

# A Randomised Controlled Clinical Study to Evaluate the Efficacy of Rajahpravartaka Yoga in Nashtartava

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**Abstract— Introduction-** Nashtartava is a condition in which aggravated vata and kapha obstruct the passage of artava, thus menstrual blood is not discharged properly. According to modern medical science, it can be correlated to secondary amenorrhea, oligo/hypomenorrhea. Normal functioning of menstrual cycle is essential for the conception and thereby to get healthy progeny. The prime importance should be focussed on removing the marga-avarodha with alleviation of vata and kapha doshas. Numerous formulations are mentioned in Ayurveda texts for the treatment of Nashtartava, among them Rajahpravartaka Yoga having Rajahpravartana karma is mentioned in Siddha Prayoga Lathika is selected for the study. Present study is to evaluate and compare the efficacy of Tila kalka and Rajahpravartaka yoga to establish a better Ayurvedic formulation in Nashtartava. **Methodology-** Randomised controlled clinical study of 40 patients fulfilling the diagnostic and inclusion criteria, divided into 2 equal groups. Group A- was given Tila kalka and Group B- was given Tab.Rajahpravartaka yoga. **Results-** Based on the observation there was no statistically significant difference between Tila kalka and Rajahpravartaka yoga in the management of Nashtartava. **Conclusion-** Rajahpravartaka yoga have Deepana, Pachana, Vatanulomana, Srotoshodhana, Artavajanana, Rajahpravartana, Garbhashaya Sankochaka and Mastishka uttejaka karmas. It is effective in the management of Nashtartava clinically.

**Index Terms—** Hypo-menorrhea, Nashtartava, Oligomenorrhea, Rajahpravartaka Yoga, Secondary amenorrhea, Tila kalka.

## INTRODUCTION

Motherhood embodies the essence of womanhood, a state revered and honoured even by the divine. The act of reproduction is the most noble of all human capabilities and deserves the utmost respect. *Raja pravrutti* is a natural physiological function and also a magnificent gift which is bestowed upon women, making them the embodiment of motherhood. Menstrual abnormalities are more common nowadays due to stressful and improper lifestyles of

modern women. The normal interval of menstruation is 21 to 35 days<sup>1</sup>, duration of flow is for 3 to 7 days and amount should not be very scanty or excessive<sup>2</sup>. According to *Acharya Sushruta*, *Nashtartava* is a condition in which aggravated vata and kapha obstruct the passage of artava, thus menstrual blood is not discharged properly. There will be *nasha* or *alpata* of visible artava.<sup>3</sup> According to modern medical science, it can be correlated to secondary amenorrhea, oligo/hypomenorrhea. The prevalence of Secondary amenorrhea is approximately 3-4%<sup>4</sup>, Oligomenorrhea is 13.5%<sup>5</sup> and that of Hypomenorrhea is 2-4%<sup>6</sup> women worldwide. Menstrual irregularities if not diagnosed and treated, may become the cause for infertility. Many a times it produces great psychological upset in women.

The prime importance should be focussed on removing the marga-avarodha with alleviation of vata and kapha doshas. *Shodhana* and *shamana* both line of treatment can be given. *Shodhana* includes *basti*, *vamana* and *virechana* and *shamana chikitsa* includes use of *agnyadravyas*<sup>7</sup>. Numerous formulations are mentioned in *Ayurveda* texts for the treatment of *Nashtartava*, among them *Rajahpravartaka Yoga*<sup>8</sup> having *Rajahpravartana karma* is mentioned in *Siddha Prayoga Lathika* is selected for the study. Present study is to evaluate and compare the efficacy of *Tila kalka*<sup>9</sup> and *Rajahpravartaka yoga* to establish a better *Ayurvedic* formulation for *Nashtartava*.

## AIM-

To evaluate the *Rajahpravartana karma* of *Rajahpravartaka yoga* in the management of *Nashtartava*.

## OBJECTIVE OF STUDY

To compare the *Rajahpravartana karma* of *Tila Kalka* and *Rajahpravartaka Yoga* in the management of *Nashtartava*.

### MATERIALS AND METHODS

Source of data -

Literary source: Ayurvedic classical literature, modern literature, articles, previous research works, websites concerned about the disease *Nashtartava* and related drugs were reviewed for the planned study.

