



ISSN 2456-3110

Vol 6 · Issue 5

Sept-Oct 2021

Journal of
**Ayurveda and Integrated
Medical Sciences**

www.jaims.in

JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences



Maharshi Charaka
Ayurveda

Indexed

Study to evaluate the efficacy of *Yavani Churna* and Yoga Therapy in Primary Dysmenorrhea - A Clinical Study

Kalpna Kuber¹, Trupti Jain², Charu Bansal³, Reshma Shekh⁴

¹M.O., Govt. Autonomous Ayurved College and Hospital, Gwalior, Madhya Pradesh, India.

²Assistant Professor, Dept. of Swasthavritta, Pt. K.L.S. Govt. (Auto) Ayurveda College and Institute, Bhopal, Madhya Pradesh, India.

³Professor, Dept. of Swasthavritta, Pt. K.L.S. Govt. (Auto) Ayurveda College and Institute, Bhopal, Madhya Pradesh, India.

⁴Post Graduate Scholar, Dept. of Swasthavritta, Pt. K.L.S. Govt. (Auto) Ayurveda College and Institute, Bhopal, Madhya Pradesh, India.

ABSTRACT

Dysmenorrhea or painful menstruation is a medical condition experienced by majority of adolescent girls with an estimate prevalence between 67%- 90%. Today's stressful modern lifestyle, lack of physical activity, food habits, frequent intervention of female genital tract affects the uterine environment which leads to higher incidence of Dysmenorrhea. It affects their academic performance, social activities and is a cause for school absenteeism. In Ayurveda, Dysmenorrhea is mentioned as symptom of many disorders like *Vatala Yonivyapada*, *Paripluta Yonivyapada*, *Mahayoni*, *Udavartini Yonivyapada* and *Vataja Artav Dushti*. *Yavani* (*Trachyspermum ammi*) is a well-known herb available in every Indian kitchen and traditionally it was used for curing numerous ailments. Ayurveda mentioned its properties as *Vatanuloman*, *Shothahara*, *Shoolaghna* etc. Yoga is a non-pharmacological treatment modality popularly useful in several diseases. Several researches also proved the positive effect of *Yavani* and Yoga on pain inflammation, oxidative stress etc. Thus, for present study *Yavani Churna* and Yoga therapy has selected and clinical trial was conducted on 40 patients of Primary Dysmenorrhea for two consecutive cycle (2 month). These patients were divided into 2 groups as group A (*Yavani Churna* and Yoga Therapy) and group B (*Yavani Churna*). After 2 consecutive cycles, results showed significant improvement in pain as well as other clinical parameters.

Key words: *Dysmenorrhea*, *Yavani Churna*, *Yoga Therapy*, *Udavartini Yonivyapada*.

INTRODUCTION

Dysmenorrhea or painful menstruation is a medical condition experienced by majority of adolescent girls with an estimate prevalence between 67%- 90%.^[1] Today's stressful modern lifestyle, lack of physical activity, food habits, frequent intervention of female

genital tract affects the uterine environment which leads to higher incidence of Dysmenorrhea. It can be of two type Primary and secondary. Primary Dysmenorrhea is menstrual pain without pelvic pathology. Primary Dysmenorrhea affects more than 50% of women and quite severe in about 15%.^[2] It effects their academic performance social activities and is a cause for school absenteeism.^[3] The main symptom of Primary Dysmenorrhea is pain concentrated in the lower abdomen associated with nausea, vomiting, diarrhoea or constipation, headache, giddiness etc. The exact mechanism of Primary Dysmenorrhea is still unknown but it can be explained mainly on two facts i.e., release of prostaglandins and uterine hypoxia.^[4]

In the classics of Ayurveda, Dysmenorrhea is mentioned as symptom in many disorders like *Vatala*, *Paripluta*, *Mahayoni*, *Udavartin Yonivyapada* and

Address for correspondence:

Dr. Kalpna Kuber

M.O., Govt. Autonomous Ayurved College and Hospital, Gwalior, Madhya Pradesh, India.

E-mail: kalpanadr2011@gmail.com

Submission Date: 18/09/2021

Accepted Date: 21/10/2021

Access this article online

Quick Response Code



Website: www.jaims.in

DOI: 10.21760/jaims.6.5.7

Vataja Artava Dushti. On the basis of symptoms mentioned by Acharya's it is more reasonable to co-related it with *Udavartini Yonivyapada*. Vitiation of *Vatadosha (Apana and Vyana Vata)* is the main cause behind Primary Dysmenorrhea, so the treatment should be direct to correct the *Vatadushti*. *Yavani (Trachyspermum ammi)* is a well-known herb available in every Indian kitchen and traditionally it was used for curing numerous ailments. Ayurveda mentioned its properties as *Vatanuloman, Shothahara, Shoolaghna* etc. Yoga is a non-pharmacological treatment modality popularly useful in several diseases. Several researches also proved the positive effect of *Yavani* and *Yoga* on pain inflammation, oxidative stress etc.^[5,6] By keeping these facts in mind, the present study was planned to see the effect of *Yavani Churna* and *Yoga* therapy in Primary Dysmenorrhea.

