Nidana* of *Kashtartava*. *Samprapti* of *Kashtartava* can be explained with the causes of *VataPrakopa*; *Datukshaya*, *Kopa*, *Margavaroda*. All the disease conditions which come under primary dysmenorrhoea can be explained well with these *Samprapties*. Also it can be co-related to dysmenorrhoea perfectly and it can cover almost all the theories which are postulated as etiopathogenesis of primary dysmenorrhoea. The endometrium which is the seat of *Artava*, especially the *Bahirpushpa* undergoes a series of cyclical changes in accordance with the influence of the hormones. It has been proposed that

prostaglandins bring about an induction of vasoconstriction of endometrial arterioles, thereby causing endometrial ischemia and pain (Dysmenorrhoea). *Dehikaprakriti* has also got a major role in this study. The *dehikaprakriti* is determined using *prakriti* assessment performed. *Prakriti* is a body constitution of an individual. It can neither be destroyed nor created after birth. It is only created at the time of birth and remains constant till the end. These are two types of *prakriti* a larger scale *dehika* and *mansikprakriti*. In this study *dehikaprakriti* is used. The seven types of *prakriti* (*dehika prakriti*) were used. This study basically deals with dysmenorrhoea and *dehikaprakriti*. A relationship is established between *dehikaprakriti* and primary dysmenorrhoea. According to the results and observations, *Vata pitta prakriti* and *vataprakriti* volunteers were more prone to dysmenorrhoea of grade 3 i.e severe pain. A significant difference was found in gradation of pain during menstruation in females of various *Dehika Prakriti*. So, this study can be immensely helpful as after assessment of the *Prakriti* of an individual the line of management (treatment) may become easier and we can easily prescribe various *ahara* (various food items) and *vihar* (lifestyle) according to *Prakriti* which would be helpful in preventing pain during menstruation



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