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Research Article

CLINICAL COMPARATIVE STUDY IN THE MANAGEMENT OF *KASHTARTAVA* W.S.R. PRIMARY DYSMENORRHOEA WITH *RUTUKARI VATI* AND *KUMARYASAVA*

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ABSTRACT

Adolescence is the rapid growing period when mainly the physical changes are important. 95% girls attain menarche at the age group of 10 to 16 yrs, the peak being 13yrs. Among them, not less than 50% of female are said to experience some discomfort or pain in relation to menstruation. *Kashtartava* is a symptom mentioned in various *Yoni vyapads, Vata* being the main causative factor for this condition, which is commonly compared with dysmenorrhoea by cotemporary science. Conventional treatment of primary dysmenorrhoea consists of non-steroidal and anti-inflammatory drugs, hormonal therapy which causes unwanted side effects. Hence *Rutukari Vati* which is mentioned in Bheshaja Samhita for *Kashtartava* having the properties like, *Vedanashamaka, Arthavajanana* have been selected for the planned study.

Design of Study: A Single blind comparative clinical study of two groups, trial and control, consisting of 15 subjects in each with pre-test and post-test design. Group A was given *Rutukarivati* and Group B was given *Kumaryasava* 25ml twice daily after food. **Result:** *Rutukarivati* contains most of the drugs with *Tiktha* and *Katu rasa*, *Usnaveerya* property and *Vatakaphahara* property; it is effective in controlling pain and regularizing the cycle. On comparison of overall effect of both groups has more significant result but percentage wise group A is more effective than group B. Mild increase in amount of bleeding was noted in patients in group A. It may be because of most of the ingredients in *Rutukarivati* are *Artavajanana* and *Apanavatashaman*.

KEYWORDS: *Kashtartava, Rutukari Vati, Kumaryasava,* Primary dysmenorrhoea.

INTRODUCTION

Every month majority of women experience various symptoms attributed to their menstrual cycle, dysmenorrhoea being the most common among them.

Dysmenorrhoea is defined as painful menstruation of sufficient magnitude so as to incapacitate day to day activities. It is usually primary and is associated with normal ovulatory cycles and with no pelvic pathology. 50% of menstruating women suffers from primary dysmenorrhoea out of which 10% are in capacitated for 1 to 3 days each month.

Pain is body's most important alarm symptom, it draws attention to the fact something is at fault. Total absence of pain is also as disastrous as un controlled severe pain. However, uncontrolled pain is the single most common reason for people seek medical advice.

The word "pain" is derived from the Latin counterpart "Poena" meaning penalty punishment or torment-rightly so as pain is the single most important symptom that brings patient to the emergency.

Kashtartava[1] is symptom mentioned in various *Yoni vyapads, vata* being the main causative factor for this condition. As it is painful menstruation, it is commonly compared with dysmenorrhoea of contemporary science.

It is the commonest of all gynaecological complaints. The menstrual blood flow is mainly under the control of *Apana Vayu*.[2] Vitiated *Vatadosha* is the main causative factor of *Kashtartava.*

Today's stressful modern life style, food habits, frequent interventions of female genital tract affects the uterine environment, which leads to higher incidence of dysmenorrhoea.

All the four factors *Rutu* (fertile period), *Kshetra* (female genital organ or whole body), *Ambu* (*Ahara rasa*), and *Beeja* (sperm and ovum) are affected indirectly by *Kashtartava*.

The incidence of dysmenorrhoea is affected by social status, occupation and age, so groups of school girls, college students, factory workers and women members of the armed forces each provide different statistics.

Conventional treatment of primary dysmenorrhoea consists of non-steroidal and anti-inflammatory drugs, hormonal therapy which causes unwanted side effects.

Ayurvedic herbo-mineral, non-hormonal, non-toxic preparations are proved effective in dysmenorrhoea.

In this context, a single blind randomized clinical study is designed to prove the efficacy of trial drugs *Rutukarivati* in *Kashtartav.*[3] The Yoga *Rutukarivati* has been selected for the study because of their *Vedanashamaka*, *Arthavajanaka* as well as *Vatapittaharaka* properties.

As *Rutukarivati* mentioned in Bheshaja Samhita is clinically found effective and scientifically not proved. The present study shows that *RutukariVati* has a significant effect on the *Kashtartava*.

Kshatartava

Almost all Acharyas have described regarding this symptom but all references are scattered in description of different *Yonivyapads*.

Samhita's	Symptoms	References
Caraka Samhita	*Saruk*	*Vatala Yoni Vyapad (Cha. Chi. 30/10-11)*
	Sa. Arti	*Paripluta and Maha Yoni Vyapad (Cha. Chi. 30/23-24, 36)*
	Rajah Krichchhra	*Udavarta Yoni Vyapad (Cha. Chi. 30/25-26)*
Sushrutha Samhita	*Rajah Krichchhra*	*Udavarta Yoni Vyapad (Su. U. 38/9-11)*
	Vedana	*Vataja Artavadushti (Su. Sha. 2/4)*
Ashtanga Sangraha & Ashtanga Hridya	*Rajah Krichchhra*	*Udavarta Yoni Vyapad (A. S. U. 38/36, A. H. U. 33/33-34)*
	Sa- Rujam	*Vataja Artavadushti (A. S. Sha. 1/24, A. H. Sha. 1/10)*
HaritaSamhita	*Saruja*	*Vataja Artavadushti (H. S. tri. 48/13)*
Madhava Nidana, Bhavprakasha and Yoga Ratnakara	*Rajah Krichchhra*	*Udavarta Yoni Vyapad (Ma. Ni. 62/2, Bha.Pra.Chi. 70/67)*

OBJECTIVES OF THE STUDY

1. Conceptual study of *Kashtartva.*
2. Clinical study of *Rutukarivati* and *Kumaryasava* in *Kashatartva*
3. To compare the effect of *Rutukari Vati* and *Kumaryasava* in treatment of *Kashatartva.*

***Rutukarivati* ingredients[4]**

Shunti, Samudraphena, Saindavalavana, Haridra, Hingu, Bola, Trivrit, Indravaruni, Tankana, Yavakshara, Sarjkshara, Kumari and *Chitraka.*

Properties of the Drugs

- *Shunthia[5]* has *Vatanulomaka* and *Shoolapra shamana* property.
- It contains Gingerols and diarylhepatanoids which act as potent inhibitor of prostaglandin biosynthesis enzyme (PG synthetase). It contains saponins, which cause estrogenic activity by influencing oestrogen metabolism through enzyme pathways that influence hypothalamic receptors. And also has anti-emetic and anti-diarrhoeal property. (Kiuchi – 1992).[6]
- *Hingu[7]* has *Vatanulomana* property which helps in normalizing the function of *Apanavata*, anti-flatulent and digestive properties and counteracts spasmodic disorders.
- *Hingu* may probably excite the secretion of progesterone hormone.
- *Kumari[8]* contains beeta-sitosterol and has the anti prostaglandin activity.
- *Indravaruni[9]* has a *Kaphapittahara, recana. Garbhapataka* properties.
- *Samudraphena, Yavakshara, Svarjakshara* having *Vatashamak, Deepana, Pachana* properties.[10,11,12]
- *Haridra* has a *Kaphavatahara* and *Lekhana* properties, which helps in *Vedanshamana* and *Arthavajanana* having the antiseptic properties.[13]
- *Bola* has a *Raktadoshaghna*, *Garbhashaya visshudhikrit* properties.[14]

MATERIALS AND METHOD

The purpose of the clinical trial is primarily to establish the efficacy and demonstrate freedom from unwanted side effects in human. Appropriate medicine plays a paramount role in the success of treatment as it is a main factor lying with the management of a disease. In other words there is direct proportional relationship between the success of treatment and the genuineness of the medicine.

