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Evaluation of the efficacy of *Latakaranja* as Antispasmodic Drug in *Kastaartava* - A Randomised Clinical Control Trial

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ABSTRACT

Kastaartava (Dysmenorrhoea) is a greek word, describes about painful menstruation which the *Pratyatmaka Lakshans* of various *Yonivyapad* that are *Vatala Yonivyapad*, *Udavartini Yonivyapad*, *Paripluta Yonivyapad*, *Mahayoni* and *Vataja Artava Dusti* that affects 75% of adolescents, 25-50% of adult women and 5-20% having dysmenorrhoea. It is a common reason for losing time at school or work or visiting family doctor. Morbid *Vatadosha* especially *Apanavata* is a causative factor of *Kastaartava*. *Vatahara* properties are beneficial considering the morbidity and complications that are caused by *Kastaartava*, mentioned above herbal preparation has been tried here. This research work is randomized control clinical study with Pre-test and Post-test design. 40 patients suffering from *Kastaartava* (Dysmenorrhoea) were selected randomly for study. The selected patients were divided into 2 groups, 20 patients each. The selected 20 patients in Group A (Trial group) were administered *Latakaranja Beeja Churna* orally. The selected 20 patients in Group B (Controlled group) were administered *Rajapravartini Vati*. The duration of treatment was for 03 days of menstruation for 2 menstrual cycles and follow-up for the next menstrual cycle. After the completion of the clinical trial, it was found that in *Rajapravartini Vati*, there was highly significant result in Cramping pain in abdomen, Irritability, Tenderness in Breast, Back pain and Headache, where as *Latakaranja Beeja Choorna* there is also significant result in Cramping pain in Abdomen, Irritability, Tenderness in Breast, Back Pain, Headache and Vomiting but statistically considering average mean *Latakaranja Choorna* shows comparatively lesser effective than *Rajapravartini Vati*. By the statistical results it can be concluded that *Rajapravartini Vati* has better result when compared to *Latakaranja Choorna* in the present study.

Key words: *Kastaartava*, *Dysmenorrhoea*, *Latakaranja Beeja Churna*, *Rajapravartini Vati*.

INTRODUCTION

Ayurveda is the supreme knowledge. It is not only the science which deals about the various diseases, their pathology and their treatment aspect but goes much beyond. It tells how one has to lead his life, maintain

the body according to the daily and seasonal regimen and maintain the mind in the happy state away from sadness and sorrow and take precautionary measures to prevent diseases. It is the nature's prescription to physical as well as mental diseases and it is the ancient wisdom best suited for modern man.

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Women health is the primary factor to be considered for the wellbeing of family, society and culture. In this competitive world, women are trying to compare equally to men. To withstand in the competition and to achieve her goals, she should be in the perfect healthy condition. Any physical and mental disorders disturb her educational, social and economic life.

Menstruation has dual significance for women, from one perspective defines the start and end of reproductive potential, an affirmation of womanhood, On the other hand, it has sociocultural

significance. The menstruation is considered as a landmark of homeostatic condition of reproductive system. The same menstruation can create the hell situation, if it is associated with unbearable pain as we are observing In the case of *Kastaartava*.

Today stress is becoming an inescapable part of modern life. In the incessant quest for material comforts, a Woman has been losing her health. Menstruation is a natural event, as a part of normal process of reproduction. All the four factors *Rutu* (Fertile period), *Kshetra* (Female genital organs or reproductive organs), *Ambu* (blood supply) and *Beeja* (sperm and ovum) are effected indirectly by *Kastartava*. The word “*Kastartava*” is a self explanatory one and requires little picture. It is formed of two words “*Kasta*” and “*Artava*”.^[1] *Prajotpadana Asamarthayata*,^[2] *Beeja Asamarthyata*,^[3] *Abeeja*^[4] are the some scattered *Upadrava* of *Artava Dusti*.

