



## **Reporting The Clinical Outcome of Marma Chikitsa in Management of Kashtartava (Primary Dysmenorrhea): A Case Series**

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### **ABSTRACT**

*Pain is a natural and universal human experience, an acute reminder of our frailty and the complexity of our life. Unpleasant sensory experiences like pain are distinct from others like touch, warmth, and cold. Through a variety of peripheral nerves, a harmful signal from the periphery is sent to the spinal cord. Kashtartava i.e., dysmenorrhea is not separately described as a disease anywhere in Ayurvedic classics. But there are many other diseases in which Kashtartava is considered and described as a symptom. The purpose of this study is to gather scientific evidence on the effectiveness, safety, and feasibility of Marma Stimulation. By understanding this healthcare providers will be able to provide a range of evidence-based options for managing primary dysmenorrhea, allowing for personalized and holistic care that goes beyond pharmaceutical solutions. 10 diagnosed cases of primary dysmenorrhea with regular menstrual cycle were selected from OPD of Parul Ayurved Hospital between the age group of 18- 25 years. They were administered Marma Chikitsa once daily during premenstrual phase for two consecutive cycles. Pain, the duration of analgesia, and the use of pain medication were assessed before and after the intervention. A significant decrease in pain ( $p<0.005$ ) was observed after the intervention of Marma Chikitsa, with a more long-lasting analgesia and improvement in working ability, duration as well as intensity of pain ( $p<0.005$ ) and decreased need for pain medication. In females with primary dysmenorrhea, Marma Chikitsa was able to promote nearly complete analgesia, and the analgesia persisted for at least one additional menstrual cycle even after the treatment was stopped. Patients also got relief in the pre-menstrual symptoms like nausea, vomiting, lethargy and tenesmus. Use of analgesic drugs were significantly reduced post treatment.*

**Keywords:** Ayurveda, Kashtartava, Marma Chikitsa, non-pharmacological, pain management, primary dysmenorrhea.

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### **INTRODUCTION**

Primary dysmenorrhea is one of the most common gynaecological conditions with prevalence rate of 89.1% [1]. *Vatadosha* plays a pivotal role in causation and cure of almost every gynaecological disease. *Kashtartava* is one of the most prevalent gynaecological disorders featuring pain before and with the onset of menstruation which usually resolves spontaneously with the discharge of menstrual fluid. *Marma* is body's most important region. The Sanskrit word "*Mri*" which means death, is the root of the term "*Marma*." The Sanskrit expression "*Marayanti Iti Marmani*" (death or major bodily or health harm following infliction to the point of their position) also indicates these things. Thus, these locations are referred to as *Marma*. The level of medical research was unable to advance throughout India's long period of foreign control, which had an impact on *Marma Vigyan*'s growth. When it comes to advancement, Indian medical research has received unfair treatment. However, it is encouraging that *Marma Vigyan* is a compendium of *Marma*'s essential knowledge.

**उपचारात्मकदृष्ट्या शरीरस्य निर्दिष्टस्थानानां यथाकालं यथाविधं च प्रेरणम् मर्म- चिकित्सा इति अभीधीयते । [2]**

*Marma* treatment concentrates on stimulating the body to treat stress- and occupational-related illnesses. From the point of treatment marma points must be stimulated, after identification of the fixed points at the given time and by the specific methods described.

It has been established that prostaglandins, which are generated during menstruation, are linked to inflammation. The effect of prostaglandins on the incidence of menstrual pain is another area of scientific inquiry. In the inflammatory process, prostaglandin F<sub>2</sub> (PGF<sub>2</sub>) and prostaglandin E<sub>2</sub> (PGE<sub>2</sub>) play distinct functions. PGF<sub>2</sub> promotes the vasoconstriction that causes local endometrial tissue hypoxia. In order to support menstrual bleeding, PGF<sub>2</sub> stimulates the smooth muscle to contract. PGE<sub>2</sub>'s effects vary depending

on the receptor type; however they may include leukotriene recruitment and endometrial vasodilation. Prostaglandins may also contribute to the synthesis of other growth factors that are important for the inflammatory response or the recovery after menstruation. The migration of neutrophils and leukocytes into the endometrium may also be enhanced by prostaglandins [3]. PGE2 can also cause oedema. Mainstay of treatment for primary dysmenorrhea is NSAID's which may have long term adverse effects on the health of patient, like giddiness, dysuria, fatigue, anorexia, vomiting, skin inflammation, and gastric ulcer.

The failure rate of NSAIDs treatment is estimated to be 20%-25%, whereas some drugs may be contraindicated and may not be tolerated by women [4].