Sample source: OPD of Alva's Ayurveda Hospital, Alva's Health Centre Moodbidri, medical camps and other referrals.

Drug source: The raw drugs required were collected from the local market under the guidance of *Dravyaguna* experts and were prepared at Alva's pharmacy, Mijar as per the classical references.

Method of collection of data: A minimum of 40 patients fulfilling the diagnostic and inclusion criteria irrespective of religion, occupation, socio economic status, educational status were selected for the study. A special case proforma was prepared which includes details of history, signs and symptoms, physical examinations, lab investigations as mentioned in our classics and allied sciences. Before starting the treatment, a well-informed written consent of the patient was taken. The parameters of signs and symptoms were scored on the basis of standard method and were analyzed statistically.

Study design - Randomized Controlled clinical study

Table No.- I

Groups	Dosage	Time	Duration of treatment	Anupana
A (control) <i>Tila kalka</i>	6gms BD	Before food	Till the onset of menstruation, maximum for 20 days for 1 <sup>st</sup> cycle, from 25 <sup>th</sup> day of cycle till the onset of menstruation, maximum for 20 days for 2 <sup>nd</sup> cycle	Warm water
B (trial) <i>Rajah-pravartaka Yoga</i>	1vati (500mg) BD	Before food	Till the onset of menstruation, maximum for 20 days for 1 <sup>st</sup> cycle, from 25 <sup>th</sup> day of cycle till the onset of menstruation, maximum for 20 days for 2 <sup>nd</sup> cycle	Warm water

Sample Size –Minimum of 40 patients suffering from *Nashtartava*, fulfilling the inclusion criteria, were randomly divided into Group A & Group B with 20 patients in each group.

Sampling Method – Simple random sampling

### DIAGNOSTIC CRITERIA<sup>10</sup>:

Patients fulfilling first or both of the following diagnostic criterias-

1. Menstrual bleeding with the interval of more than 35 days
2. Scanty menstruation (less than 2 days)

### INCLUSION CRITERIA<sup>11</sup>:

1. Patients fulfilling the first or both of the diagnostic criterias for minimum 2 consecutive cycles.
2. Age group- 16 – 35 years.
3. Patients with HB%  $\geq$  8gm%.

### EXCLUSION CRITERIA<sup>12</sup>:

1. Pregnant and lactating women.
2. Women who have h/o abortion in past 3 months.
3. Congenital abnormalities of reproductive tract.
4. Patients who are using oral contraceptive pills and IUCDs.
5. Patients suffering from Diabetes Mellitus, Hypertension, Thyroid abnormalities, Hyperprolactinemia, PID and other systemic disorders.
6. Benign and Malignant tumour of reproductive tract

### INTREVENTION-

Duration of treatment: 2 consecutive menstrual cycles.

Duration of study: 3 consecutive menstrual cycles.

PERIOD OF OBSERVATION- In both the groups, clinical findings and symptoms before, during and after the treatment was observed and the same was recorded.

During treatment (DT1, DT2): If there is onset of menstruation, after stoppage of bleeding OR 55<sup>th</sup> day of previous cycle.

After treatment/ follow up (AT): If there is onset of menstruation, after stoppage of bleeding OR 55<sup>th</sup> day of previous cycle.

**ASSESSMENT CRITERIA:**

The criteria for assessment of treatment were based on improvement in cardinal symptoms and their percentage of relief before, during and after the treatment. They were analyzed by grading methods.

Subjective parameters: Irregularity, Scanty Bleeding, Pain (VAS scale)

Objective parameters: Interval, Duration, Amount

Grading criteria-

21- 34	0
35-44	1
45-54	2
More than 54	3

More than 4	0
3	1
2	2
1	3
½ day or spotting	4

More than 2	0
2	1
½ -1	2
Spotting	3

**INVESTIGATIONS**

UPT, Hb%, Thyroid profile, USG and other investigations (if necessary) were done.

**RESULT**

The obtained data was analysed statistically by using repeated measures of ANOVA test within the group and Mann Whitney U test was used for comparing the groups.