Source of Data

a) Literary Source: All Ayurvedic classical, modern medical literatures, journals, website about the disease and drugs were referred and studied.

b) Sample source: Patients attending the OPD of *Prasoothitantra* and Streeroga, Alva's Ayurveda medical college and hospital, Moodbidri and other available sources were taken for the study.

Method of collection of data

30 patients according to inclusion and exclusion criteria, diagnosed as *Kashtartva* were selected from out-patient department of Alva's Ayurveda Hospital, Moodbidri and other sources and were subjected to clinical study.

A single blind clinical comparative study of two groups, consisting of 15 patients each with a pre-test and post-test design.

- The selected 15 patients in group A were administered with *Rutukari vati.*
- The selected 15 patients in group B were administered with *Kumaryasava.*
- The duration of treatment for both group A and group B was 2months. A separate case proforma was prepared with history taking physical signs, symptoms USG findings and lab investigations as mentioned by allied sciences.
- The parameters of signs, symptoms and investigations were scored on the basis of standard method and analysed statistically.

Inclusion Criteria

1. Patients coming with chief complaint of painful menstruation.
2. Age group between 14 to 25 years.
3. Patients with scanty menstruation or average amount of menses along with associated symptoms.

Exclusion Criteria

1. Patient with chronic illness
2. Patient with intrauterine devices
3. Menorrhagia
4. Any uterine pathology– fibroid, adenomyosis, endometriosis
5. Congenital anomalies leading to dysmenorrhoea.

Investigations

Hb%, USG etc., if necessary

Intervention

Group A

***Rutukarivati*:** 250 mg (2ratti) in tablet form

Time of administration: 1 BD before food orally.

Duration of treatment: Two menstrual cycles (1st day of the menstrual cycle).

***Anupana*:** Water

Follow up: for the 5th day of the next menstrual cycle

Group B

***Kumaryasava*:** 48ml

Time of administration: orally 24ml twice daily after food.

Duration of treatment: Two menstrual cycles (1st day of menstrual cycles)

Follow up: For 5th day the next menstrual cycle

Diagnostic Criteria

The diagnosis was mainly based on, clinical presentation of the patient i.e.,

- The pain begins a few hours before or just with the onset of menstruation.
- The pain is spasmodic and confined to lower abdomen.
- Systemic discomforts like nausea, vomiting, fatigue etc., may be associated.

Assessment Criteria

Subjective parameters like pain, associated complaints and objective parameters like, menstrual bleeding were assessed based upon the scoring.

Assessment scoring

Assessment of pain during menstruation

1) Intensity Grade

Normal	:	0
Mild	:	1
Moderate	:	2
Severe	:	3

2) Duration of Pain

Absent	:	0
Pain for one day few hours	:	1
Pain for whole day (one day)	:	2
Pain for two days	:	3

3) Nature of pain Grade

Absent	:	0
Occasional	:	1
Dull	:	2
Intermittent spasmodic	:	3

4) IMP

21 to 35 days	:	0
<21	:	1
>35	:	2

5) Amount

Scanty	:	3- Spotting
Average	:	2 - 1 - 2 pads
Normal	:	1 - 3 - 4 pads
Excessive	:	0 - 5 or more

6) Associated Complaints Total 10 complaints

7-10 complaints	:	3
4- 6 complaints	:	2
1 -3 complaints	:	1
0 complaints	:	0

7) Over all Assessment of therapeutic effect

Cured	:	More than 75%
Marked improvement	:	51-74%
Moderate improvement	:	26-50%
Mild improvement	:	Less than 25%

Observation

In the present study, the subjective and objective parameters were observed, analysed and interpreted to prove the efficacy of the drugs recommended in the study groups. First the socio demographic characteristics such as age, domicile, occupation, socio-economic status, educational status, religion were taken for assessing the equality of both the groups.

Data related to *Kashtartava* were thoroughly evaluated and interpreted. The conditions such as pattern of menstrual bleeding, painful menstruation were also assessed.

Data regarding personal history of both groups like occupation, diet were also collected. Age of marriage, contraceptive history, family history, parity etc., was also taken into consideration as these are thought to be affecting the disease indirectly.

The data collected were classified as follows.

Section A: Data related to socio demographic background

Section B: Data related to personal history

Section C: Data related to clinical study

Section A: Data Related To Socio Demographic Background

Table 1: Distribution of patient according to Age

Age	Group A	Group B	Total	Percentage
15-20	5	8	13	43.3%
21-25	0	7	17	56.6%

Among 30 patients, 43.3% in 15-20yrs of age group, 56.6% in 21-25yrs of age group.

Graph No 1

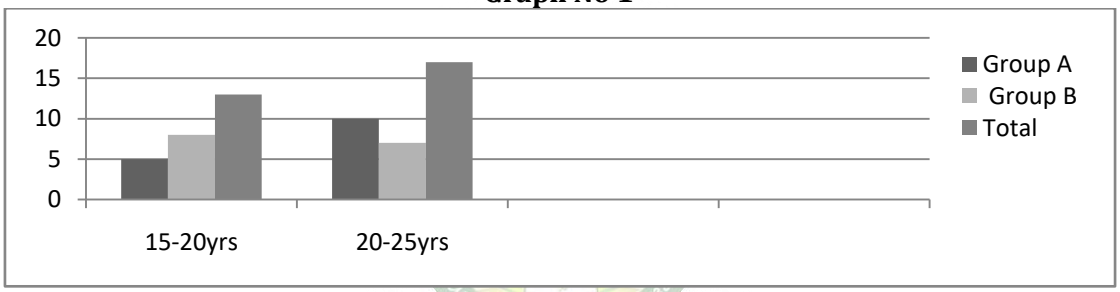


Table 2: Distribution of patients according to Domicile

Domicile	Group A	Group B	Total	Percentage
Urban	6	7	13	43%
Rural	9	8	17	57%

Among 30 patients, 43% belongs to urban area. 57% belongs to rural area.

Graph No 2

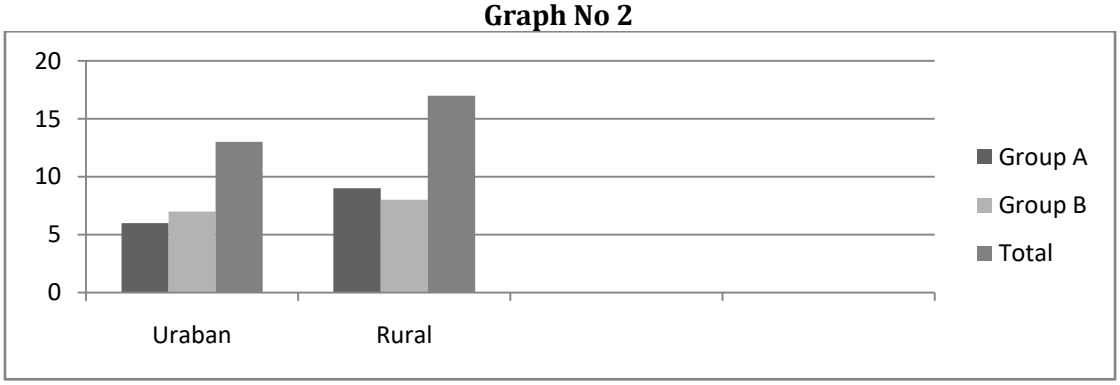


Table 3: Incidence according to marital status

Marital status	Group A	Group B	Total	Percentage
Married	6	7	13	43%
Unmarried	9	8	17	57%

Among 30 patients, 43% were married. 57% were unmarried.