In this scenario, rather than hormonal treatment from contemporary science, Ayurvedic Herbo-mineral, nontoxic preparations are proved effective in *Kastartava*.

This study is an effort to evaluate the Efficacy of *Latakaranja Choorna*^[5] and *Rajapravartini Vati* in the management of *Kastaartava*.

In the present study the patients suffering from *Kastartava* were randomly categorized into 2 groups. Patients of one group were subjected for *Rajapravartini Vati* and patients of other group were subjected for *Latakaranja Choorna*. Results were compared after follow up of 2 cycles.

OBJECTIVES

1. To evaluate the efficacy of *Latakaranja* as an Antispasmodic in *Kastaartava*.
2. To evaluate the efficacy of *Rajapravartini Vati* in the management of *Kastaartava*.
3. To compare and evaluate the effect of *Latakaranja* and *Rajapravartini Vati* in the management of *Kastartava*.

MATERIALS AND METHODS

The clinical study entitled “Evaluation of the efficacy of *Latakaranja* as an Antispasmodic in *Kastaartava* - A randomised control clinical trial” was carried out on 40 patients who attended the OPD and IPD sections of Prasooti Tantra and Stree Roga Department, SDMT'S Ayurvedic College, Danigond Post Graduation Centre, Terdal, Bagalkot, Karnataka.

Study Design

- It is a randomized clinical controlled clinical study with a Pre-test and Post-test design, where 20 Patients suffering from *Kastartava* were selected.
- The selected patients were divided into 02 groups, 20 Patients each.
- The selected 20 Patients in Group A (Trail group) were administered *Latakaranja Beeja Choorna* orally.
- The selected 20 Patients in Group B (Control group) were administered *Rajapravartini Vati*.
- The duration of treatment was for 03 months, starting from 01st day of menstruation till 03rd day for two menstrual cycle and follow up for the next menstrual cycle.
- The parameters of Signs and Symptoms were scored on the basis of standard method of Statistical Analysis.

Method of preparation of *Churna*

In Ayurvedic therapeutics, *Churna* preparations are found described either as medicine or for preparing other drugs or for adding as *Praksepa Dravyas* in other preparation and such *Churna Kalpana* can also be considered as the basic preparation.

Though *Charaka*, has not included it in *Pancha Vidha Kasaya Kalpana* but its commentator *Chakrapani* explained in the commentary on *Pancavidha Kasaya Kalpana* that is the type of *Kalka Kalpana* where the drug is subjected to grinding without adding any liquid. While in *Kalka Kalpana* drug is subjected grinding with some liquid. Hence, it is mentioned that

DviVidhoh Kalka Sadravahadravaccheti. It means *Sadrava* is *Kalka* and *Adrava* is *Churna*.

The *Latakaranja Beeja* procured from the Herbal Garden of the SDM' Trust Ayurvedic Medical College, Danigond Post Graduation Centre, Terdal, which was identified by HOD & Professor of Dravya Guna Department of SDM' Trust Ayurvedic Medical College, with the help HOD & Professor of Rasa Shastra Department. *Latakaranja* seed kernel was removed and pounded well in the *Khalvayantra* until the *Suksma Churna*, the *Choorna* was sieved through 16 no. sieve and preserved in a clean, dried and air tight glass jar and used whenever required.

METHOD OF THERAPY

Group - A

20 patient were taken for the study with the trail drug *Latakaranja Beeja Choorna* and dose was 3gm thrice in a day from 1st day to 3rd day of menstruation cycle, ½ hr before food.

- *Anupana - Sukhoshna Jala.*

Group - B

20 patient were taken for the study with the trail drug *Rajapravartini Vati* and dose was 2 tablets thrice in a day from 1st day to 3rd day of menstruation cycle, ½ hr before food.

