



Case Study

CHATURBEEJA ARKA IN PRIMARY DYSMENORRHOEA- A CASE SERIES

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Article info

Article History:

Received: 28-09-2021

Revised : 10-10-2021

Accepted: 30-10-2021

Published: 20-11-2021

KEYWORDS:

Anti-inflammatory,
Chaturbeeja Arka,
Primary dysmenorrhoea,
Udavartha.

ABSTRACT

Dysmenorrhoea is the most common problem in adolescent gynaecology. It is related to significant absenteeism from school and poor academic performance. Primary dysmenorrhoea is widely prevalent in more than 50% of teenagers. Among *Yoniogas udavartha yonivyapath*, presents with painful menstruation and its main feature is relief of pain following discharge of blood, which is characteristic of primary dysmenorrhoea. The objective of treating primary dysmenorrhoea is to reduce pain, so that the patient is not restricted from attending her daily routine activities. Pharmacological strategies for Primary Dysmenorrhoea generally involve non-steroidal anti-inflammatory drugs or hormonal contraceptives which may have adverse effects. So, developing Ayurveda medicines with minimal adverse effects have significant relevance.

Chaturbeeja arka mentioned in *Chaturtha sathakam* of *Arka prakasha* consists of *Methika*, *Chandrashura*, *Kalaajaji* and *Yavani*. It has *Soolahara*, *Adhmanahara* and *Sameerajith* properties. Compared to *Kashaya kalpana*, *Arka kalpana* is required in lesser dosage, has higher patient compliance, has longer shelf life and does not require addition of preservatives. A pilot study was conducted in 5 diagnosed cases of Primary dysmenorrhoea. It was found to be effective in lower abdominal pain and associated low back ache. The current article is an attempt to explore the effect of *Chaturbeeja arka* in primary dysmenorrhoea.

INTRODUCTION

Dysmenorrhoea is a gynaecological disorder where there is severe cramping pain associated with menstruation which incapacitates a woman from her daily routine activities [1]. Dysmenorrhoea is of two types, Primary and Secondary. Primary dysmenorrhoea refers to menstrual pain without any pelvic pathology[2]. Secondary dysmenorrhoea is defined as painful menses related to an underlying pelvic pathology [2]. *Udavartha* mentioned in all classics as a *Yonivyapath*. It is a condition that presents with painful menstruation and its main feature is the relief of pain following outflow of menstrual blood, which is characteristic of primary dysmenorrhoea.

According to *Charaka Acharya*, it's purely predominated by *Vata dosa*. Aggravated *Vata* moves in reverse direction and discharges *Raja* with much difficulty. The woman feels relief immediately following the outflow of menstrual blood [3]. *Susrutha* and both *Vagbhatas* have mentioned about *Udavartha* in similar terms. Most teenagers are reluctant to take bitter Ayurvedic medicines like *Kashaya*. *Arka kalpana* is a more palatable dosage form compared to *Swarasa*, *Kalka* and *Kwatha* According to *Arka prakasha*, *Arkas* have the highest potency compared to *Swarasa*, *Kalka* and *Churna* [4]. *Chaturbeeja arka* is a suspension of distillate in water made from *Chaturbeeja* i.e., *Methika*, *Chandrasura*, *Kalajaji* and *Yavani*. *Chaturbeeja arka* is *Sooladhmanasameerajith*[5]. It is effective in abdominal pain, bloated abdomen and normalizes the functions of *Vata*.

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<https://doi.org/10.47070/ijapr.v9i10.2143>

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Table 1: Rasa, Guna, Veerya, Vipaka and Doshakarma

| Drug name | Rasa | Veerya | Guna | Vipaka | Dosha karma |
|----------------------------|-------------|--------|----------------|--------|--------------------------------|
| Methika ^[6] | Katu | Ushna | Laghu, Snigdha | Katu | Vatakaphahara |
| Chandrasura ^[7] | Katu, Tikta | Ushna | Laghu, Snigdha | Katu | Vatakaphahara |
| Kalajaji ^[8] | Katu, Tikta | Ushna | Laghu, Ruksha | Katu | Vatakaphahara Pittavardhaka |
| Yavanika ^[9] | Katu, Tikta | Ushna | Laghu | Katu | Vatakaphahara Pittavardhaka |

Methika (*Trigonella foenum graecum*) is reported to have anti-inflammatory, analgesic^[10] and anti-oxidant activity^[11]. Similarly *Chandrasura* (*Lepidium sativum*) has antidiarrheal, antispasmodic^[12] and anti-inflammatory activities^[13]. Studies show that *Kalajaji* (*Nigella sativa*) and *Yavani* (*Trachyspermum ammi*) has a significant *in vivo* anti-inflammatory^[14,15] activity.

A pilot study was conducted with 5 patients in the Government Ayurveda College, Tripunithura to study the effect of *Chaturbeeja arka* in Primary dysmenorrhoea.

METHODOLOGY

5 cases of Primary dysmenorrhoea included in this pilot study, were selected from the OPD of Prasuthi thantra Streeroga, Govt. Ayurveda College, Tripunithura.