Characteristic	Group A		% of relief	Group B		P value	
	Mean score			Mean score			
	BT	AT	BT	AT			
Interval	2.65	1.10	58%	2.70	1.05	61%	0.632(>0.05)
Duration	0.85	0.30	65%	1.05	0.25	76%	0.727(>0.05)
Amount	0.70	0.20	71%	0.85	0.15	82%	0.681(>0.05)
Pain	0.95	0.35	63%	0.90	0.15	83%	0.149(>0.05)

Response Grouping	Response	GROUP A		GROUP B	
		No. Of Subjects	%	No. Of Subjects	%
(0%-25%)	Poor Response	0	0%	2	10%
(26%-50%)	Mild Response	3	15%	3	15%
(51%-75%)	Moderate Response	13	65%	9	45%
(76%-100%)	Marked Response	4	20%	6	30%
Total		20	100%	20	100%

## DISCUSSION

Menstruation is a natural physiological process, but menstrual disorders can lead to both structural and functional disturbances, and are associated with issues such as obesity, infertility, and other health problems. In Ayurvedic texts, *Nastharatava* is described as a symptom of various *Yonivyapads* and *Artava Vikaras*. While there is no direct mention of the specific causes of *Nastharatava* in classical Ayurvedic literature, it is understood that the general causes leading to the imbalance of doshas and dhatus, as well as those that disturb the *doshas*, contribute to its onset. To understand the pathogenesis of *Nastharatava*, it is essential to comprehend the formation of the *dhatus*.

The proper formation and function of *artava* depend on the normalcy of digestion and the balance of *agni*. When there is *jatharagni mandya*, along with the vitiation of *samana vata*, *pachaka pitta*, and *kledaka kapha*, this *mandagni* disrupts the formation of *ahara rasa* by producing *ama*. Since *rasa dhatu* is derived from *ahara rasa*, the production of *rasa dhatu* is compromised in such cases. Since *artava* is a secondary product of *rasa dhatu*, its depletion is essentially a depletion of *rasa dhatu*.

The normal functioning of *apana vata* is essential for the expulsion of *artava*. The *garbhashaya* and *artavavahini dhamani* are the primary structures for the transportation of *artava*. The dysfunction of *apana vayu* and *kapha* obstructs the *artavavaha srotas*, resulting in the condition of *Nasthartava*.

The treatment for *Nasthartava* follows the principle of *samprapti vighatana*. The treatment begins with *kaphahara chikitsa*, followed by *pittakara chikitsa*. By addressing the underlying blockage, normal flow of *apana vayu* is restored, which helps in the proper production and expulsion of *artava*, allowing it to flow freely and resolve the condition of *Nasthartava*. Drugs having *Rajahpravartana karma*, which can workout at the different levels of *Samprapti Ghataka* were selected for the study.

DISCUSSION ON MODE OF ACTION<sup>13,14</sup>PROBABLE MODE OF ACTION OF *TILA KALKA*-

*Tila* is having *Artavajanana*, *grahi*, *Garbhashaya sankochaka*, *Srotovishodhana karmas*, it is indicated

in *Anartava*, *Yoniroga*, *Agnimandya*. Considering the action of drugs on *Samprapti Ghataka*-

- ✓ Action at *-Dosha level-Vata-kapha Hara*
- ✓ *Dushya level – Artavajanana*
- ✓ *Agni level-Grahi*
- ✓ *Srotas level- Srotovishodhana*
- ✓ *Adhithana - Garbhashaya sankochaka*
- ✓ It possess *Madhura* as predominant *Rasa*, pacifies aggravated *Vata Dosha*.
- ✓ *Sukshma*, *Vyavayi*, *Teekshna*, *Vishada* as predominant *Guna* & is mainly *ushna Veerya* does *Srotovishodhana*, *Garbhashaya sankocha*.

