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RESEARCH ARTICLE

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### **MAHANARAYANA TAILA MATRA BASTI IN ARTAVAKSHAYA (OLIGO-HYPOMENORRHOEA): AN OPEN INTERVENTIONAL PILOT STUDY ON AYURVEDIC PRINCIPLE**

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#### **ABSTRACT**

**Background:** Menstrual disorders are raising in gynecological practice which precursor infertility and other problems, so it requires more attention. Among all the menstrual disorders, *artavakshaya* can be compared to oligo-hypomenorrhoea characterized by *yathocitakaala adarshana*, *alpata*, and *yonivedana* as the *lakshana*. Ayurveda emphasizes both *shodhana* and *shamana* therapy. *Shodhana* and *shamana* therapy with *agnivardhaka* and *vatakaphasamaka dravya* are the treatment prescribed for *artavakshaya*. Therefore, in the present clinical study *matra basti* with *Mahanarayana taila* is used and clinically evaluated for its efficacy. **Materials and Methods:** Literature related to *matra basti*, *Mahanarayana taila*, *artavakshaya* in Ayurvedic texts, published research papers indexed in Pubmed, Google Scholar, and Research Gate have been reviewed for the study. A total of 20 patients of the reproductive age group fulfilling the inclusion criteria were selected for the present study. The research participants were selected from OPD and IPD and treated with *matra basti* by *Mahanarayana taila* following all aseptic measures for 08 consecutive days after the clearance of menses for 03 consecutive cycles and then 2 follow-ups at 30<sup>th</sup> day and 60<sup>th</sup> day. Assessments were done in terms of the amount of bleeding, duration of bleeding and association of pain during menstruation at a different time frame. Data were analyzed using statistical methods. **Result and Conclusion:** The study showed that the trial drug has a significant result in reducing the severity of *lakshana* of *artavakshaya* without having any toxicity or adverse effects on the research participants.

**Keywords:** *artavakshaya*, oligo-hypomenorrhoea, oligomenorrhoea, hypomenorrhoea, *matrabasti*, *Mahanarayana taila*.

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## INTRODUCTION

Menstruation may be defined as a periodic physiological discharge of blood, mucus, and other cellular debris. It is the visible manifestation of cyclic physiologic uterine bleeding due to shedding of the endometrium following invisible interplay of hormones mainly through hypothalamo-pituitary-ovarian axis.<sup>[1]</sup> This monthly uterine bleeding through the vagina happens once every 28 days during the reproductive life of a woman from menarche to menopause. *Artava* or *raja* are the terms given in Ayurvedic classics for the menstrual discharge. The normal menstruation is that which has *maasaannishchita* (intermenstrual period of one month), *pancharaatranubandhi* (duration of blood loss as five days), *na dahaarti* (not associated with pain or burning sensation), *naatibahu* (not excessive in amount), *naatyalpam* (not very scanty in amount), *padmalaktaka sannibham* (the colour resembles red lotus flower), *gunjaphalasavarnam* (colour resembles the fruit of jequirity) or *indragopakasankaasham* (shines as glow worm).<sup>[2]</sup> Acharya Sushruta described a condition called *artavakshaya* in the context of *upadhatu kshaya*. The clinical features of the *artavakshaya* mentioned in the classics are *yathocitakaala adarshana*

(prolonged intermenstrual period), *alpata* (scanty bleeding) and *yoni vedana* (pain in the vagina or pain during menses) and should be treated with *shodhana* and *agneya dravya*.<sup>[3]</sup> Ashtanga Hridaya mentioned the *ksheenartava* which is caused by *vata* (bodily humor) and *pitta* (bodily humor), as a type of *ashtaartavadushti*.<sup>[4]</sup> *Artavakshaya* is not separately described as a disease anywhere in classics that do not desecrate *artavakshaya* because as per Acharya Charaka symptoms of disease themselves also constitute a disease but sometimes because of their subordinate nature they are only symptoms and not disease.<sup>[5]</sup> Signs and symptoms of *artavakshaya* can be compared with oligo-hypomenorrhoea. Menstrual bleeding occurring more than 35 days apart and which remains constant at that frequency is called oligomenorrhoea.<sup>[6]</sup> When the menstrual bleeding is unduly scanty and last for less than 2 days, it is called hypomenorrhoea. Both are kinds of abnormal uterine bleeding which are to be diagnosed and managed at the earliest because they are the result of different endocrine and metabolic dysfunctions in the body.<sup>[7]</sup> Acharya Sushruta mentioned *shodhana* and *agnivardhaka* therapy as the treatment protocol for *Artavakshaya*.<sup>[8]</sup> In another context Acharya also depicted that