AIMS AND OBJECTIVES

1. To evaluate the combine efficacy of *Yavani Churna* and *Yoga* therapy in the Primary Dysmenorrhea
2. To evaluate the efficacy of *Yavani Churna* in the Primary Dysmenorrhea.

MATERIALS AND METHODS

Plan of study

The screening was be carried out for the identification of diagnosed Primary Dysmenorrhea patients among female students of Pt. Khushilal Sharma Govt. (Auto) Ayurveda College and Institute, Bhopal and these students were included in the study. Also, the Patients those fulfil the criteria and attend the OPD and IPD of Department of Swasthvritta, Kayachikitsa, Panchakarma, Stroog and Prasutitantra of Pt. Khushilal Sharma Govt. (Auto) Ayurveda College and Institute, Bhopal was selected. The study was randomized controlled clinical trial on 40 patients.

Criteria for Inclusion

- Patients coming with chief complaint of painful menses at least more than 3 cycles

- Unmarried girls with age group between 15-26 years.

Criteria for Exclusion

- Patients of secondary Dysmenorrhea, any Pelvic Pathology, Acute Infection, Endometriosis, Adenomyosis, Uterine fibroid, Endometrial polyp etc.
- Acyclic and excessive bleeding more than 5 days.
- Patients having serious systemic disease - Malignancy, Hypothyroidism, Diabetes, Hypertension etc.
- Any other surgical and neurological condition surgery resulting in Dysmenorrhea.

Study Design

This study was randomized controlled clinical trial and sample was selected by simple random sampling technique.

Sample Size: Total 40 patients (20 patients in each group)

Group A: *Yavani Churna* and *Yoga* therapy. Patients of this group were advised

- Oral administration of *Yavani Churna* in 2.5 gm at bed time with lukewarm water and during menstruation 2.5 gm bd with lukewarm water.
- *Tittalyasana*, *Shashankasana*, *Paschimottanasana*, *Sarvangasana*, *Matsysana* for 7 times daily and *Anuloma Viloma Pranayama* for 10 minutes daily early in the morning except days of menstruation.

Group B: *Yavani Churna*. Patients of this group were advised

- Oral administration of *Yavani Churna* in 2.5 gm at bed time with lukewarm water and during menstruation 2.5 gm bd with lukewarm water.
- Patients of both groups were advised to avoid junk food.

Duration of study: 2 consecutive cycle (2 months)

Statistical Analysis

The result has analysed by calculating Wilcoxon matched-pairs signed-ranks test, Mann-Witney U-statistic, paired and unpaired t test. Graph Pad InStat-3 software was used for statistical analysis.

Ethical Clearance

This study was started after the approval of Institutional ethical committee of Pt. Khushilal Sharma Government Autonomous Ayurvedic College and Hospital, Bhopal. Written informed consent before the starting of the trial with freedom to withdraw from the study at any time without giving any reason was be taken.

Subjective Assessment

Cardinal symptoms

- Severity of pain
- Pain duration

Associated symptoms

- Nausea (*Praseka*)
- Vomiting (*Chhardi*)
- Constipation (*Vibhandha*)
- Diarrhoea (*Atisara*)
- Fatigue (*Shrama*)
- Loss of Appetite (*Aruchi*)
- Headache (*Shirashula*)
- Pain in other region (*Vankshana, Kati and Janu Shula*)
- Giddiness

Scoring/Grading pattern

To assess the subjective features the clinical symptoms, of Dysmenorrhea which so ever presented by the patients were graded into four grades (0-3) scale on the basis of severity and duration before and after the completion of treatment plan.