Graph No 3

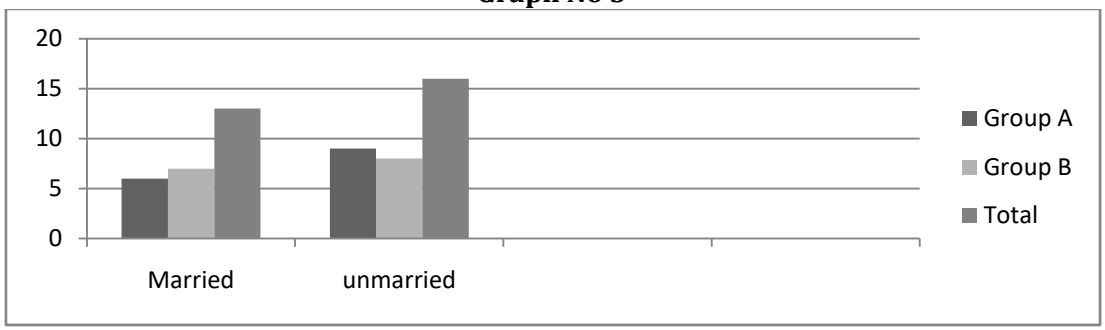


Table 4: Distribution of patients according to occupation

Occupation	Group A	Group B	Total	Percentage
Service	2	4	6	20%
Labor	4	5	9	30%
Student	9	6	15	50%

Among 30 patients, 20% were Service, 30% were Labor, 50% Students.

Graph no 4

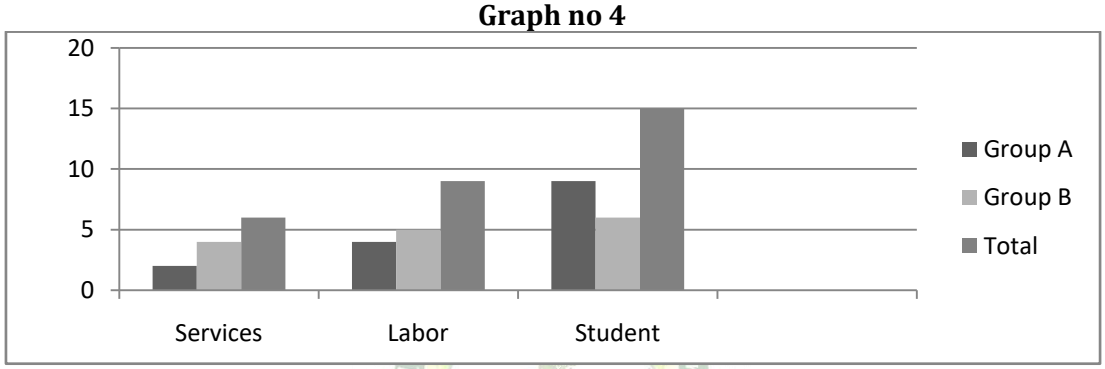
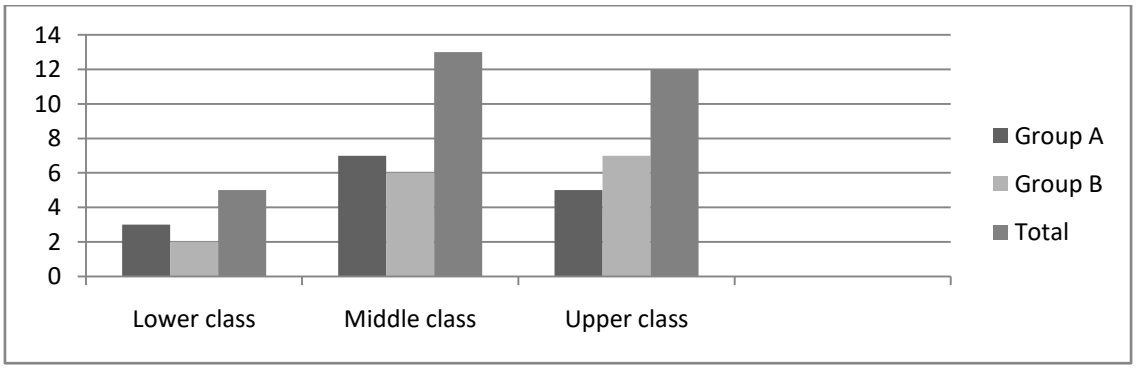


Table 5: Distribution of patients According Socioeconomic Status

Socio economic Status	Group A	Group B	Total	Percentage
Lower class	3	2	5	16.7%
Middle class	7	6	13	43.3%
Upper class	5	7	12	40%

Among 30 patients, 43.3 % patients were belonging to middle class, 40% were from lower class and 16.7% were belonging to upper class.

Graph no 5



Section B: Data Related to Personal History

Table 6: Distribution of patients according to diet

Diet	Group A	Group B	Total	Percentage
Veg	4	3	7	23%
Mixed	11	12	23	77%

Among 30 patients, 23% were Vegetarian, 77% were taken mixed.

Graph no 6

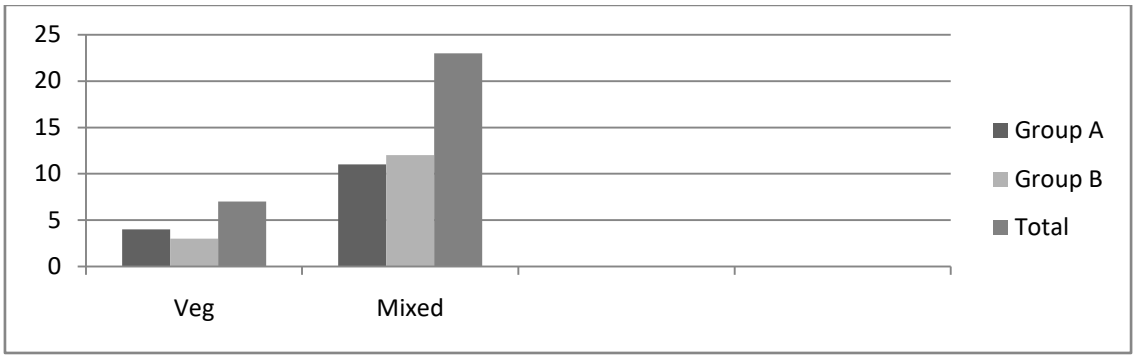


Table 7: Distribution of patients according to *Prakruti*

Prakruti	**Group A**	**Group B**	**Total**	**Percentage**
Vatakapha	7	5	12	40%
Kapha Pitta	2	2	4	13.3%
Pitta Kapha	1	1	2	6.7%
Kapha Vata	1	1	2	6.7%
Vata Pitta	4	6	10	33.3%

Among 30 patients, majority were of *Vatakapha Prakriti* with 40%. 33.3% were of *Vatapitta Prakriti* and 6.7 % were of *Pittakapha Prakriti*, *Kaphapittaprakriti* were 13.3%, *Kaphavata* were 6.7%.