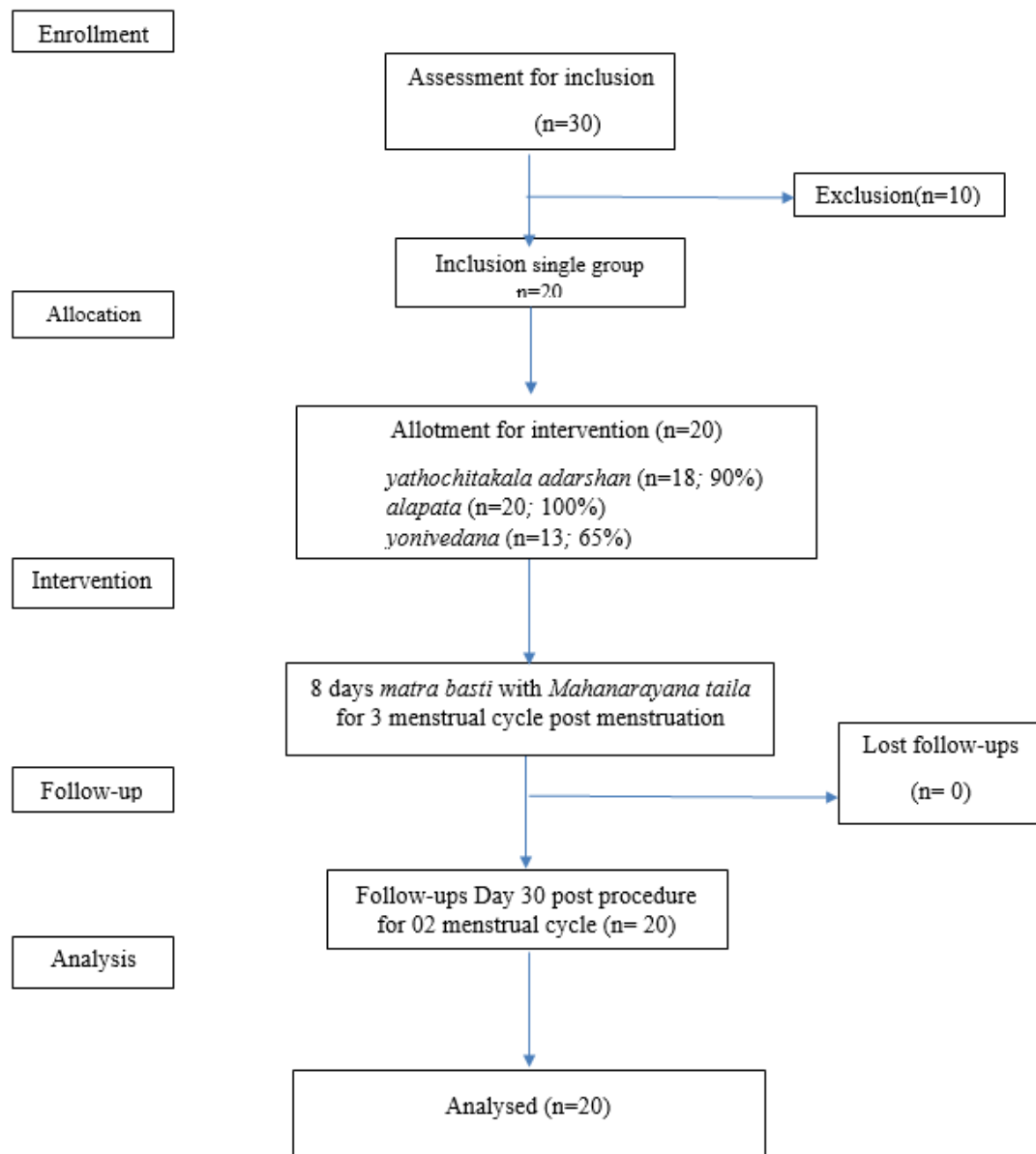
*Artavakshaya* should be treated with *Vatakaphasamaka* drugs as in *Nashtartava* (secondary amenorrhea).<sup>[9]</sup>

## MATERIALS AND METHODS

### Research Design

A research study is a single group pretest-posttest quasi-experimental clinical trial with a sample size of 20. The CONSORT Flow diagram of the study is provided in Chart 1.