Grading

0 - No complaint

1 - Presence of mild complaint

2 - Presence of moderate complaint

3 - Presence of severe complaint

Objective Assessment

- VAS Score (Visual Analogue scale)^[7] 0-10 Score, where 0 indicating “no pain” and 10 indicating the “worst possible pain”.
- ESR Level

OBSERVATION AND RESULTS

In this present study total 40 patients of Primary Dysmenorrhea were registered, out of which 37 patients completed the course of treatment and 3 patients discontinued before the completion of treatment course. In group A, 19 patients have completed the course of treatment out of 20 patients and In group B, 18 patients have completed the course of treatment out of 20 patients. (Table No.1)

- **Age Wise:** In this present study majority of the patients 57.5% were reported in the age group of 19-22 years followed by 37.5 % in the age group of 23-26 years and 5% in 15-18 age group. (Table No. 2)
- **Habitat wise:** Maximum no. of patients 92.5 % were belonging to urban habitat and least 7.5 % patients were belonging to rural area. (Table No. 3)
- **Family History:** In the present study 47.5% patients having family history of Primary Dysmenorrhea, while 52.5% patient were found no family history of Primary Dysmenorrhea (Table No. 4). Positive family history is an important risk factor for Primary Dysmenorrhea^[8] but we can't find significant correlation in the present study this may be because of small sample size.
- **Treatment history:** In present study maximum no of patients 77.5 % were taking analgesic / antispasmodic drug to relive the pain of Dysmenorrhea, and 17.5 % were no treatment history and 5 % patients were taking home remedies. (Table No. 5).

- **Body Mass Index (BMI):** In these study maximum patients 70% were normal body weight and 27.5% patients reported underweight. Whereas 2.5% patients were overweight. BMI. (Table No. 6).
- **Diet:** In the present study maximum number of patients 77.5% were belonging to vegetarian and 22.5% patients were belonging to mixed diet. (Table No. 7)
- **Junk food** intake and frequency: In the present study maximum number of patients 90% were taking junk food and 10 % patients were not taking junk food. (Table No. 8) Goel et .al (2013) in the study concluded that Dysmenorrhea was more frequently observed among those adolescents who were eating junk food and unhealthy diet.^[9] This study also revealed that consumption of junk food linked with Primary Dysmenorrhea.
- **Bowel habit:** 52.5% patients had regular Bowel habits, 35% patients were constipated and 12.5% patients reported irregular bowel habits (Table No. 9)
- **Physical activity:** In the present study maximum 77.5% patients were physically not active and 22.5 % patients were physically active. (Table No. 10) Physical inactivity is considered one of the important risk factors for Dysmenorrhea. Handayani.et.al (2014)^[10] revealed in a study that physically inactive subject was more likely to have Primary Dysmenorrhea than those with physically active subjects.
- **Prakriti:** In the present study maximum number of patients 40 % were belonging to *Vata- Kapha Prakriti*, 32.5% patients were belonging to *Vata-Pitta Prakriti* where as 27% patients were belonging to *Pitta-Kaphaj Prakriti*. (Table No. 11) Similar findings were reported by Patil Sukanya S (2010).
- **Age of menarche:** Maximum 85% patients were having menarche at the age between 13 to 15years and 15% were 10 to 12 years. (Table No.

12) This may be because of mean age of menarche in India is 13.76 years. (2005)

- **Severity of pain:** Maximum 50% patients having severe pain and 47.5% having moderate pain and only 2.5% patients having mild pain. (Table No. 13)

Effect of therapy on clinical profile

- **Effect of treatment on pain:** Regarding the effect of therapy on pain i.e., VAS (Intensity of pain), severity of pain and duration of pain significant reduction was found in Group A and Group B. On inter group comparison of group A and group B effect of treatment on VAS (Intensity of pain), Severity of pain and Duration of pain both the group showed statistically significant result. So, on the basis of Mean difference in VAS. (Intensity of pain), severity of pain and duration of pain we can say that group A is better than group B. (Table No. 14 and 15)
- **Effect of treatment on Associated Symptoms:** Regarding the effect of therapy on associated symptoms in group A significant reduction was found in all the associated symptoms except Vomiting, Diarrhoea and Headache and in group B significant reduction was found in Nausea, Diarrhoea, fatigue, Pain in other regions. On inter group comparison of group A and group B effect of treatment on Fatigue and Pain in other regions both the group showed statistically significant result. So, on the basis of mean difference of above symptoms in both the group we can say group A is better than Group B. In case of Nausea, Vomiting, Constipation, Diarrhoea, loss of appetite, Headache, Giddiness mean difference of group A group B showed statistically insignificant results which inferred that both the groups have almost equal effect on above-mentioned symptom. (Table No. 16)
- **Effect of treatment on ESR Level:** In both the group improvement in ESR was found statistically significant and by analysing mean difference we can say that Group A is better than Group B. (Table No. 17)

- Overall effect of therapy:** The overall effect, in Group A, 14 (73.6%) patients showed moderate improvement while 4 (21.6%) shows mild improvement, 1 (5.2%) patient showed unchanged result, whereas none (0%) of patients showed marked improvement and complete relief. In Group B, 3 (16.6%) patients showed moderate improvement while 12 (66.6%) shows mild improvement, 3 (16.6%) patients showed unchanged result, whereas none (0%) of patients showed marked improvement and complete relief. (Table No. 18)

Table 1: Distribution of Patients of Primary Dysmenorrhea

Status of treatment	Group A	Group B	Total
Registered	20	20	40
Discontinued	1	2	3
Completed	19	18	37

Demographic Data

Table 2: Age wise distribution of patients.