Graph No 7

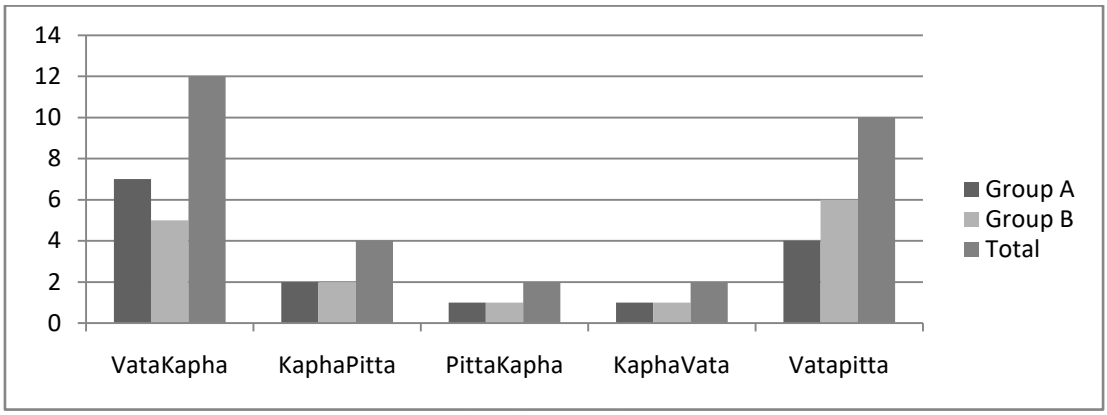


Table 8: Distribution of patients according to Parity

Parity	**Group A**	**Group B**	**total**	**Percentage**
P_0	14	14	28	93.3%
P_1	1	1	2	6.6%
P_2	0	0	0	0

Among 30 patients, Majority of patients were having no children i.e., 93.3% and 6.6% patients were having one child.

Graph no 8

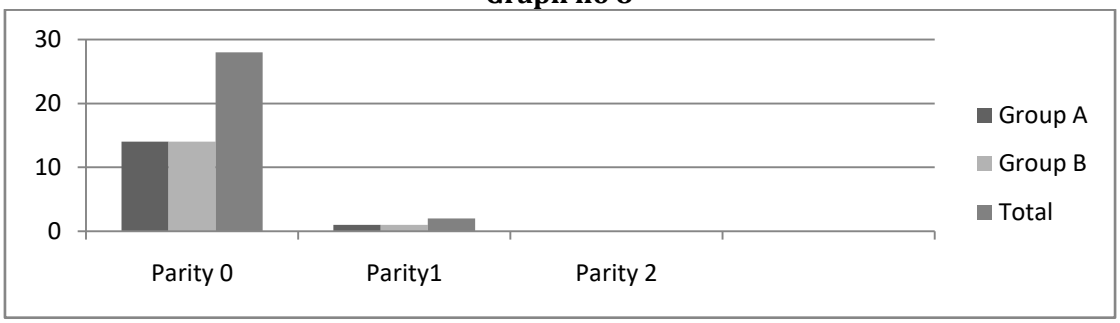


Table 9: Distribution of patients according to Family history

Family History	**Group A**	**Group B**	**Total**	**Percentage**
Absent	12	14	26	86%
Present	3	1	4	13.3%

Among 30 patients, 93.3% were not shown any family history. 13.3% of patients had family history.

Graph No 9

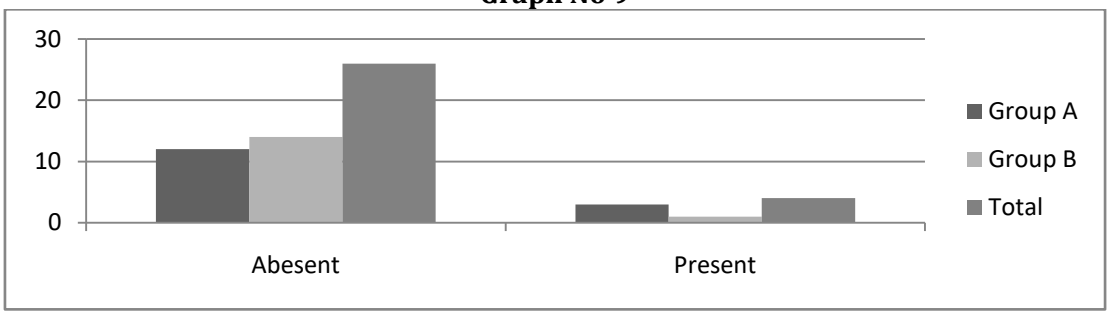


Table 10: Distribution of patients according to Mental Stress

Mental Stress	Group A	Group B	Total	Percentage
Present	10	7	17	56.67%
Absent	5	8	13	43.33%

Among 30 patients, 56.67% patients had mental stress, in 43.33% patient it was absent.

Graph no 10

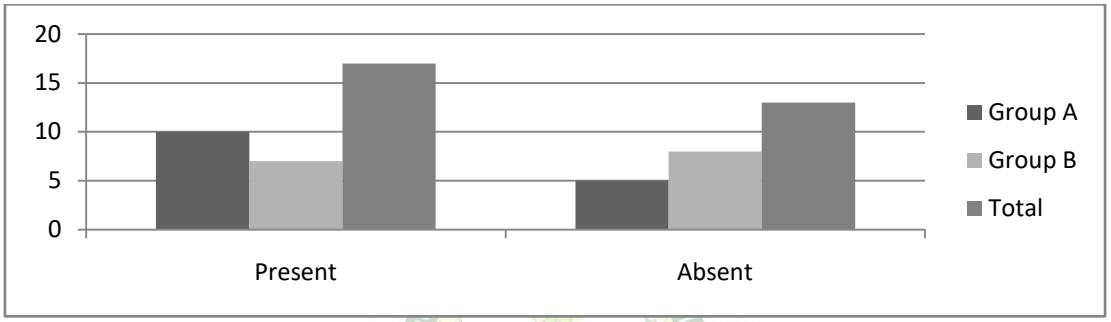


Table 11: Distribution of patients according to *Satva*

Satva	Group A	Group B	Total	Percentage
Pravara	0	0	0	0%
Madhyama	14	14	28	93.3%
Avara	1	1	2	6.6%

Among 30 patients, 93.3% were *Madhyamasatva*, 6.6% were *Avarasatva*.

Graph no 11

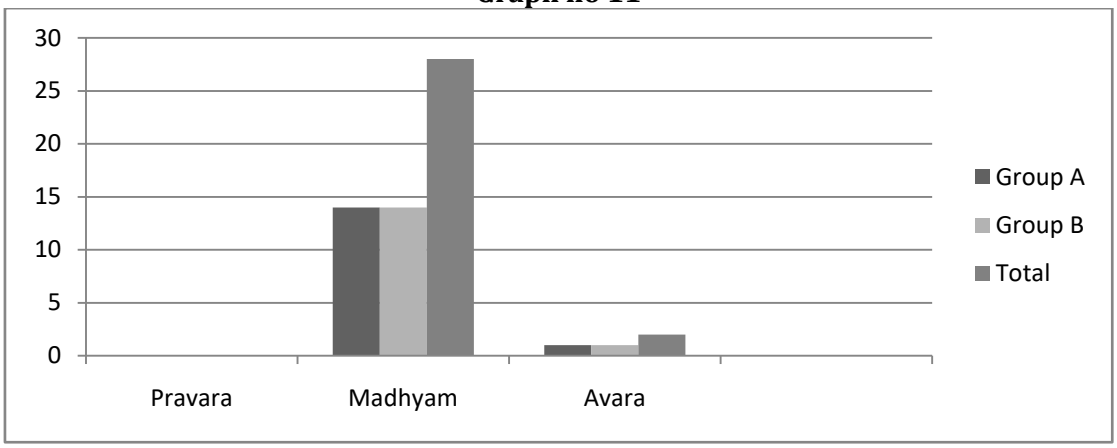


Table 12: Distribution of patients according to *Samhanana*

Samhanana	Group A	Group B	Total	Percentage
Pravara	0	0	0	0
Madhyama	13	15	28	93%
Avara	2	0	2	6.6%

Among 30 patients, 93% were *Madhayama samhanana*, 6.6% were *Avara*.