- *Anupana- SukhoshnaJala.*

Inclusion Criteria

- Patients between the age group of 15-40 years, with the predominant complaints of *Kastartava*.
- Irregular Menstruation
- Oligomenorrhoea

Exclusion Criteria

- Patients with genetic and hereditary disorders.
- Known case of PCOD.
- Known case of Uterine Cancer, Uterine polyp, Cervical polyp, IUCD'S.
- Known case of Congenital Heart Diseases, DM, HTN, TB etc.

- Other systemic disease on treatment that may interfere with the study will be excluded.

Grading and Grouping

Grading and grouping to the assessment criteria and measurement scale concerned to each item categorically differentiated the findings among the assessment in the clinical study. And finally the assessment as a whole was presented in percent value.

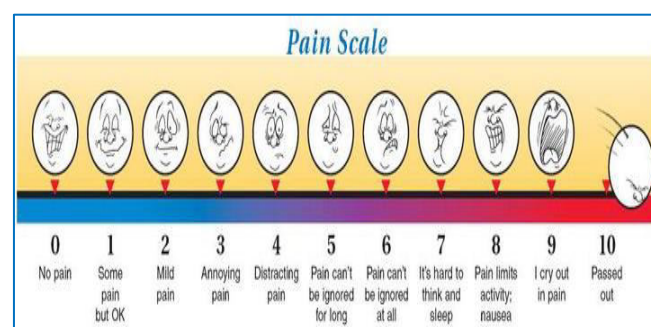
Assessment Scale

To understand the severity of any problem. It is essential to have different grading methods. Hence to assess the level of suffering and also to know the level of improvement, the following grading was considered for different selected parameters.

1. Pain

Pain was assessed on the basis of visual analogue scale

Pain	Grade
No pain	0
Mild pain	1
Moderate pain	2
Severe pain	3



I have used VAS scale (visual analogue scale) for pain gradation. Pain intensity 0=no pain, 1-3=mild pain (pain present but doesn't disturb the routine), 4-6=moderate pain (pain present which disturbs the routine), 7-10= severe pain (patients rolls on the bed due to pain).

2. Tenderness

Tenderness	Grade
No tenderness	0
Tenderness to palpation without flinch	1
Tenderness with flinch to palpation	2
Tenderness with Withdrawal	3

3. Vomitting

Vomitting	Grade
Absent	0
1-2 time/day	1
3-5time/day	2
More than 5times/day	3

4. Irritability

Irritability	Grade
Absent	0
Aggressiveness with reason but calm immediately	1
Aggressiveness with reason but take time to calm down	2
Aggressiveness with reason but take time to calm down	3

OVERALL EFFECT OF THE THERAPIES

Table 1: Showing the overall response

Class	Grading
<24%	Poor response
25-49%	Moderate response
50-74%	Good response
75-100%	Excellent response

OBSERVATIONS AND RESULTS

The clinical observations from the different aspects approaching to the treatment for the patients of both the Group-A and B have been represented showing the incidence, statistic analysis of effectiveness along with clinical assessment of results etc., the data of each item are explained here under and have been represented in the tabular form with footnotes.

Table 2: Multiple comparisons in cramping pain in abdomen.

Post hoc test				
Group	Comparison between		Sig.	Remarks
Group-A	BT	1 st Cycle	>0.05	NS
		2 nd Cycle	<0.001	HS
		FU	<0.001	HS
	1 st Cycle	2 nd Cycle	>0.05	IS
		FU	<0.001	HS
	2 nd Cycle	FU	>0.05	NS
Group-B	BT	1 st Cycle	>0.05	NS
		2 nd Cycle	<0.001	HS
		FU	<0.001	HS
	1 st Cycle	2 nd Cycle	>0.05	IS
		FU	<0.001	HS
	2 nd Cycle	FU	>0.05	NS

Table 3: Multiple comparisons of irritability.