**Chart 1: The CONSORT Flow diagram of the study**



Ayurvedic literature, research papers, scientific journals and authentic web sources related to this concept have been referred for the study.

### Research Participants

A total of 20 patients of the reproductive age group fulfilling the inclusion criteria were

selected for the present study. The research participants were selected from OPD and IPD.

#### **Inclusion criteria**

- Patients of age 16- 40yrs.
- Both married and unmarried patients with any one or more *lakshana* of *artavakshaya* (oligo-hypomenorrhoea).

#### **Exclusion criteria**

- Pregnant women and lactating mothers
- Women taking OCP or having IUCD inserted in the uterus.
- Women with chronic ailments, piles, fistula, fissures, or having any history of psychological disorders
- Women suffering from *svasa* (asthma), *kasa* (cough), *hikka* (hiccough), *alasaka* (meteorism), *vishuchika* (gastroenteritis), *madhumeha* (diabetes), *kushta* (skin disease), *shleepada* (filariasis) and *galaganda* (goitre)

#### **Diagnostic criteria**

The recruited participants in the research study were clinically examined and detailed

history was taken. The data were recorded systematically. Recruitments were done on *lakshana* as follows.

#### *Lakshana of artavakshaya:*

- Yathocitakaala* *adarshana* (oligomenorrhoea)
- Alpata* (hypomenorrhoea)
- Yonivedana* (dysmenorrhoea)

#### **Investigations**

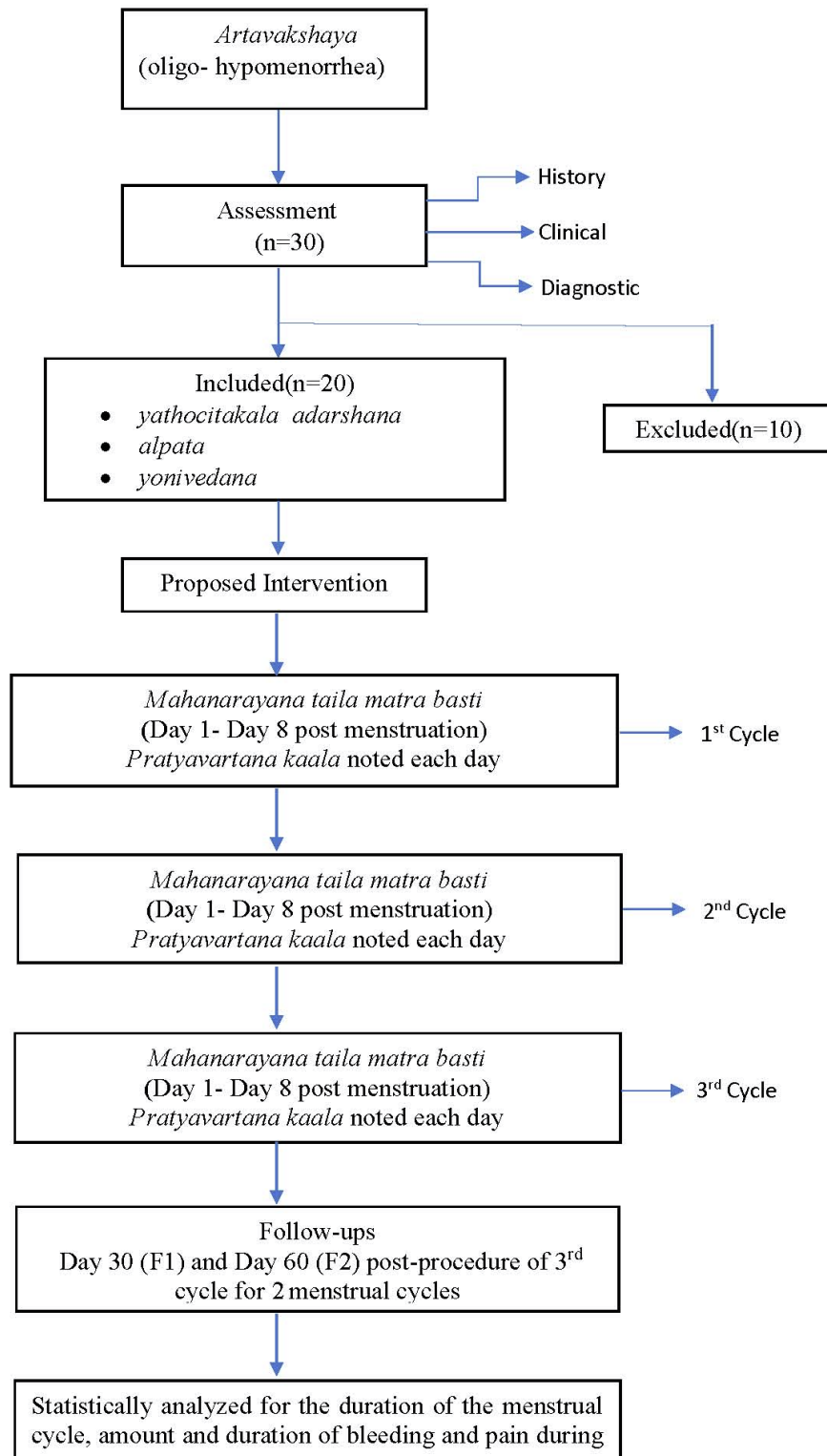
- Haematological:- CBC and ESR
- Thyroid Profile
- Routine urine analysis
- USG pelvis (if required)
- LFT and RFT
- HIV, VDRL, HBsAg