Age (in year)	No. of Patients.	Percentage (%)
15-18	2	5
19-22	23	57.5
23-26	15	37.5
Total	40	100

Table 3: Habitat wise distribution of patients.

Habitat	No. of Patients	Percentage (%)
Rural	3	7.5
Urban	37	9.5
Total	40	100

Table 4: Family History wise distribution of patients

Family History	No. of patients	Percentage (%)
Absent	21	52.5
Present	19	47.5
Total	40	100

Table 5: Treatment history wise distribution.

Treatment History	No. of patients	Percentage (%)
Analgesic/ antispasmodic	31	77.5
Home remedies	2	5
No treatment history	7	17.5
Total	40	100

Table 6: Body Mass Index (BMI) wise distribution of patients

Body Mass Index (BMI)	No. of Patients	Percentage (%)
<18 (underweight)	11	27.5
18.5-24.99 (Normal)	28	70
25-29.99 (overweight)	1	2.5
30-34.99 (Obese-1)	0	0
35-39.99 (Obese-2)	0	0
>40 Above	0	0
Total	40	100

Table 7: Ahara wise distribution of patients

Ahara	No. of patients	Percentage (%)
Vegetarian	31	77.5
Mixed (Veg+Nonveg)	9	22.5
Total	40	100

Table 8: Intake of junk food wise distribution.

Junk food	No. of patients	Percentage (%)
Absent	4	10
Present	36	90
Total	40	100

Table 9: Bowel wise distribution of patients.

Bowel wise	No. of patients	Percentage (%)
Constipation	14	35
Irregular	5	12.5

Regular	21	52.5
Total	40	100

Table 10: Physical activity wise distribution of patients.

Physical Activity	No. of patients	Percentage (%)
Present	9	22.5
Absent	31	77.5
Total	40	100

Table 11: Prakriti wise distribution of patients.

Deha Prakriti	No. of patients	Percentage (%)
Vatapitta	13	32.5
Pittakapha	11	27.5
Vatakapha	16	40
Total	40	100

Table 12: Age of menarche wise distribution of patients.

Age of menarche (years)	No. of patients	Percentage (%)
10-12 (year)	6	15
13-15 (year)	34	85
Total	40	100

Table 13: Severity of pain wise distribution.

Severity of pain	No. of patients	Percentage (%)
No pain	00	00
Mild	01	2.5
Moderate	19	47.5
Severe	20	50
Total	40	100

Table 14: Effect of therapy on VAS score (Intensity of Pain)

Group	Mean		MD	SD	SE	P value
	BT	AT				
A (n=19)	6.632	3.895	2.737	1.599	0.3659	P=<0.0001 ES
B (n=18)	7.556	5.000	2.556	1.199	0.2826	P=<0.0001 ES
Unpaired t test t=0.3884, p=0.7001, NS						

Table 15: Effect of treatment on pain

Pain	Group	Mean		MD	%	SD	SE	P value
		BT	AT					
Severity of pain	A (n=19)	2.474	1.158	1.316	53.19	0.4776	0.1096	W=190 N=19 P=<0.0001 ES*** *
	B (n=18)	2.556	1.611	0.944	36.94	0.7254	0.1710	W=105 N=14 P=0.001 ES***
Mann-Witney U Statistic = 113.00, P=0.0347, S								
Duration on pain	A (n=19)	2.368	0.9474	1.421	60.00	0.9016	0.208	W=120 N=15 P=<0.0001 ES*** *
	B (n=18)	2.333	1.611	0.722	30.9	0.7519	0.172	W=66 N=11 P=0.010 ES***
Mann-Witney U Statistic = 92.500, P = 0.0125, S								

Table 16: Effect of treatment on associated symptoms

Associated symptoms	Group	Mean		MD	% Relief	SD	SE	P value
		BT	AT					
Nausea (Praseka)	A (n=19)	0.7368	0.1053	0.6316	85.7	0.6840	0.1569	W=55 N=10 P=0.0020 VS**
	B (n=18)	0.778	0.1667	0.6111	78	0.9164	0.2160	W=28 N=7 P=0.0156 S*
Mann-Witney U Statistic = 156.50, P= 0.6359, NS								
Vomiting (Chhardi)	A (n=19)	0.7224	0.444	0.2778	62.5	0.4609	0.1086	W=15 N=5 P=0.625 NS
	B (n=18)	0.4211	0.1579	0.2632	38.4	0.4524	0.1038	W=15 N=5 P=0.0625 NS
Mann- Witney U Statistic= 168.50, P=0.9371, NS								
Constipation (Vibandha)	A (n=19)	1.000	0.3158	0.6842	68.4	0.6710	0.1539	W=66 N=11 P=0.0010 ES***
	B (n=18)	0.8333	0.556	0.2778	33.3	0.4609	0.1086	W=15 N=5 P=0.0625 NS
Mann- Witney U Statistic= 114.50, P= 0.0515, NS								