Graph no 12

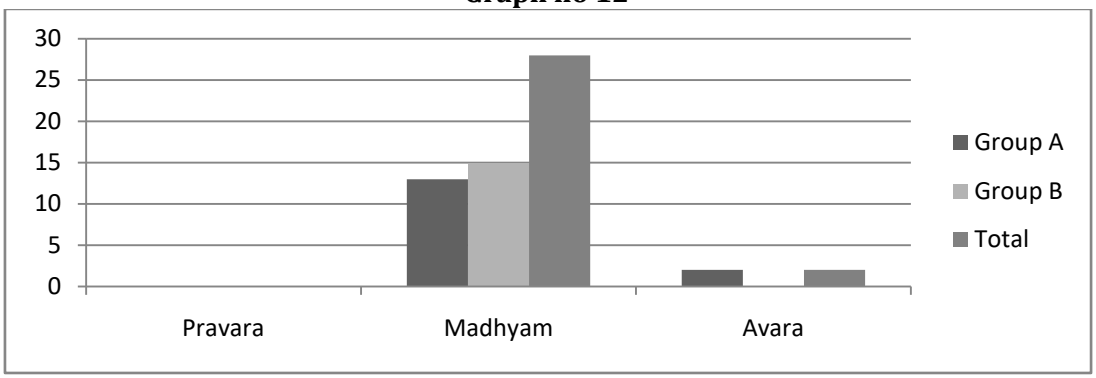


Table 13: Distribution of patients according to *Pramana*

Pramana	**Group A**	**Group B**	**Total**	**Percentage**
Pravara	0	0	0	0
Madhyama	15	15	30	100%
Avara	0	0	0	0

Among 30 patients,100% Patients had *Madhyama Pramana*.

Graph no 13

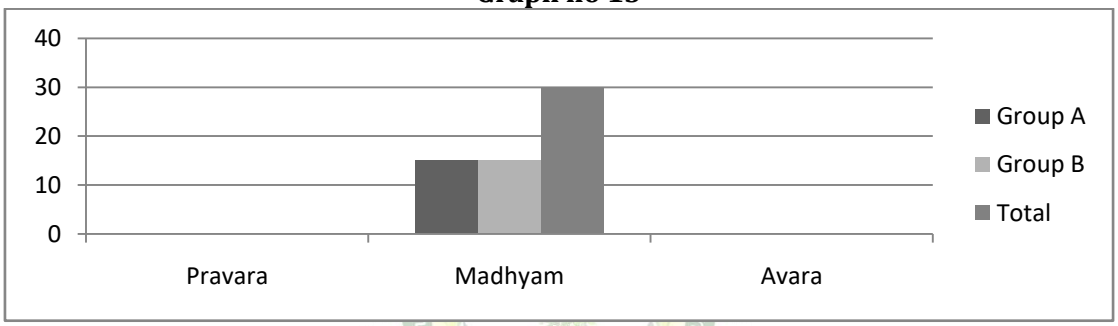


Table 14: Distribution of patients according to *Vyayama Shakti*

Vyayama shakti	**Group A**	**Group B**	**Total**	**Percentage**
Pravara	o	0	0	0
Madhyama	15	14	29	96.67%
Avara	0	1	1	3.33%

Among 30 patients, 96.67% patients had *Madhyamavyayama Shakti* and 3.33% had *Avaravyayama Shakti*.

Graph no.14

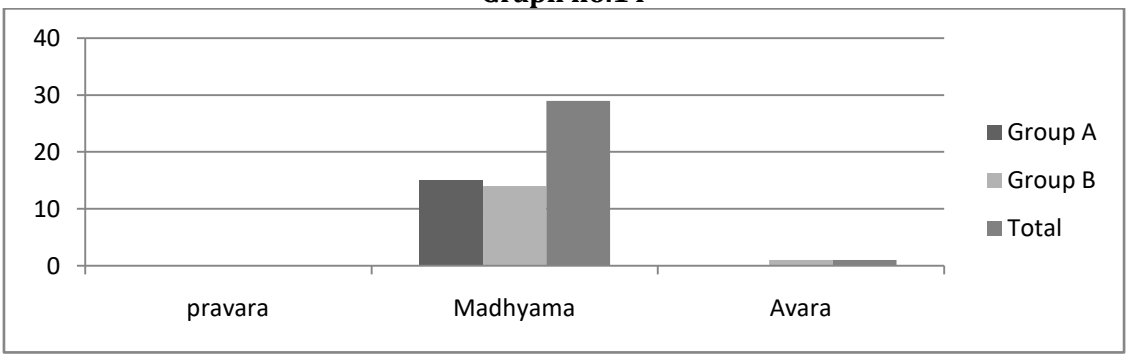
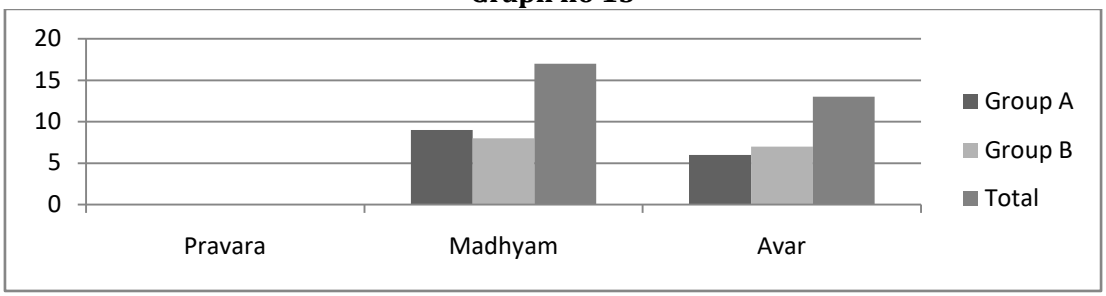


Table 15: Distribution according to *Ahara Shakti*

Ahara Shakti	**Group A**	**Group B**	**Total**	**Percentage**
Pravara	0	0	0	0
Madhyam	9	8	17	56.67%
Avara	6	7	13	43.33%

Among 30 patients, 56.67% patients had *Madhyamaahara Shakti* and 43.33% had *Avaraahara Shakti*.

Graph no 15



Section C-Chief Complaints

Table 16: Distribution of patients according to Intensity of pain

Location of Pain	Group A	Group B	Total	Percentage
Mild	10	11	21	70%
Moderate	03	04	07	23.3%
Severe	01	01	2	6.6%

Among 30 Patients, 70% had Mild pain. 23.3% had Moderate pain 6.6% had severe pain

Table 17: Distribution of patients according to duration of pain

Duration (In days)	Group A	Group B	Total	Percentage
1-2	7	7	14	46.67%
3-4	6	7	13	43.33%
5-6	2	1	3	10%

Among 30 Patients, 46.67% patients had 1-2 days pain, 43.33% patients had 3-4 days pain and 10% had 5-6 days pain.

Graph no 17

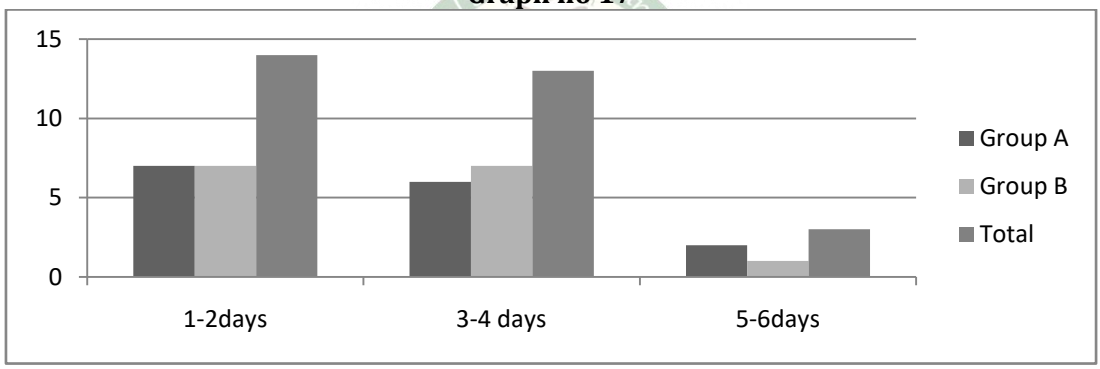


Table 18: Distribution of patients according to Nature of Pain

Nature of Pain	Group A	Group B	Total	Percentage
Spasmodic	7	8	15	50%
Dull	1	0	1	3.3%
Continuous	8	6	14	46.6%
Intermittent	0	0	0	0

Among 30 Patients, 50% had spasmodic pain. 3.3% had dull pain. 46.6% had continuous pain.