#### **Treatment Protocol**

The Flowchart of the treatment protocol is given in chart 2

#### **Chart 2: Treatment protocol**

Proper written consent was taken from each participant after orienting the nature and course of the study. During the study, the patients were asked to adhere to the treatment protocol and report any adverse event to the investigators.



## Assessment Criteria

Primary outcomes- Parameters like duration of bleeding, amount of bleeding, and association of pain during menstruation at different time frames were assessed using a grading system. Grading of the signs and symptoms of *artavakshaya* are given below

### A. Duration of bleeding during menses

- 0 = 4 – 5 days of bleeding
- 1 = 3 – 4 days of bleeding
- 2 = 2 – 3 days of bleeding
- 3 = 1 day of bleeding or spotting

### B. Amount of menstrual blood

- 0 = 4 pads/ day
- 1 = 3 pads/ day
- 2 = 2 pads/ day
- 3 = 1 pad/ day or spotting

### C. Interval between two cycles

- 0 = 27 – 32 days
- 1 = 33 – 38 days
- 2 = 39 – 44 days
- 3 = 45 days

### D. Pain during menses

- 0 = No pain
- 1 = Mild pain
- 2 = Moderate pain
- 3 = Severe pain

### Criteria for overall assessment

Unchanged = 0 – 24% of improvement in signs and symptoms

Mild improvement = 25 – 49% of improvement in signs and symptoms

Marked improvement = 50 – 74% of improvement in signs and symptoms

Good improvement = 75 – 100% of improvement in signs and symptoms

## Basti preparation

### Poorva karma (Pre-procedure activity)

#### Preparation of patient

Patients were advised to be *naatikshudhaarta* (consume little quantity of light diet) before every procedure of *matra basti* and then local *abhyanga* (oil massage) with lukewarm *Mahanarayana taila* was applied on the lower abdomen, thighs, flanks and buttocks region for 10 -15 minutes and then *Swedan* (sudation) was done on the same region with hot water bag for another 10-15 minutes.

#### Preparation of drug

Under sterile conditions, 72mL of lukewarm *Mahanarayana taila* was filled in a sterile enema syringe. A sterile rubber catheter oleate (apply oil) with the same *taila* was attached to the enema syringe and the air was removed from the rubber catheter.

### Pradhana karma (Procedure activity)

The patient was advised to lie on her left side extending her left leg and folding the right knee and also keeping her left hand under the head. Then the lubricated nozzle of the rubber catheter should be introduced into the

lubricated anus up to the length of 4 inches and the enema syringe should be pressed without moving the hand and keeping some residue of *basti dravya* (a drug used for enema) in the enema syringe so that the content is let out into the *guda maarga* (rectum) without any air bubble. Then the nozzle is removed gently. The *basti* was given for 8 consecutive days after the clearance of menses.