Diarrhoea (Atisara)	A (n=19)	0.3158	0.1053	0.2665	66.6	0.4189	0.0960	W=10 N=4 P=0.1250 NS
	B (n=18)	0.8889	0.4444	0.4444	49.9	0.6157	0.1451	W=28 N=7 P=0.0156 S*
Mann- Witney U Statistic= 138.50, P= 0.2220, NS								
Fatigue (Shrama)	A (n=19)	1.947	0.7368	1.211	62.1	0.7133	0.1636	W=136 N=16 P=<0.0001 ES***
	B (n=18)	1.889	1.278	0.6111	32.9	0.7755	0.1833	W=45 N=9 P=0.039 VS**
Mann- Witney U Statistic= 92.50, P= 0.0107, S								
Loss of appetite (Aruchi)	A (n=19)	0.9474	0.3684	0.5789	61.1	0.5073	0.5073	W=66 N=11 P=0.010 ES***
	B (n=18)	1.111	0.500	0.611	55.1	0.6978	0.1645	W=45 N=9 P=0.039 VS**
Mann- Witney U Statistic= 165.50, P= 0.8641, NS								
Headache (Shirshola)	A (n=19)	0.4737	0.2105	0.2632	55.6	0.4524	0.1038	W=15 N=5 P=0.625 NS

	B (n=18)	0.3 889	0.16 67	0.2 22 2	57. 13	0.4 278	0.1 008	W=10 N=4 P=0.1 250 NS
Mann- Witney U Statistic= 164, P= 0.7905, NS								
Pain in other regions (Vakshana, Kati, Janu Shula)	A (n=19)	1.5 26	0.57 89	0.9 47 4	62. 08	0.8 481	0.1 946	W=78 N=12 P=0.0005 ES***
	B (n=18)	1.6 67	1.33 3	0.3 33 3	38. 46	0.4 851	0.1 143	W=21 N=6 P=0.0313 S*
Mann- Witney U Statistic= 102.00, P=0.0221, S								
Giddiness (Chakkar)	A (n=19)	0.6 316	0.31 58	0.3 15 8	50	0.4 776	0.1 096	W=21 N=6 P=0.0313 S*
	B (n=18)	0.5 556	0.33 33	0.2 22 2	39. 39	0.4 278	0.1 008	W=10 N=4 P=0.1250 NS
Mann- Witney U Statistic= 155.00, P= 0.5405, NS								
NOTE: p <0.0001 ES ****, p = 0.0001 to 0.001 ES ***, p = 0.001 to 0.01 VS **, P= 0.01 to 0.05 S*, p > 0.05 NS								

Table 17: Effect of treatment on ESR Level

Group	Mean		MD	SD	SE	P value
	BT	AT				
A(n=19)	19.368	15.053	4.316	7.142	1.638	P=0.0084 VS
B(n=18)	19.944	16.944	3.000	6.971	1.643	P=0.0427 S
Unpaired t test t = 26.088, P =<0.0001, ES						

Table 18: Overall effect of therapy

Effects	Group A		Group B	
	No. of patients	%	No. of patients	%
Complete relief (100%)	0	0	0	0
Marked Improvement (75% to < 100%)	0	0	0	0
Moderate Improvement (50% to < 75%)	14	73.6	3	16.6
Mild Improvement (25% to < 50%)	4	21.6	12	66.6
Unchanged (0 to < 25%)	1	5.2	3	16.6
Total	19	100	18	100

DISCUSSION

Primary Dysmenorrhea (PD) is defined as cramping pain in the lower abdomen that occurs at the onset of menstruation in the absence of any identifiable pelvic disease. The exact causes of Primary Dysmenorrhea are still unknown. Some potential risk factors of Dysmenorrhea are early menarche, family history, increased exposure to environment, BMI less than 20, young age^[11] Several theories are put forward as etiopathological cause but well-known mechanism for Primary Dysmenorrhea is the elevated release of prostaglandins in uterine tissue. These metabolites increase vasoconstriction and myometrial contraction causing uterine ischemia and pain.