Post hoc test				
Group	Comparison between		Sig.	Remarks
Group-A	BT	1 st Cycle	>0.05	NS
		2 nd Cycle	>0.05	NS
		AT	<0.001	HS
	1 st Cycle	2 nd Cycle	>0.05	NS

		AT	>0.05	NS
	2 nd Cycle	AT	>0.05	NS
Group-B	BT	1 st Cycle	>0.05	NS
		2 nd Cycle	<0.001	HS
		AT	<0.001	HS
	1 st Cycle	2 nd Cycle	<0.05	Sign
		AT	<0.001	HS
	2 nd Cycle	AT	>0.05	NS

Table 4: Multiple comparisons of tenderness in breast.

Post hoc test				
Group	Comparison between		Sig.	Remarks
Group-A	BT	1 st Cycle	>0.05	NS
		2 nd Cycle	>0.05	NS
		AT	<0.001	HS
	1 st Cycle	2 nd Cycle	>0.05	NS
		AT	>0.05	NS
	2 nd Cycle	AT	>0.05	NS
Group-B	BT	1 st Cycle	>0.05	NS
		2 nd Cycle	<0.001	HS
		AT	<0.001	HS
	1 st Cycle	2 nd Cycle	>0.05	NS
		AT	<0.001	HS
	2 nd Cycle	AT	<0.05	Sign

Table 5: Multiple comparisons of backpain.

Post hoc test				
Group	Comparison between		Sig.	Remarks
Group-A	BT	1 st Cycle	>0.05	NS
		2 nd Cycle	<0.001	HS
		AT	<0.001	HS

	1 st Cycle	2 nd Cycle	<0.05	Sign
		AT	<0.001	HS
	2 nd Cycle	AT	>0.05	NS
Group-B	BT	1 st Cycle	>0.05	NS
		2 nd Cycle	<0.001	HS
		AT	<0.001	HS
	1 st Cycle	2 nd Cycle	>0.05	NS
		AT	<0.001	HS
	2 nd Cycle	AT	>0.05	NS

Table 6: Multiple comparisons of headache

Post hoc test				
Group	Comparison between		Sig.	Remarks
Group-A	BT	1 st Cycle	>0.05	NS
		2 nd Cycle	<0.001	HS
		AT	<0.01	HS
	1 st Cycle	2 nd Cycle	>0.05	NS
		AT	<0.05	Sign
	2 nd Cycle	AT	>0.05	NS
Group-B	BT	1 st Cycle	>0.05	NS
		2 nd Cycle	<0.001	HS
		AT	<0.001	HS
	1 st Cycle	2 nd Cycle	<0.01	HS
		AT	<0.001	HS
	2 nd Cycle	AT	>0.05	NS

Table 7: Multiple comparisons of vomiting.

Post hoc test				
Group	Comparison between		Sig.	Remarks
Group-A	BT	1 st Cycle	>0.05	NS
		2 nd Cycle	<0.001	HS
		AT	<0.001	HS

	1 st Cycle	2 nd Cycle	<0.01	NS
		AT	<0.001	Sign
	2 nd Cycle	AT	>0.05	NS
Group-B	BT	1 st Cycle	>0.05	NS
		2 nd Cycle	<0.001	HS
		AT	<0.001	HS
	1 st Cycle	2 nd Cycle	<0.01	HS
		AT	<0.001	HS
	2 nd Cycle	AT	>0.05	NS

DISCUSSION

Probable mode of Rajapravartini Vati

The drug *Rajapravatini Vati* has straightly effect on the *Arthavavaha Srotas*. The ingredients of *Rajapravatini Vati* has *Katu Rasa, Katuvipaka, Laghu, Rooksha, Teekshnaguna, Ushnaveerya, Vata Kaphahara* and *Pitta Vardhaka* property. All these *Gunas* will remove obstruction in the passage and does the *Sroto Shodhana*. By this there is marked improvement in *Stanika Arthavagni* and thus *Upadhatu Arthava*. The *Ushnaguna* will increase the secretion of glands thus improves proliferative phase of menstrual cycle. By all these action, menstruation takes place at regular intervals with normal duration. Thus the *Rajapravartini Vati* helps in the treatment of *Kastaratava* (Dysmenorrhoea).