## OBSERVATION AND RESULTS

### Participant characteristics:

**Table 1: The incidence of demographic factors**

Factors	Classification	No. of patients	Percentage (%)
Age	16-20	1	5
	21-25	3	15
	26-30	9	45
	31-35	5	25
	36- 40	2	10
Diet	Vegetarian	17	85
	Mixed	3	15
<i>Koshta</i>	<i>Mrudu</i>	4	20
	<i>Madhyama</i>	7	35
	<i>Krura</i>	9	45
<i>Prakriti</i>	<i>VK</i>	9	45
	<i>VP</i>	7	35
	<i>PK</i>	4	20
<i>Agni</i>	<i>Manda</i>	11	55
	<i>Sama</i>	1	5
	<i>Vishama</i>	8	40
	<i>Teekshna</i>	0	0

**Table 2: Effect of the therapy**

### ***Pashcat karma* (Post-procedure activity)**

After administration of *basti*, the buttocks and thighs were tapped gently 3-4 times and the patient was asked to lie down in a supine position gradually with hands and legs freely spread over the table. The patient was instructed to void the urge of stool whenever she felt so. *Basti pratyagamana kaala* (evacuation time of enema) was noted after every *basti*.

Parameters	Grade	No. and (%) of cases		Within the group comparison BT v/s AT Wilcoxon Signed Rank test
		BT	AT	
YKA*	0	2 (10.0)	8 (40.0)	Z = 3.368 P = 0.001 HS
	1	5 (25.0)	7 (35.0)	
	2	9 (45.0)	4 (20.0)	
	3	4 (20.0)	1 (5.0)	
	Total	20 (100.0)	20 (100.0)	
Alpata1**	0	0 (0.1)	1(5.0)	Z=3.626 P=0.000 HS
	1	0 (0.0)	12(60.0)	
	2	16 (80.0)	7(35.0)	
	3	4(20.0)	0(0.0)	
	Total	20(100.0)	20(100.0)	
Alpata2***	0	0 (0.0)	7 (35.0)	Z = 3.375 P = 0.000 HS
	1	8 (40.0)	9 (45.0)	
	2	8 (40.0)	4 (20.0)	
	3	4 (20.0)	0 (0.0)	
	Total	20 (100.0)	20 (100.0)	
YV****	0	7 (35.0)	9 (45.0)	Z = 2.310 P = 0.021 S
	1	6 (30.0)	8 (40.0)	
	2	4 (20.0)	3 (15.0)	
	3	3 (15.0)	0 (0.0)	
	Total	20(100.0)	20(100.0)	

YKA\*- *yathocitakaala adarshana*, Alpata1\*\**- alpata* of amount, Alpata2\*\*\**- alpata* of duration, YV\*\*\*\**- yonivedana*, S- significant, HS- highly significant

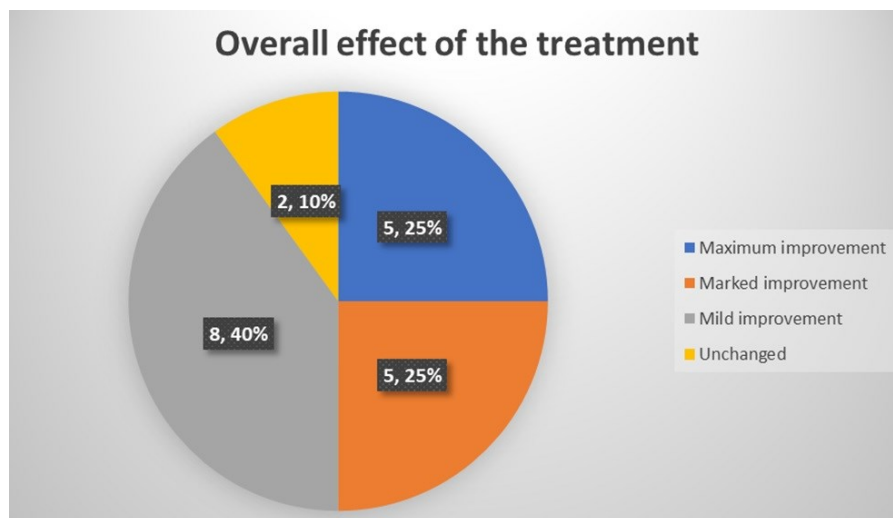


Figure 1: Overall effect of the treatment



## DISCUSSION

*Artavakshaya* is one of the most common disorders seen in day-to-day clinical practice. *Artava vyapat* became more common in this era of modernization due to faulty food habits, lifestyle, stress, etc. *Artavakshaya* has been described by Acharya Sushruta in the context of *upadhatu kshaya*. Acharya Sushruta also mentioned that its treatment should include *shodhana* therapy and *agnivardhaka dravya*. Therefore, *matrabasti* with *Mahanarayana taila* mentioned in the Bhaishajya Ratnavali which is having *vatakapasamaka* and *agnivardhaka* drugs is chosen for the study.