In classical text of Ayurveda Dysmenorrhea (painful menstruation) is quoted as a symptom rather than disease. It is a symptom, found in many disorders like *Vatala, Paripluta, Mahayoni, Udavartini Yonivyapad* and *Vataj Artava Dushti*. On the basis of symptoms mentioned in classics it is more reasonable to correlate Primary Dysmenorrhea with *Udavartini Yonivyapad*. Pain is the main symptom of Primary Dysmenorrhea which denote that *Vata* is the main aggravated *Dosha* in Primary Dysmenorrhea. *Vatadosha* mainly *Apana*

and *Vyanavata* is the main cause behind Primary Dysmenorrhea. So, for the treatment of Primary Dysmenorrhea general management of *Vatadushti* can be used depending upon the requirement.

Possible justification for effect of therapy

In Primary Dysmenorrhea pain is because of an abnormal increase in prostaglandins which causes myometrial hyperactivity and tissue ischemia.^[12] Regular yoga practice relaxes muscles improves blood circulation and *Nadisodhana Pranayam* helps in releasing B-endorphin which help in reduction of stress and reduces feeling of pain.^[13,14] Spasm caused by vitiated *Apana Vayu* causes obstruction in the flow of menstrual blood is the general underlying pathology of Primary Dysmenorrhea. *Yavani Churna* due to *Katu Rasa* and *Ushna Veerya* pacify the aggravated *Vata*, and due to *Vatanulomana* property corrects the direction of *Vata* which enhance free flow of *Rajas* (menstrual flow). Thus, ultimately relieves the tension of pelvic region and pain. *Yavani* (*Trachyspermum ammi*) contains alkaloids, flavonoids, steroids and polyphenols which are responsible for the antinociceptive action via opioid mechanism.^[15]

Yavani had *Deepan, Pachan* properties so, it increases appetite, digestion and regular Yoga practice improves the *Agni*, tones the internal organs Thus, reduces Nausea, and Loss of Appetite.

Constipation is mainly because of *Urdwa Gamana* of *Apana Vayu*. Yoga strengthens abdominal and pelvic muscles, increase intra-abdominal pressure, and stimulate peristalsis movement.

Fatigue and Giddiness is mainly due to the severe pain and due to inadequate diet intake. As Yoga and *Yavani* relieves the pain and improves digestion power which ultimately subside the Fatigue and Giddiness.

Pain in other regions is because of *Vimarg Gamana* and *Sanga* of *Vata*. As *Yavani* due to its *Ushna Veerya Vatanuloman, Shoolahar* property removes the obstruction of *Vata* and corrects the direction of *Vata*. And *Yogasana* increases the blood circulation in those regions improves spinal flexibility, strengthens the

muscles in the back.^[16] So, subsides the pain in other regions.

In Primary Dysmenorrhea, Diarrhoea is because of increased peristaltic movement *Trachyspermum ammi* contained flavonoids which have ability to inhibit motility and hydro electrolytic secretions thus, cures the Diarrhoea.^[17]

In Headache and Vomiting there is insignificant result was found in the present study this may be because of small sample size and a smaller number of patients who had present Headache and Vomiting associated symptoms.

Yavani Churna has *Shothahara* property and contains flavonoids and glycosides which inhibit the prostaglandin synthesis^[18] thus improves the ESR level. Several researches proved that raised ESR is because of imbalance in the metabolism. Regular Yoga practise improves the digestion as well as metabolism and that may the reason behind the significant improvement in ESR.^[19]

Probable mode of action of therapy

Yoga Therapy

Several researches have reported effectiveness of the practice of Yoga on Primary Dysmenorrhea, Yoga intervention improves blood flow at the pelvic level as well as stimulating the release of B endorphin which acts as nonspecific analgesics ^[20] The mechanism behind Yoga effectiveness in the treatment of Dysmenorrhea is still unclear. It probably works at more than one level viz-

Hypoxia is the main cause of pain during menstruation Regular Yoga practice improves the blood supply to reproductive organs and strengthens the muscles of uterus and spinal region, which relax the muscular and nervous tension and relieves the pain during menstruation.^[21]

Deep breathing provides extra oxygen to the blood and releases endorphins, which help in reduction of stress and acts as nonspecific analgesics.^[22]

Another possible mechanism for improvement in pain may be due to decrease levels of proinflammatory

cytokines (TNF α , IL1 α , IL10) and increase levels of anti-inflammatory cytokines (IL10).^[23]

Practice of Yoga helps in establishing a balance between the endocrine and reproductive system, thus regulating the hormonal control of the menstrual mechanism.^[24]

Yogasana and *Pranayama* promotes the physical relaxation by decreasing the activity of sympathetic nervous system and increased parasympathetic function.^[25] *Yoga* intervention actually increases the tolerance of person by increasing the inherent level of calmness thus augment the feeling of wellbeing.^[26]

Yavani Churna

According to Ayurvedic classics Primary Dysmenorrhea and other diseases related with female reproductive system are mainly due to vitiation of *Apana Vata* (Pelvic physiology regulator), *Apana Vata Margvarodha* (disturbed pelvic physiology), and *Artavadushti* (menstrual dysfunction) and *Dhatukshaya* (tissue loss).