PROBABLE MODE OF ACTION OF *RAJAHPRAVARTAKA YOGA*-

*Hingu* is having *Katu rasa*, *teekshna*, *laghu guna*, *ushna virya*, *katu vipaka* and it is *vata-kaphahara*, *Pittavardhaka* does *Artavajanana*, *Deepana*, *Pachana*, *Vatanulomana*, *Uttejaka*, *Kaphanihssarka*, *Garbhashaya sankochaka* action. *Tankana* is having *Katu rasa*, *teekshna guna*, *ushna virya*, *katu vipaka* and it is *vata-kaphahara*, *Pittavardhaka* indicated in *Vata-shleshma vikara* and *agnimandya*. *Kasisa* is having *tikta*, *Kashaya rasa*, *ushna guna*, *ushna virya*, *amla vipaka* and it is *vata-kaphahara* and has *Rajahpravartaka karma* indicated in *Yoni rogas*. *Kumari* is having *Tikta*, *Madhura rasa*, *Guru Snigdha*, *Picchila guna*, *ushna virya*, *katu vipaka* and it is *vata-kaphahara*, *Pittavardhaka* and has *Artavajanana*, *Garbhashaya uttejakakarma*, *bhedana prabhava*. *Bola* is having *Tikta*, *Katu*, *Kashaya*, *Madhura rasa*, *Laghu*, *Rooksha guna*, *Ushna virya*, *katu vipaka* and it is *Tridosha Hara* and has *Artavajanana*, *Shleshmala kala uttejaka*, *Garbhashaya shodhana* action, indicated in *Anartava*. *Shalmali* is having *Kashaya*, *Madhura rasa*, *Laghu*, *Snigdha guna*, *sheeta virya*, *Madhura vipaka* and it is *Vata-pitta Hara* and has *Rakta-sthambhana* action. After a period of amenorrhea, menstruation often results in heavy bleeding. To help prevent this, a small amount of *Shalmali Pushpa Churna* may have been added. *Jatamansi* is having *Tikta kashaya rasa*, *Laghu guna*, *sheeta virya*, *katu vipaka* and it is *Tridosha Hara* and has *Artavajanana*, *Medhajanaka*, *raktabhisaranottejaka*, *vatanulomak*, *soumansya janana*, *mastishka uttejaka karmas*

directly acting on H-P-O axis and corrects hormonal imbalance.

As a formulation *Rajahpravartaka yoga*, contains most of the drugs with *katu rasa, ushna virya, katu vipaka, vatakaphahara, pittavardhaka* so does *Deepana, Pachana, vatanulomana, srotoshodhana, artavajanana, garbhashaya sankochaka karma* and *jatamansi* is having *mastishka uttejaka karma*. Considering the action of drugs on *Samprapti Ghataka-*

- ✓ Action at *-Dosha level-Vata-kapha Hara , pittavardhaka*
- ✓ *Dushya level – Artavajanana*
- ✓ *Agni level-Deepana, Pachana*
- ✓ *Srotas level- Srotovishodhana*
- ✓ *Adhithana - Garbhashaya sankochaka, mastishka uttejaka karma, Rajahpravartaka karma*

#### DISCUSSION ON RESULT

Statistically, there is no significant difference between groups A and B in terms of their respective reductions in interval, increase in Duration, increase in Amount, reduction in Irregularity, improvement in scanty bleeding and reduction in Pain. Clinically, Group B showed better effect in all these parameters within the group and between the groups.

Overall Response After Treatment (Table No.-VI)- The Overall Response After Treatment data shows that Group A and Group B have some differences in response distributions. Group A had no subjects in the poor response category, then Group A and B had same proportion in mild response category. Additionally, while Group B had a higher percentage of marked responses whereas Group A had a larger proportion of moderate responses.

#### CONCLUSION

The entire work can be concluded as overall, Group B showed better effect than Group A clinically. *Deepana, Pachana, Vatanulomana, Srotoshodhana, Artavajanana, Rajahpravartana, Garbhashaya sankochaka* And *Mastishka uttejaka karmas of Rajahpravartaka yoga* helped in managing *Nasthartava*. But statistically, there is no significant difference between group A and B in terms of all parameters. So, There was neither statistically significant difference between *Rajahpravartaka yoga* and *Tila kalka*, nor *Rajahpravartaka yoga* is better than *Tila kalka* in *Nasthartava*. Thus, Null

hypothesis is accepted and Alternate hypothesis is rejected.

Limitations of the study: Generalization is difficult due to small sample size.

Scope for future study: The current study was carried on a small sample. Working upon larger samples may help to bring about better results.

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