*Apana vayu* plays a major role in the physiology and pathology of the reproductive tract and *Basti* is considered to be the best treatment for *vataja* disorders as well as in *vata* predominant conditions.<sup>[10]</sup> Acharya Kashyapa mentioned *anuvasana basti* (cleansing enema with medicated oil) as the treatment for *alpa pushpa* (scanty menses).<sup>[11]</sup> Acharya Vagbhata included *rajonasha* (absence of menses) in the indication of *anuvasana basti*.<sup>[12]</sup> Therefore *matrabasti* can be a treatment of choice in *artavakshaya*.

### Discussion on the observation of demographic profile

In the present study, it was observed that the maximum number of patients were under the age of 26-30 years (Table 1) and are married

women which may be due to psychological stress and over consciousness in that period of life. The maximum number of patients registered were followed a vegetarian diet (Table 1) which may lead to protein deficiency and thereby poor health status. It was also observed that the maximum number of patients were of *krura koshta* (hard bowel) (Table 1), *vata kapha prakriti* (bodily constitution) (Table 1) and *mandaagni* (weak digestive fire) (Table 1). All these points to the involvement of *vata* and *kapha dosha* as well as *agnimandya* in the pathogenesis of *artavakshaya*.

### Probable mode of action of the trial drug

*Basti* is considered as best treatment for *Vataja* and *Vatakapaja* disorders in Ayurveda. *Basti dravya* enhances the normal functioning of *Apana vayu* and thereby leads to normal *raja pravritti*. According to modern appraise, any drug given via rectal route stimulates the ENS and generates the sensory signals for CNS. Thus, *Basti* regulates the Hypothalamo-Pituitary-Ovarian axis and then normalise the menstrual cycle.

*Mahanarayana taila* with its *katu* (pungent), *tikta* (bitter) *rasa* (taste), *laghu* (light), *ruksha* (ununctuous) *guna* (properties), *ushna* (hot) *virya* (potency) and *katu* (pungent) *vipaka* (post- digestion effect) and *vata kaphasamaka doshaghata* ultimately lead to *karma* (action)

such as *deepana* (appetiser), *pachana* (digestive) & *srotoshodhana* (cleansing bodily channels) resulting *amapachana* (digestion) and *vatakapasamana* which may remove *avarana* or *sanga* in *artavavahashrotas*, leading to the proper function of *vata* and thereby proper functioning of *artava*. It is indicated in *Vatika* disorders and also given in the verse that the use of this *taila* can bless even a sterile woman with a child.<sup>[13]</sup> *Matrabasti* given with *Mahanarayana taila* helps in *agnideepana*, *amapachana* and *vata kapha shamana* which leads to removal of blockage from channels thus maintaining proper functioning of *vayu* resulting in proper regulation of menstrual cycle.

#### Discussion on the clinical results

The result was calculated by statistical analysis by using the Wilcoxon Signed-Rank test. Wilcoxon Signed-Rank test: Nonparametric test for the case of two related samples or repeated measurement on a single set. It was used for the assessment of improvement in subjective nonparametric symptoms of the trial group.

In respect of *yathocitakaala adarshana*, it was observed that 18 patients had *yathocitakaala adarshana* of *artava*. The drug is found highly significant after 5 follow-ups with *P* 0.001. Hence the effect of the drug is highly significant. In respect of *alpata* in the amount

of *artava*, it was observed that all the 20 patients had *alpata* in the amount of *artava*. The drug is found highly significant after 5 follow-ups with *P* 0.000. Hence the effect of the drug is highly significant. In respect of *alpata* in the duration of *artava pravritti*, it was observed that all the 20 patients had *alpata* in the duration of *artava pravritti*. The drug is found highly significant after 5 follow-ups with *P* 0.000. Hence the effect of the drug is highly significant. In respect of *yonivedana*, it was observed that 13 patients had *yonivedana*. The drug is found significant after 5 follow-ups with *P* 0.021. Hence the effect of the drug is significant.

#### CONCLUSION

From the observation and result it can be concluded that *matrabasti* with *Mahanarayana taila* can give significant relief from signs and symptoms of *artavakshaya* without causing any adverse drug reaction and toxicity in the body. *Matrabasti* with *Mahanarayana taila* can be an effective treatment modality in *artavakshaya* management.

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