Acharyas has described mainly *Shoolprashamana* and *Vatanuloman* action of *Yavani* on the basis of its pharmacological properties.^[27,28]

Katu, *Tikta Rasa* present in *Yavani* improves *Jatharagni* and correct digestion and metabolism.

It pacifies the *Vatadosha* mainly because of *Ushna Veerya* property. *Laghu Ruksha Guna* and *Ushna Veerya* pacify the slight *Kapha* vitiation.

Due to *Katu Rasa* and *Katu Vipaka*, *Ushna Virya* and *Tikshna, Ruksha Guna* it acts as a *Garbhashayottejaka*.

Yavani has *Vatanuloman* property which corrects the direction of *Vata* and normalizes the function of *Apana Vata* which regulates the flow of menstruation and subside the symptoms of Primary Dysmenorrhea. *Yavani* contains high amount of phenolic compound (mainly thymol) and have certain non-thymol factors as paracyment, γ -terpinene, α - β pinenes, dipentene, α -terpine and carvacrol.^[29] Various study proved its Antispasmodic, Antihypertensive, Hypolipidemic, Digestive stimulant, Hepatoprotective, Broncho

dilating, Diuretic, Antiplatelet Aggregatory, Antitussive etc.^[30,31]

CONCLUSION

The main etiological factors for Primary Dysmenorrhea are improper lifestyle, irregular eating habits, intake of junk food and lack of physical activity. Both the group showed significant improvement in Pain (Intensity, Duration and Severity). In Group A significant improvement was found in Nausea, Constipation, Fatigue, Loss of appetite, Pain in other regions, Giddiness and *Artava Pramana* but improvement was insignificant in Vomiting, Headache, Diarrhoea and Duration of menses. In Group B significant improvement was found in Nausea, Diarrhoea, Fatigue, Loss of appetite, Pain in other regions, but improvement was insignificant in Giddiness, Vomiting, constipation, Headache, *Artava Praman* and *Artava Srava Avadhi* (Duration of menses). Combined therapy (Yoga therapy and *Yavani Churna*) provided better relief in all symptoms as compare to *Yavani Churna* alone. It is observed that these selected interventions don't have any side effect thus Yoga therapy and *Yavani Churna* can be used safely for pain relief in Primary Dysmenorrhea.

REFERENCES

1. Patel V, Tanksale, Sahasrabhojane M, et al. The burden and determinants of dysmenorrhea: a population –based survey of 2226 women in Goa, India. *BJOG*.2006;6:113(4):453-463.
2. Hong ju, Mark J, et al. The prevalence and risk Factors of Dysmenorrhea. *Epidemiol Rev*. 2014;36:104-113.
3. Lee LK, Chen PCY, Lee KK, Kaur J. Menstruation among adolescent girls in Malaysia: a cross-sectional school survey. *SingaporeMed J* 2006; 47(10): 874.
4. DC Dutta, Text book of Gynaecology Including contraceptive ed. 7th, Edited by HiralalKonar, Jaypee Brother Publishers (p)Ltd. New Delhi, 2016. Chapter 14th, P.146.
5. Asif HM, Sultana S, Akhtar N. A panoramic view on phytochemical, nutritional, ethnobotanical uses and pharmacological values of *Trachycpermumamm* Linn. *Asian Pac J Trop Biomed* 2014;4:S545-53[Last cited 3 February 2020]
6. Smith C et al A randomized comparative trail of yoga and relaxation to reduce stress and anxiety complement *Ther Mssed*.2007[last cited 2 February 2018]