Parul Institute of Ayurved has done few more studies in Kashtartava (dysmenorrhea) which includes, Efficacy of Saptasaram Ghan Vati in the Management of Kashtartava (Primary Dysmenorrhea) [5] and Effect of Trachyspermum ammi Extract on Primary Dysmenorrhoea [6].

**Material and methods**

This study was conducted in patients having primary dysmenorrhea for 3 or more consecutive menstrual cycles. A total of 10 subjects were enrolled in the study. Before enrolment in the study patients were screened for primary dysmenorrhea and USG pelvis was done to rule out any pelvic pathology. Haemoglobin levels and Urine analysis were also assessed and patients having Hb >7 gm% and normal Urine analysis were enrolled in the study.

**Statistical methods:**

All the collected data was analysed in SPSS software. Wilcoxon signed rank test was done to compare the result within the group among the 3 follow ups. Probability p-value less than 0.05 were considered statistically significant.

The primary outcomes for this study were pain severity and pain duration. Secondary outcomes were changes in bleeding, any adverse effects of the treatment, and rate of satisfaction.

**Assessment criteria**

1. VAS (VISIUAL ANALOGUE SCALE) SCORE
2. WaLIDD SCORE [7]

Working ability	Location	Intensy (Wong- baker)	Days of pain	scores
None	None	Does not hurt	0	0
Almost never	1	Hurts a little bit	1-2	1
Almost always	2-3	Hurts a little more- hurts even more	3-4	2
always	4	Hurts a whole lot- hurts worst	≥5	3

**Table 1: WaLLID score interpretation**

- 0- no dysmenorrhea
- 1-4 - mild dysmenorrhea
- 5-7- moderate dysmenorrhea
- 8-12- severe dysmenorrhea

**INTERVENTION:**

This technique depends upon three basic things -

1. Identification of *Marma* point.
2. Stimulation of *Marma* point with the help of thumb and fingers.
3. Relaxation.

In this study a total of five *Marma* points were stimulated daily during the pre-menstrual phase

1. *Vasti*[8]
2. *Vitapa*[9]
3. *Kukundara*[10]
4. *Katikataruna*[11]
5. *Indravasti*[12]

**Standard Operating Procedure**

✓ **Poorva Karma**

- Patient is asked to empty the bladder.
- Patient is asked to lie down comfortably for *Marma* stimulation.
- Hands are sanitized.

✓ **Pradhaan Karma**

- *Marma* points are identified and stimulated one by one.

- The marma point was touched pulp of the thumb. In case of *Vasti Marma* all four fingers in a flat position were used in circular motion.
- Each *Marma* point was pressed for 18 to 20 times.[13]
- ✓ **Paschaatkarma**
  - After giving pressure, the site was rubbed gently to avoid the creation of a mark at the site.

**RESULTS AND DISCUSSION**

	VAS				P VALUE			% CHANGE		
	BT	C1	C2	AT	BT VS C1	BT VS C2	BT VS AT	BT VS C1	BT VS C2	BT VS AT
Mean	8.10	4.20	1.10	0.80	.005	.005	.005	-48%	-86%	-90%
Std. Deviation	1.45	2.25	1.20	1.23						

**Table 2: VAS score statistical analysis before and after treatment**

(BT: Before treatment, C1: first menstrual cycle during treatment, C2: second menstrual cycle during treatment, AT: After treatment; third menstrual cycle without treatment)

Pain during menstruation was assessed using VAS (visual analogue scale) score on which ranges from 0 – 10, with higher scores indicating worst pain. Comparison of the pain of the patients before and after treatment was done using Wilcoxon sign rank test, revealed that there was significant difference (p-value = 0.005). 90% relief was observed in before and after treatment.

**Table 3: WaLIDD score statistical analysis before and after treatment**

	WaLIDD SCORE				P VALUE			% CHANGE		
	BT	C1	C2	AT	BT VS C1	BT VS C2	BT VS AT	BT VS C1	BT VS C2	BT VS AT
Mean	8.20	3.90	1.70	0.70	.005	.005	.005	-52%	-79%	-91%
Std. Deviation	1.81	1.91	2.11	1.64						

(BT: Before treatment, C1: first menstrual cycle during treatment, C2: second menstrual cycle during treatment, AT: After treatment; third menstrual cycle without treatment)

Severity of dysmenorrhea (Working ability, Site of pain, intensity of pain and duration of pain) was assessed using WaLIDD score on which ranges from 0 –12, with higher scores indicating severity of dysmenorrhea. Comparison of the WaLIDD score of the patients before and after treatment was done using Wilcoxon sign rank test , revealed that there was significant difference (p-value = 0.005). 91% relief was observed in before and after treatment.