Graph no 18

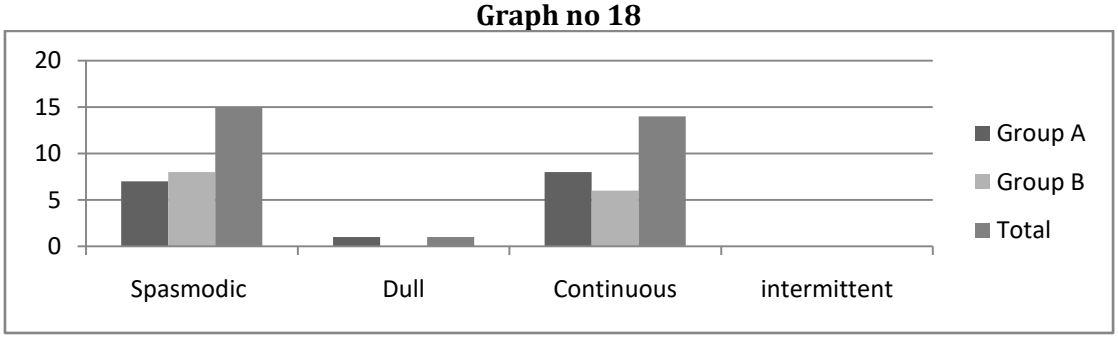


Table 19: Distribution of patients according to amount of menstrual bleeding

Amount of Bleeding	Group A	Group B	Total	Percentage
Normal	10	8	18	6o%
Scanty	6	6	12	40%

Among 30 Patients, 60% had minimal bleeding. 40% had Scanty (Spotting) bleeding..

Graph no 19

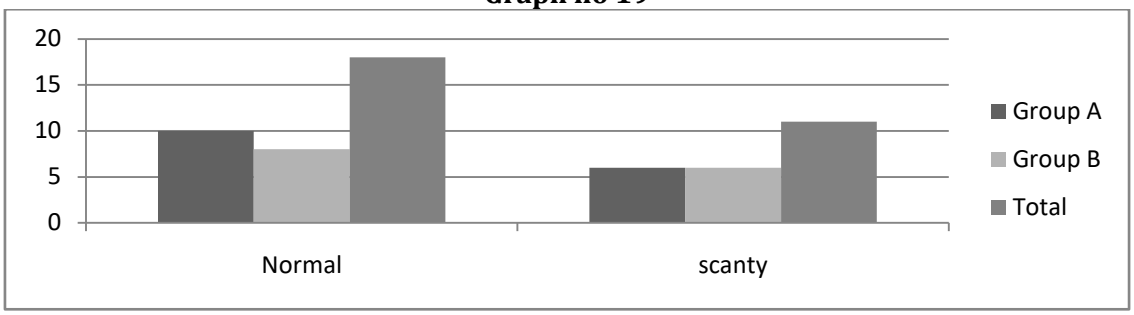


Table 20: Distribution of patients according to Duration of bleeding

Duration	Group A	Group B	Total	Percentage
1-2days	05	06	11	36%
3-4 days	7	7	14	46%
5-6 days	3	2	5	16%

Among 30 Patients, 36% had duration of bleeding up to 1-2days, 46. % had 3-4days, 46.% had 5 to 6 days.

Graph 20

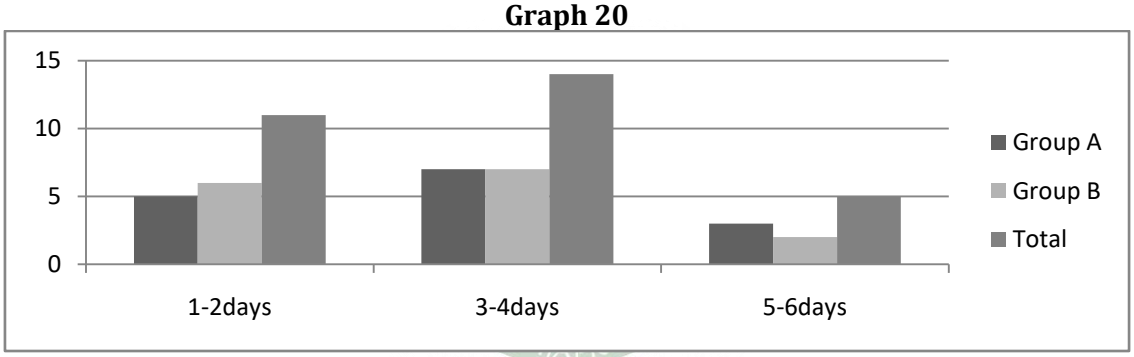
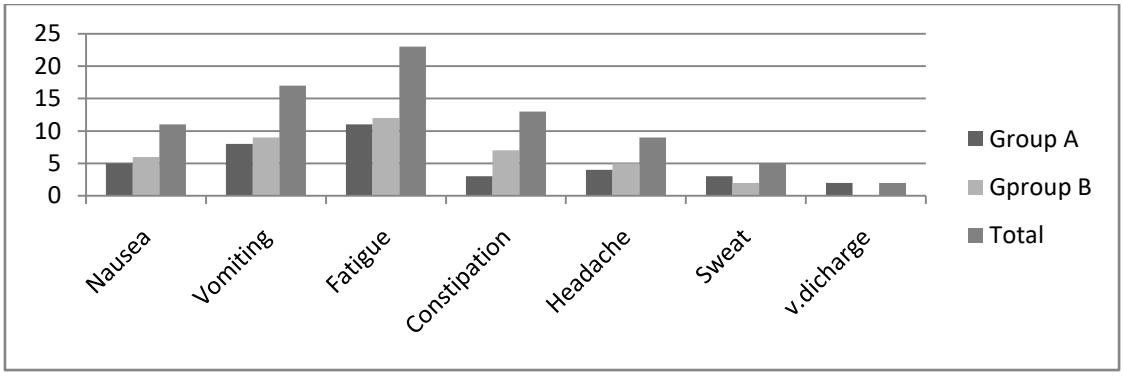


Table 21: Distribution of patients according to Associated Complaints

Complaints	Group A	Group B	Total	Percentage
Nausea	5	6	11	36.67
Vomiting	8	9	17	56.67
Fatigue	11	12	23	76.67
Constipation	6	7	13	43.33
Head ache	4	5	9	30
Sweat	3	2	5	16.67
Vaginal discharge	2	0	2	10%

Among 30 Patients, 36.67% patients had nausea, 56.67% had vomiting, 76.67% had fatigue, 43.33% had constipation, 30% had headache, 16.67% had sweating, 10% vaginal discharge.

Graph 21



RESULT

Effect of treatment

Table 22: Group A: Intensity of Pain

Mean	Mean		%	M.D	t Test			
	BT	AT			SD	SE	t	P
AT1	2.067	1.133	45%	0.933	0.2582	0.0666	14.00	<0.001
AT2	2.067	0.333	64%	1.333	0.7238	0.1869	7.135	<0.001
AT3	2.067	0.133	94%	1.933	0.5936	0.1533	12.614	<0.001

The mean score of the symptom which was 2.067 before treatment reduced to1.13 with mean difference of 0.93±0.0.25 after treatment on 30th day and reduced to 0.33 with mean difference of1.33±0.72 after treatment on 60th day and further reduced to 0.13 with mean difference of 1.53≠0.59 on follow up.