Inclusion criteria- Females of age group 15-25 years with regular cycles having Primary dysmenorrhoea.

Exclusion criteria- Patients with secondary dysmenorrhoea.

Patient with irregular menstruation.

Patients with gastritis

Treatment of subjects

Name and details of the drug: *Chaturbeeja arka*

Table 2: Name and details of the drug

| Sl No | Sanskrit Name | Botanical Name |
|-------|--------------------|----------------------------------|
| 1 | <i>Methika</i> | <i>Trigonella foenum graecum</i> |
| 2 | <i>Chandrasura</i> | <i>Lepidium sativum</i> |
| 3 | <i>Kalajaji</i> | <i>Nigella sativa</i> |
| 4 | <i>Yavanika</i> | <i>Trachyspermum ammi</i> |

- **Dose:** 24ml *Arka* with equal quantity of water.
- **Dosing schedule:** Twice daily one hour before food. (7am & 7pm)
- **Route /mode of administration:** Oral
- **Duration of drug administration:** Starts 7 days before menstruation till 3rd day of periods for the following 3 consecutive cycles.
- **Follow up:** Follow up was done after the next menstruation without administration of the drug.
- **Assessment:** Patients were advised to report on the fourth day of menstrual cycle.

- They were assessed on the fourth day of menstruation in each three cycles during study period and 1 month follow up period.

Outcome variables: Lower abdominal pain and low back ache assessed by verbal descriptive scale

Verbal descriptive scale

Lower Abdominal Pain

1. Grade 0: No pain

2. Grade 1: Mild pain - Pain which is bearable without any drugs or medication and does not inhibit work performance

3. Grade 2: Moderate pain- Pain which is bearable with difficulty and relieved with hot water bag application or analgesics and inhibits but does not prohibit work performance.

4. Grade 3: Severe pain- Inability to bear pain, incapacitating from routine activities, has to take antispasmodic analgesics for relief.

Low back ache

1. Grade 0: Nil

2. Grade 1: Mild (no interference with daily routine)

3. Grade 2: Moderate (interference with daily routine-relief after medication)

4. Grade 3: Severe (interference in routine no relief after medication)

Case Series

Case 1- A woman aged 24 years reported at the OPD, complained of crampy lower abdominal pain and low back ache started just prior to menstruation and continued for one day. Her complaints started 2 years after menarche at the age of 14 years. Her menstrual cycle is with 28-30 days interval. She could not attend college during her periods and used analgesics for pain relief.

Case 2- A 25 year unmarried girl consulted our OPD. She had complaints such as severe lower abdominal pain 1 day prior and during first day of periods and also low back ache along with initiation of menstruation and relieved within 1-2 days. She gave a history of taking analgesics on and off for it and her mother has similar complaints.

Case 3- 18 year old married girl, complained of severe lower abdominal pain, low back ache, vomiting and giddiness during 1-2 days of periods. And got relieved

within 1-2 days. Started experiencing these complaints since 1 year after menarche. Pain is so severe, that she could not go out for study and spent 1-2 days completely lying on bed. There was a history of frequent hospital admission during menses with analgesic injection and IV infusion of fluids.

Case 4- A 18 year old girl, consulted our OPD with a 5 year history of severe lower abdominal pain with her menses. Pain begins with initiation of menstrual flow and lasts for 2 days. She also complained of low back ache and giddiness. Her cycles were regular with an

OBSERVATION AND RESULTS

Data Related to Clinical Picture- Lower Abdominal Pain

Table 3: Percentage distribution on the severity of lower abdominal pain (VDS)

| Lower abdominal pain | BT | | AT | | AF | |
|----------------------|-----------|------------|-----------|------------|-----------|------------|
| | Frequency | percentage | Frequency | percentage | Frequency | Percentage |
| No pain | 0 | 0 | 1 | 20 | 1 | 20 |
| Mild pain | 0 | 0 | 0 | 0 | 4 | 80 |
| Moderate pain | 0 | 0 | 4 | 80 | 0 | 0 |
| Severe pain | 5 | 100 | 0 | 0 | 0 | 0 |
| Total | 5 | 100 | 5 | 100 | 5 | 100 |

Data Related to Clinical Picture-Low Back Ache

Table 4: Percentage distribution on the severity of low back ache (VDS)

| Low back ache | BT | | AT | | AF | |
|---------------|-----------|------------|-----------|------------|-----------|------------|
| | Frequency | Percentage | Frequency | Percentage | Frequency | Percentage |
| Nil | 0 | 0 | 4 | 80 | 4 | 80 |
| Mild | 0 | 0 | 0 | 0 | 1 | 20 |
| Moderate | 1 | 20 | 1 | 20 | 0 | 0 |
| Severe | 4 | 80 | 0 | 0 | 0 | 0 |
| Total | 5 | 100 | 5 | 100 | 5 | 100 |