As well as by fruitage its *Lekhana Karma* it does extra vascularization of musculature, curates *Upalepa* produced by *Kapha Dosha* in *Arthavavaha Srotas*. Thus removes the obstruction and helps in free flow of *Arthava*. By its *Vatanulomana* and *Shulaghna* it reduces the spasmodic type of pain. Thus the *Rajapravartini Vati* will helps in the treatment of *Kastaratava* (Dysmenorrhoea).

The ingredients of *Rajapravartini Vati*, *Hingu* and *Kumari* contain phytoestrogens. The presence of Phytoestrogen showed estrogenic activity of the drug. Thus does is useful in *Kastartava*. These estrogens promotes the synthesis of specific membrane receptors in Uterine smooth muscle cells as well as

protein of the contractile apparatus. Thus it helps in proper contraction of smooth muscles during menstrual phase and cures *Kastartava* (Dysmenorrhoea).

Probable mode of Latakaranja Beeja Churna

The drug *Latakarnja Beeja Churna* has straightly effect on the *Shula* which is Spasmodic in nature as mentioned in our classics *Bhavaprakash Nighantu* in *Guduchayadi Varga* and *Raja Nighantu*.

The *Gunas* of *Latakaranja* were *Tikta, Katu Rasa, Tikсна, Laghu, Ruksa Guna, Katu Vipaka, Usna Virya* along with *Vata Kapha Shamaka, Shothahara, Shoolghana, Jwaraghana*.

All these *Gunas* will remove obstruction in the passage and does the *Sroto Shodhana*. By this there is slight improvement in *Stanika Arthavagni* and thus *Upadhatu Arthava*. The *Ushna Guna* will increase the secretion of glands thus improves proliferative phase of menstrual cycle. By all these action, menstruation takes place at regular intervals with normal duration.

By its *Vatanulomana* and *Shulaghna* it reduces the spasmodic type of pain. Thus the *Latakaranja* will helps in the treatment of *Kastaratava* (Dysmenorrhoea).

Due to presence of Tannins as well Flavonoids which act as Antispasmodic action as well as Homeostatic property of the *Latakaranja*.

Latakaranja also act as anti-oxidant and having estrogenic activity. Thus, help in the management of the *Kastartava*.

The overall effects of *Latakarnja Beeja Churna* and *Rajapravartini Vati* in both the groups patients responded excellently in 85% with *Rajaparavartini Vati* and 75% with *Latakarnja Beeja Churna* and no response to moderate and poor.

CONCLUSION

Kastartava (Dysmenorrhoea), is a very common Gynecological Ailment among the Unmarried Maiden, The *Kastaratva* is due to mainly *Apana Vata Dusti*. *Kastartava* is having the crucial impact on both the

Mental as well as Physical status, there by hampering the day to day activities of the Maiden, which is characterized by Painful Menstruation. The drug *Rajapravartini Vati* has straightly effect on the *Arthavavaha Srotas*. The ingredients of *Rajapravartini Vati* has *Katu Rasa, Katu Vipaka, Laghu, Rooksha, Teekshna Guna, Ushna Veerya, Vata Kaphahara* and *Pitta Vardhaka* property, whereas the *Latakaranja Beeja Churna* were having *Tikta, Katu Rasa, Tikсна, Laghu, Ruksa Guna, Katu Vipaka, Usna Virya* along with *Vata Kapha Shamaka, Shothahara, Shoolghana, Jwaraghana*.

So based on the results, we can say that *Latakaranja Beeja Churna* is having good effect in Vomiting Parameter whereas, *Rajapravartini Vati* is more effective in treating Cramping Pain in Abdomen, Tenderness in Breast, Irritability, Back pain, Headache, hence *Kastartava* (Dysmenorrhea) in all the other parameters. So, it can be concluded that, *Rajapravartini Vati* is having significant effect in treating the *Vyadhi Kastartava*.

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