Table 23: Group B: Intensity of Pain

Mean	Mean AT		%	M D	t TEST			
	BT	AT			SD	SE	t	P
AT1	1.800	1.200	33%	0.600	0.6325	0.1633	3.674	<0.001
AT2	1.800	0.800	55%	1.000	0.6761	0.2182	4.458	<0.001
AT3	1.800	0.600	66%	1.200	0.1447	8.290	6.261	<0.001

The mean score of the symptom which was 1.8 before treatment reduced to 1.2 with mean difference of 0.6 ± 0.63 after treatment on 30th day and reduced to 0.8 with mean difference of 1.2±0.67 after treatment on 60th day and further reduced to 0.6 with mean difference of 1.2±0.14 on follow-up.

Table 24: Duration of pain in the Group A

Mean	Mean		%	M D	t TEST		
	BT	AT			SD	t	p
AT1	1.867	1.133	39%	0.733	0.4577	0.1182	6.205
AT2	1.867	0.625	64%	1.200	0.7746	0.2000	6.000
AT3	1.867	0.200	89%	1.667	0.8997	0.2333	7.174

The mean score of the symptom which was 1.86 before treatment, reduced to 1.13 with mean difference of 0.73±0.45 after treatment on 30th day and reduced to 0.6 with mean difference of 1.2±0.77 after treatment on 60th day and further reduced to 0.2 with mean difference of 1.6±0.8 on follow up.

Table 25: Duration of pain in Group B

Mean	Mean		%	M D	t TEST			
	BT	AT			SD	SE	t	P
AT1	1.800	1.133	37%	0.667	0.4880	0.1260	5.292	<0.001
AT2	1.800	0.7333	59%	1.067	0.7037	0.1817	5.870	<0.001
AT3	1.800	0.4000	77%	1.400	0.9856	0.2545	5.501	<0.001

The mean score of the symptom which was 1.8 before treatment reduced to 1.13 with mean difference of 0.6±0.48 after treatment on 30th day and reduced to 0.73 with mean difference of 1.067±0.70 after treatment on 60th day and further reduced to 0.4 with mean difference of 1.4±0.98 on follow up.

Table 26: Nature of pain in Group A

Mean	Mean AT		%	M D	t TEST			
	BT	AT			SD	SE	t	P
AT1	1.600	1.067	33	0.5333	0.7432	0.1919	2.779	<0.01
AT2	1.600	0.4667	70	1.133	1.302	0.3362	3.371	<0.01
AT3	1.600	0.2000	87	1.400	1.352	0.3491	4.010	<0.01

The mean score of the symptom which was 1.6 before treatment reduced to 1.06 with mean difference of 0.53±0.74 after treatment on 30th day and reduced to 0.4 with mean difference of 1.13±1.13 after treatment on 60th day and further reduced to 0.2 with mean difference of 1.4±1.3 on follow up.

Table 27: Nature of pain in Group B

Mean	Mean AT		%	M D	t Test			
	BT	AT			SD	SE	t	P
AT1	1.267	0.7333	41	0.5333	0.5164	0.1333	4.000	<0.01
AT2	1.267	0.4667	66	0.8000	0.6761	0.1746	4.583	<0.001
AT3	1.267	0.0666	75	0.0900	0.8619	0.2225	5.392	<0.001

The mean score of the symptom which was 1.2 before treatment reduced to 0.7 with mean difference of 0.53±0.51 after treatment on 30th day and reduced to 0.8 with mean difference of 1.2±0.67 after treatment on 60th day and further reduced to 0.06 with mean difference of 0.090±0.86 on follow up.

Table 28: Amount of bleeding in Group A Table no 7

Mean	Mean		%	M D	t TEST			
	BT	AT			SD	SE	t	P
AT1	1.200	0.667	44	0.5333	0.5164	0.1333	4.000	<0.01
AT2	1.200	0.200	83	1.000	0.8452	0.2182	4.583	<0.001
AT3	1.200	0.066	94	1.`133	0.9904	0.2557	4.432	<0.001

The mean score of the symptom which was 1.2 before treatment reduced to 0.6 with mean difference of 0.5±0.51 after treatment on 30th day and reduced to 0.2 with mean difference of 1.0±0.84 after treatment on 60th day and further reduced to 0.06 with mean difference of 1.13±0.99 on follow up.

Table 29: Amount of blood in Group B

Mean	Mean A		%	M D	t TEST			
	BT	AT			SD	SE	T	P
AT1	1.533	0.6000	26	0.400	0.6325	0.1633	2.449	<0.01
AT2	1.533	0.6000	60	0.933	0.4577	0.1182	7.897	<0.001
AT3	1.533	0.0666	64	0..967	0.6399	0.1652	8.876	<0.001

The mean score of the symptom which was 1.5 before treatment reduced to 0.6 with mean difference of 0.6±0.40 after treatment on 30th day and reduced to 0.6 with mean difference of 0.9±0.45 after treatment on 60th day and further reduced to 0.6 with mean difference of 0.9±0.96 on follow up.

Table 30: Intra menstrual period Group A

Mean B	Mean AT		%	M D	T test			
	BT	AT			SD	SE	T	P
AT1	1.600	0.8667	45	0.7333	0.5936	0.1533	4.785	<0.001
AT2	1.600	0.6000	62	1.000	0.8452	0.2182	4.583	<0.001
AT3	1.600	0.4000	75	1.200	0.9411	0.2430	4.938	<0.001

The mean score of the symptom which was 1.6 before treatment, reduced to 0.86 with mean difference of 0.73±0.59 after treatment on 30th day and reduced to 0.60 with mean difference of 1.0±0.84 after treatment on 60th day and further reduced to 0.4 with mean difference of 1.2±0.94 on follow-up..

Table 31: Intra menstrual period Group B

Mean	Mean		%	M D	T Test			
	BT	AT			SD	SE	T	P
AT1	1.600	0.7333	28	0.3333	0.4880	0.1260	2.646	<0.01
AT2	1.600	0.6667	37	0.4000	0.6325	0.1633	2.449	<0.01
AT3	1.600	0.5333	47	0.5333	0.6399	0.1652	3.228	<0.01

The mean score of the symptom which was 1.06 before treatment, reduced to 0.7with mean difference of 0.33±0.48 after treatment on 30th day and reduced to 0.6 with mean difference of 0.40±0.63 after treatment on 60th day and further reduced to 0.5 with mean difference of 0.53±0.63 on follow-up.

Table 32: Associated Complaints in Group A

Mean	Mean AT		%	M D	t Test			
df	BT	AT			SD	SE	t	P
14	1.267	0.6667	50	0.6000	0.5071	0.1309	4.583	<0.001
14	1.267	0.1333	86	1.033	0.9155	0.2364	4.795	<0.001
14	1.267	0.2000	88	1.067	1.100	0.2840	3.756	<0.01

The mean score of the symptom which was 1.2 before treatment, reduced to 0.6 with mean difference of 0.60±0.50 after treatment on 30th day and reduced to 0.13 with mean difference of 1.03±0.91 after treatment on 60th day and increased to 0.20 with mean difference of 1.067±1.06 on follow up.

Table 33: Associated Complaints in Group B

Mean	Mean AT		%	M D	t Test			
	BT	AT			SD	SE	t	P
AT1	1.067	0.6667	37	0.4000	0.5071	0.1309	3.055	<0.01
AT2	1.067	0.2667	75	0.8000	0.8619	0.2225	3.595	<0.01
AT3	1.067	0.1333	84	0.9333	1.033	0.2667	3.500	<0.01

The mean score of the symptom which was 1.06 before treatment, reduced to 0.6 with mean difference of 0.40±0.50 after treatment on 30th day and reduced to 0.26 with mean difference of 0.80±0.86 after treatment on 60th day and further reduced to 0.13 with mean difference of 0.93±0.1.03 on follow up.