Assessment of Lower Abdominal Pain and Low Backache between Treatment Stages

Table 4: Assessment before treatment, after treatment and after follow up

| Parameter | Case 1 | | | Case 2 | | | Case3 | | | Case4 | | | Case5 | | |
|----------------------|--------|----|----|--------|----|----|-------|----|----|-------|----|----|-------|----|----|
| | BT | AT | AF | BT | AT | AF | BT | AT | AF | BT | AT | AF | BT | AT | AF |
| Lower abdominal pain | 3 | 0 | 0 | 3 | 2 | 1 | 3 | 2 | 1 | 3 | 2 | 1 | 3 | 2 | 1 |
| LBA | 3 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 3 | 2 | 1 | 2 | 0 | 0 |

(BT-Before treatment, AT-After treatment, AF-After Follow up)

DISCUSSION

As there is currently no permanent cure for primary dysmenorrhoea, Ayurveda management has a major role to play. Many drugs mentioned in our classical Yogas are not available nowadays. Usage of adulterants compromises the effectiveness of preparations. In *Arka kalpana* with minimum drugs maximum potency of the drugs can be obtained. Colourless appearance and palatability of *Arka* makes it acceptable even to children. Ayurvedic medicines like *Kashaya* need to be prepared by patients

interval of 28-30 days, lasts for 4-5 days. Used analgesics for pain relief. No relevant family history had reported.

Case 5- A 25 year old female with an 11 year history of dysmenorrhoea with onset of symptoms 2 years after menarche. Pain begins with initiation of menstrual flow and disappears completely within 24 hours. She reported several instances of absence from class. She used to take analgesics for pain relief and having family history of primary dysmenorrhoea.

themselves. Most patients find this difficult in their hectic daily schedule. Chemical preservatives such as sodium benzoate and its associated compounds are known to be carcinogenic in high doses. *Arka* has a shelf life of one year and there is no need of adding chemical preservatives.

Mode of Action of *Chaturbeeja Arka*

Vimarga gamana of *Apana vayu* is the basic pathology involved in *Udavartha*. Drugs which have the property to bring about *Anuloma gathi* of *Vata*

helps to relieve the pain in Primary dysmenorrhoea. All of the drugs are having *Katu vipaka* and *Ushna veerya*, which may have facilitated menstrual flow and enabled easy expulsion of menstrual blood without pain. Vitiated *Kapha* may obstruct the normal movement of *Vata* (*Avarana*) and cause a reversal of direction in its movement (*Prathiloma gathi*). *Katu vipaka* pacifies *Kapha* and removes the obstruction to movement of *Vata*. *Katu-Tiktha rasa* of *Chathurbeeja* is *Deepana-pachana* and effective in *Ajeerna* and *Agnimandhya*. *Methika*, *Chandrasura* and *Kalajaji* have emmenagogue action and increases menstrual flow, which may help in proper expulsion of *Raja* without pain. Most of the drugs, have antispasmodic and analgesic activity mediated through calcium channel blockade and may relieve pain by direct action on the myometrium^[16]. All individual drugs of *Chathurbeeja arka*, has significant anti-inflammatory activity and reduces arachidonic acid release and its conversion to pain inducing prostaglandins. The steroidal sapogenin of *Trigonella foenum graecum*, namely Diosgenin acts as cortisone and reduces anxiety^[17]. *Nigella sativa* Linn also had anti stress activity^[18] and stress is a risk factor for Primary dysmenorrhoea. *Chaturbeeja* is a good source of many minerals and vitamins. Low calcium levels increase spasm and contraction of the uterine muscles leads to pain following ischemia^[19]. Most of the drugs of *Chathurbeeja* contain Calcium, would be able to reduce spasm and relieve pain. *Arka* is *Laghu paki*, *Vyavayi* and *Vikasi* and can enter into tissues without undergoing *Paka*. *Chaturbeeja arka* has *Vata-kaphahara* activity and clear *Srothas* by relieving obstruction by *Kapha* and facilitates unimpeded movement of *Vata*. This *Arka* has a pH of 2.3. Acidic preparations are highly potent, absorbed quickly, and may have higher bio-availability^[20]. All these properties are beneficial in the management of lower abdominal pain and low back ache associated with primary dysmenorrhoea. From this pilot study it is understood that *Arka* can be effectively used for quick relief of pain in Primary dysmenorrhoea.

CONCLUSION

Many issues are encountered in the drug delivery system of Ayurvedic treatment like reduced palatability, high dosage, use of preservatives, unavailability of many herbs and high cost of medicines. This may be solved by incorporating lesser used formulations like *Arka* into clinical practice. *Chaturbeeja arka* mentioned in *Arka prakasha* by virtue of its *Sooladhmanasameerajith* properties relieves symptoms of Primary dysmenorrhea. Further studies with larger samples are required to conclusively prove the effect of *Chaturbeeja arka* which can be used safely and effectively in relieving pain associated with Primary dysmenorrhea.

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Cite this article as:

Aswani.K.J, Maya Balakrishnan, Jyothi. P.K. Chaturbeeja Arka in Primary Dysmenorrhoea- A Case Series. International Journal of Ayurveda and Pharma Research. 2021;9(10):73-77.

<https://doi.org/10.47070/ijapr.v9i10.2143>

Source of support: Nil, Conflict of interest: None Declared

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