After *Marma* stimulation, the participants showed a considerable decrease in painful sensations. Although this was anticipated, the degree of pain relief exceeded expectations. Additionally, because none of the individuals required analgesic medication following the intervention, the requirement for painkillers was greatly decreased. Given that primary dysmenorrheic female patients may spend 2-3 times as much on healthcare as non-dysmenorrheic female patients[14], reducing the need for medication may be one goal of *Marma Chikitsa*, which was successfully achieved by the researcher in the present study. No adverse effects of the stimulation were observed during or after the study.

**DISCUSSION**

The results of the present study show important improvement in pain experienced by females with primary dysmenorrhea by *Marma Chikitsa*. *Marma Chikitsa* already presents evidence of analgesic results for low back ache. [15], [16]

During the *Marma* Stimulation, the intensity always remained in maximum tolerable levels, causing strong paraesthesia. The *Marma Chikitsa* acts on the pain gate to reduce the pain. The *Marma* stimulation improves the blood circulation which helps in removing the waste products and thus reducing ischemia to tissues during contractions of uterus. The elasticity of the surrounding structures was thus increased which significantly improved the physiology and painful symptoms.

The treatment for primary dysmenorrhea can be pharmacological, non-pharmacological, and surgical [17], with the advantage of neuromuscular therapy not leading to adverse effects [18]. *Marma Chikitsa*, a non-invasive technique that is frequently used to increase analgesia in acute and chronic medical disorders, is

another non-pharmacological treatment method for primary dysmenorrhea [19], [20], [21]. It is easy to perform, with no reported side effects, and the central nervous system's opioid receptors are activated as part of its mechanism of action, which is based on the gate control hypothesis. This study has shown that *Marma Chikitsa* can lead to a decrease in pain in those females suffering from primary dysmenorrhea.

Most subjects had habit of fast food eating (*Virrudhashana*), waking till late night (*Ratrijagran*), and sleeping during day time (*Diwaswapna*). None of the subjects were following *Rajaswalacharya*. There was no change seen the menstrual pattern of the subjects, no changes in amount, smell, colour or duration of bleeding was observed during or after the treatment.

Since touch and other senses also share pain receptors, there is no separate system for detecting pain. According to pattern theory, people only feel pain when certain patterns of neural activity occur, such as when certain types of brain activity reach unusually high levels. Only extremely intense stimulus causes these patterns. It suggests that peripheral sensory receptors respond to touch, temperature, and other non-damaging as well as damaging stimuli, resulting in non-painful or painful sensations. This is due to changes in the patterns (in time) of the impulses transmitted by the nervous system. [22].

According to gate theory of pain [23] the interplay among these connections determines when painful stimuli go to the brain.

When we stimulate *Marma*, we stimulate normal somatosensory input to the projector neurons. This closes the gate and reduces the perception of pain.

Pain modulation is bidirectional. Pain modulating circuits not only produce analgesia, but also are capable of increasing pain. Both pain inhibition and pain facilitating neurons in the medulla project to and control spinal pain transmission.

## CONCLUSION

A woman's quality of life may be negatively affected by dysmenorrhea. Dysmenorrhea, pain and discomfort can interfere with day-to-day activities, job productivity, and social relationships. Women could have higher rates of absence from work or school, lower levels of physical activity, and a general reduction in wellbeing. Managing chronic pain takes a toll on one's emotions, which can result in melancholy, anxiety, and irritability. As a result, symptom relief and an overall improvement in women's quality of life depend heavily on early diagnosis and effective care of dysmenorrhea. *Marma Chikitsa* was able to promote almost complete analgesia in females with primary dysmenorrhea, and the analgesia persisted for more than one menstrual cycle even after the treatment was stopped. Patients also got relief in the pre-menstrual symptoms like nausea, vomiting, lethargy and tenesmus. Use of analgesic drugs were significantly reduced post treatment. The present study has some limitations. Other measures could have been taken, such as pain sensitivity (with pressure pain threshold measurement),  $\beta$ -endorphin levels before and after treatment, a larger sample size can be taken for a more accurate analysis. Given that the method was firstly proposed in the present study, it was not compared to active TENS or other known analgesic non-pharmacological method, which should be the object of further studies.

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## Author Contribution

Dr. Varsha Implemented Marma chikitsa, collected data, conducted data analysis and wrote research paper. Development of study design and corrections in the research paper: Dr. Asokan V and Dr. Lumi Bhagat.

## Ethics Approval

Research ethics approval was obtained from the Ethical Institutional Committee. Approval from the Head of the department of organization obtained prior to data collection.

## Informed consent

Participation information sheet was provided before study. The written consent was obtained from each participant.

**Conflict of interest** Authors have no relevant financial or non-financial interests to disclose.

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