7. D. Gould et al. Visual Analogue Scale (VAS). Journal of Clinical Nursing 2001; 10:697-706
8. Zhao Hu, Lu Tnag, et al. Prevalence and Risk Factors Associated with Primary Dysmenorrhea among Chinese Female University Students : A Cross-sectional Stud.
9. Goel S, Kaur T, Gupta M. Increasing Proclivity for Junk Food among Overweight Adolescent Girls in District Kurukshetra, India. Age (in years) 16:17
10. Handayani, E. Y., Rahayu, L. S. (2014). Faktor- Factors that associated with menstrual pain (dysmenorrhoea) in young women in several high schools in Rokan Hulu Regency. Jurnal Maternity and Neonatal, 1(4), 161–171.
11. Ju H, Jones M, Mishra G. The prevalence and risk factors of dysmenorrhea. Epidemiol Rev. 2013;36:104–13
12. Ekta, Sharma k Kamlesh, et al. Role of Yoga in Primary Dysmenorrhea. JPSI3 (5), Sep – Oct 2014. www.Jpsionline.com.
13. Rakhshae Z (2011) Effect of three yoga poses (cobra, cat and fish poses) in women with primary dysmenorrhea: a randomized clinical trial. J Pediatr Adolesc Gynecol 24: 192-196.
14. Proctor ML, Farquhar CM (2006) Diagnosis and management of dysmenorrhoea. BMJ 332: 1134-1138.
15. Shahbaa M, Al-Khazraji, The pain decreasing effect of the alcoholic extract of Trachyspermum ammi (L.) (Ajwain) in experimental animals. IOSR Journal of Pharmacy 2(Jan 2017), PP.23-29. [Last cited 3 February 2020].
16. Nayak NN, Shankar K (2004) Yoga: A therapeutic approach. Phys Med Rehabil Clin N Am 15: 783-798
17. Hejazian SH, Bagheri SM, Safari F: Spasmolytic and Anti-Spasmodic Action of Trachyspermum ammi Essence on Rat's Ileum Contraction, N Am J Med Sci 2014 Dec:6(12):643-647.[Last cited 7 February 2020]
18. Tahngam C Dhanajayan R anti-inflammatory potential of the seeds of carumcopticum Linn. Indian pharmacol 2003:35:388-91.
19. Kumar K. Pandya P, et al. A Study on the impact on ESR level through Relaxation technique Yoga Nidra, Indian Journal of traditional Knowledge. Vol.1 (2), April (2012) pp.358-361
20. Proctor ML, Farquhar CM (2006) Diagnosis and management of dysmenorrhoea. BMJ 332: 1134-1138.
21. Hyun-Nam ko. Sam-Sun Le, et al. Effects of Yoga on Dysmenorrhea: A Systematic Review of Randomized Controlled Trials. Altern Integr Med 2016, 5: 4: 2327-5162.
22. Telles S, Gaur V, Balkrishna A. Effect of a yoga practice session and a yoga theory session on state anxiety. Percept Mot Skill. 2009;109:924–3
23. Barcikowaska Z. Rajkowaska-Labon E, et al. Inflammatory Markers in Dysmenorrhea and Therapeutic options. Int. J. Environ. Res. Public Health 2020, 17, 1191. www.mdpi.com/Journal/ijerph
24. Iyengar Geeta S. YOGA - A Gem for Women. Ch.7 Page no. 52. Allied Publishers PVT. Limited. Delhi. Reprint .2018
25. Nayak NN, Shankar K (2004) Yoga: A therapeutic approach. Phys Med Rehabil Clin N Am 15: 783-798
26. Usha Nag, et al. Effect of yoga on Primary Dysmenorrhea and stress in Medical students (IOSR-JDMS) Jan.- Feb. 2013[Last cited April 2018] Available from: www.iosrjournals.org
27. Mishra B, editor. Bhavaprakasa Nighantu of Bhavamisra, HaritakyadiVarg.10thed. ver.75,76. Vol. 1. Varanasi; Chaukhambha Sanskrit Sansthan ;1999;p25.
28. Tripathi I, editor. Raj Nighantu of Pandit Narhari, Pippalyadi Varg. 3rd ed. Ver.40. Varanasi; Chowkhamba Krishndas Academy; 2003.P.142.
29. Bairwa R. Singhal M, et al. Medici AI Uses of Trachyspermum Ammi: A Review. Pharmacology online 2: 477-485 (2011).
30. Mohammad M. Mahmoodreza M, et al. An Overview on Ajwain (Trachyspermum ammi) Pharmacological Effects; Modern and Traditional. Journal of Natural Remedies | ISSN:2320-3358. www.Jnronline.com.
31. Jeet K. Devi N, et al. Trachyspermum Ammi (Ajwain): A Comprehensive Review. IRJP 2012, 3 (5) 2230-8407. www.irjponline.com.

How to cite this article: Kalpna Kuber, Trupti Jain, Charu Bansal, Reshma Shekh. Study to evaluate the efficacy of Yavani Churna and Yoga Therapy in Primary Dysmenorrhea - A Clinical Study. J Ayurveda Integr Med Sci 2021;5:44-54.
<http://dx.doi.org/10.21760/jaims.6.5.7>

Source of Support: Nil, **Conflict of Interest:** None declared.

Copyright © 2021 The Author(s); Published by Maharshi Charaka Ayurveda Organization, Vijayapur (Regd). This is an open-access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by-nc-sa/4.0>), which permits unrestricted use, distribution, and perform the work and make derivative works based on it only for non-commercial purposes, provided the original work is properly cited.