Table 34: Comparative Effect of Group A and Group B

Signs and Symptoms	Mean Difference		% of Relief		T Value	P value
	Group A	Group B	Group A	Group B		
Intensity of pain	0.933	1.133	94	66	3.550	< 0.01
Duration of pain	1.600	1.400	89	77	0.577	> 0.05
Nature of pain	1.200	1.067	87	75	0.464	> 0.05
Amount of blood	0.8667	1.333	94	64	1.742	>0.05
Intramenstrual period	1.200	0.5333	75	47	2.269	<0.05
Associated complaints	1.067	0.800	88	84	0.739	> 0.05

Table 35: Showing overall effect of treatment on group A and Group B

Effect of Therapy	Group A	%	Group B	%
Cured 100% relief	4	26	2	13
Markedly improved ≥75%	6	40	9	60
Moderately improved 50 -74% relief	4	25	2	13

Graph no: 22 showing overall effect of treatment on group A and group B

In Group A, 4 patients (26 %) were completely cured, 6 patients (40 %) were markedly improved, 4 patients (25%) were moderately improved and one patient (6 %) was partially improved.

In Group B 2 patients (13 %) were completely cured, 9 patients (60 %) were markedly improved, 2 patients (13.3 %) were moderately improved, 2 patients (13.3 %) were partially improved.

DISCUSSION ON RESULTS

Effect of treatment was clinically assessed before after treatment and on follow up.

Effect of treatment on Intensity of pain during M.C.

Among 15 patients in trial group 6 were having severe pain 9 were having moderate pain. Among 15 patients in control group 7 were having severe pain 8 were having moderate pain.

The mean score of the symptom which was 2.06 before treatment, reduced to 0.13 after treatment in trial group. In control group it has decreased from 1.80 to 0.60 after treatment. Statistical analysis of the difference observed between the two groups proved to be significant (P<0.01).

In trial group, 94% relief was observed and results were highly significant statistically (<0.001).

Effect of treatment on duration of pain

Among 15 patients in trial group 10 were having pain premenstrual 4 to 5 days. 5 patients were having pain during menstruation 3 days. Among 15 patients in control group 7 were having pain premenstrual 4 to 5 days. 8 were having pain during menstruation for 3to 4 days.

The mean score of the symptom which was 1.86 before treatment, reduced to 0.20 after treatment in trial group**.** In control group it has decreased from 1.80 to 0.40 after treatment. Statically analysis of the difference observed between the two groups proved to be insignificant (P>0.05). In trial group, 89% relief was observed and results were highly significant statistically (<0.001). *Rutukarivati* having *Shunti*, *Hingu*, *Haridra dravyas* acts as *Vatashamak* (*Apanavata*).

Effect of treatment on Nature of pain

Among 15 patients in trial group, 6 were having spasmodic pain, 5 were having dull pain and 4 having continuous pain. Among 15 patients in control group, 9 were having spasmodic pain. 4 were having intermittent pain, 2 were having dull pain.

The mean score of the symptom which was 1.60 before treatment, reduced to 0.20 after treatment in trial group**.** In control group it has decreased from 1.20 to 0.06 after treatment. Statically analysis of the difference observed between the two groups proved to be insignificant (P>0.05). In trial group, 87% relief was observed and results were highly significant statistically (<0.001). May be study of drugs contain *Kumari, Haridra* are Antiprogladin and antisposomodic activity.

Effect of treatment on Intramenstrual period

Among 15 patients in trial group, 6 were having irregular cycle. Among 15 patients in control group 9 were having ½ days menstrual flow. 6 were having ¾ days menstrual flow.

The mean score of the symptom which was 1.60 before treatment reduced, 0.40 after treatment in trial group. The mean score of the symptom of which was 1.067 before treatment reduced to 0.53 after treatment in control group. Statically analysis of

the difference observed between the two groups proved to be insignificant (P>0.05). In trial group, 75% relief was observed and results were highly significant statistically (<0.001). *Dravyas* are like *Hingu, Tankana[15], Hariidra, kumara* are having the property of *Artavajanana* property.

Effect of treatment on Menstrual flow (Amount of blood loss)

Among 15 patients in trial group 12 were having ½ days menstrual flow Scanty.3 were having 3/4 days mf. Among 15 patients in control group 9 were having 1/2days menstrual flow, 6 were having ¾ days menstrual flow.

The mean score of the symptom of which was 1.20 before treatment reduced 0.06 after treatment in trial group. The mean score of the symptom of which was 1.53 before treatment reduced to 0.06 after treatment in control group. Statically analysis of the difference observed between the two groups proved to be insignificant (P>0.05).

In trial group, 94% relief was observed and results were highly significant statistically (<0.001). May be *Dravyas* having the properties of *Katu Vipaka, Ushna Virya, Tikshna, Sara guna* increased the menstrual flow.

Effect of treatment on associated complaints

Among 15 patients in trial group, 12 were having 3 complaints. 3 were having no complaints. Among 15 patients in control group 9 were having 3 complaints 5 were having 2 complaints, 1 was having 6 complaints.

The mean score of the symptom of which was 1.200 before treatment reduced to 0.2 after treatment in trial group. The mean score of the symptom of which was 1.06 before treatment reduced to 0.13 after treatment in control group. Statically analysis of the difference observed between the two groups proved to be insignificant (P>0.05).

In trial group, 94% relief was observed and results were highly significant statistically (<0.001) maybe *Dravyasgunaprabhava (Tiksna, Sara, Laghu)* and *Rasa (Tikta, Kasaya, Laghu)* decreases the *Kaphapitta.*

Overall assessment of therapeutic effect

In Group A, 4 patients (26%) were completely cured, 6 patients (40%) were markedly improved, 4 patients (25%) were moderately improved and 1 patient (6 %) was partially improved.

In Group B 2patients (13%) were completely cured, 9 patients (60%) were markedly improved, 2 patients (13.3%) were moderately improved, 2 patients (13.3%) was partially improved.

CONCLUSION

- Dysmenorrhoea, which means painful menstruation, is frankly not a disease. It is symptom associated with much gynaecological pathologies. But when it present solely as a compliant association of any other symptom, it may be considered as a primary dysmenorrhoea.
- In the classics of Ayurveda, painful menstruation finds its role as a sole symptom in *Udavartha Yoniyapat,* as well as associated complaint with many other symptoms in the cases of *Vatajyonivyapat, Vatajarthavadrusti*, *Pariplutha yoni yapath*.
- In disease *Kashtartava* there is mainly derangement of *Vata dosha*. The reasons for *Vata* vitiation are *Margavarodha, Dhatukshaya* and *Swanidana Prakopa. Margavarodha* i.e., obstruction either physiological or anatomical.
- As in all cases of *Kashtartava Vata Prakopa i*s the main factor, the treatment should be directed to the treatment of *Vata* and its cause. For *Avrita Apana Vayu,* the treatment should be *Agnideepaka, Grahi, Vata Anulomak*a and *Pakvashayashuddhikara*.
- Produce the specific target action on the *Garbhashaya, Arthava Dhatu* and *Apanavata*; in which *Kapha pitta shamaka* property clears the *Artavavaha* Srotas and *Ushnaguna* and *Veerya* pacifies *Apana Vata* which in turn plays *Vatanulomana. Dravyaprabhava* of formulation helps in the process of cyclical healthy production of menstrual blood which is termed as *Artavajanana* in Ayurvedic Classics.

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