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"KASHTARTAVA (PRIMARY DYSMENORRHOEA): AYURVEDIC PATHOPHYSIOLOGY AND CLINICAL EVIDENCE FOR HERBAL AND PANCHAKARMA INTERVENTIONS — A NARRATIVE REVIEW"

Dr. Abhay Gandhi[1]

AFFILIATIONS:

1. Director, Ira Consultancy & Research Organisation, Bhosari, Pune, Maharashtra 411026

CORRESPONDENCE:
Dr. Abhay Gandhi

EMAIL ID:
director@icro.co.in

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ABSTRACT:

Background: Primary dysmenorrhoea is the most common gynaecological complaint of young women and a leading cause of school and work absenteeism. Conventional first-line therapy with nonsteroidal anti-inflammatory drugs (NSAIDs) and hormonal contraceptives is effective for many women, but a proportion do not respond, cannot tolerate long-term use, or prefer non-hormonal options. Ayurveda describes painful menstruation mainly under Udavartini yonivyapad and the contemporary term Kashtartava, both centred on disturbed Apana vata. **Objective:** To review the classical Ayurvedic understanding of Kashtartava, correlate it with current knowledge of prostaglandin-mediated uterine pain, and summarise the clinical and experimental evidence for Ayurvedic herbal and Panchakarma interventions. **Methods:** Classical texts (Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya) were reviewed for descriptions of painful menstruation and its management. PubMed was searched for reviews, randomised controlled trials, meta-analyses, protocols and case reports on primary dysmenorrhoea, Ayurvedic interventions and herbs used in Ayurvedic practice. Findings were synthesised narratively. **Results:** The classical description of Udavartini yonivyapad, in which obstructed and reversed movement of Vata produces painful, difficult menstrual discharge relieved after flow, corresponds closely to the modern model of prostaglandin-driven uterine hypercontractility and ischaemia. Meta-analyses support ginger and members of the Apiaceae family, including dill (Shatapushpa) and fennel (Mishreya), as being superior to placebo and broadly comparable to NSAIDs for pain intensity, although trial quality is generally low. Evidence for classical formulations and Basti therapy is limited to small open studies, case reports and ongoing trials. **Conclusion:** Ayurvedic Vatanulomana and Shulaprashamana strategies are biologically plausible and partly supported for primary dysmenorrhoea. Adequately powered, placebo-controlled trials of standardised classical formulations and Basti protocols are now required.

KEYWORDS: Kashtartava, Udavartini yonivyapad, Apana vata, primary dysmenorrhoea, Basti, Shatapushpa

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INTRODUCTION

Primary dysmenorrhoea is defined as painful menstrual cramping in the absence of identifiable pelvic pathology. It affects up to half of menstruating women and is a major cause of reduced quality of life and absenteeism from school and work[1]. Pain typically begins shortly before or with the onset of flow, lasts one to three days, and is often accompanied by nausea, diarrhoea, fatigue and headache. Because many women regard the pain as a normal part of menstruation, the condition remains under-diagnosed and under-treated[2].

The current biomedical model attributes primary dysmenorrhoea to excessive or imbalanced production of prostanoids, particularly prostaglandin F2-alpha, by the secretory endometrium at the time of shedding. These mediators produce frequent, dysrhythmic and high-pressure uterine contractions, reduce uterine blood flow and sensitise peripheral nerve endings, so that ischaemia and anaerobic metabolites trigger pain[1,3]. This mechanism explains why cyclooxygenase inhibitors such as ibuprofen, naproxen and mefenamic acid, and combined oral contraceptives that suppress endometrial development, form the evidence-based first line of management[1,3].

Despite their efficacy, these options do not suit every patient. Some women respond only partially, and the relief offered by these drugs is often temporary while prolonged use may cause adverse effects[4]; shared decision making about the choice of therapy is therefore emphasised[3]. Interest in complementary and traditional approaches is therefore high, and several systematic reviews have now examined herbal treatments for menstrual pain[5–9].

Ayurveda has a long-developed vocabulary for menstrual disorders. Painful menstruation is described principally under Udavartini yonivyapad, one of the twenty gynaecological disorders listed in the classical texts, and Ayurvedic gynaecologists today commonly use the term Kashtartava (literally, difficult or painful menstruation) for primary dysmenorrhoea[10–13]. The aim of this review is to present the classical concepts of Kashtartava in a form accessible to an integrative readership, to correlate them with current pathophysiology, and to summarise what the published evidence does and does not show for Ayurvedic interventions.

METHODOLOGY

This narrative review was prepared in two parts. First, the primary classical texts of Ayurveda, namely Charaka Samhita (Chikitsa sthana, chapter 30), Sushruta Samhita (Uttara tantra, chapter 38) and Ashtanga Hridaya (Uttara sthana, chapter 33), were studied with their standard commentaries for descriptions of painful menstruation, its causes, pathogenesis and treatment[10–12]. Second, PubMed was searched for literature published up to October 2026 using combinations of the terms dysmenorrhoea, dysmenorrhea, Ayurveda, Ayurvedic, herbal medicine, ginger, fennel, dill, Apiaceae, Basti and Udavartini. Reviews, meta-analyses, randomised controlled trials, trial protocols, experimental studies and case reports were considered. Every reference cited in this article was checked against its PubMed record for authors, title, journal, year, volume, pages and digital object identifier. Retracted publications identified during the search were excluded. The findings are synthesised narratively rather than statistically.

CLASSICAL AYURVEDIC UNDERSTANDING OF PAINFUL MENSTRUATION

1. Artava and its physiological basis

In Ayurveda, Artava denotes both menstrual blood and the reproductive potential of the woman. Normal menstruation is described as occurring at monthly intervals, lasting about five days, being neither excessive nor scanty, free of pain and burning, and having the colour of rabbit's blood or lac dye[11]. The downward movement of menstrual blood, like that of urine, faeces and the foetus, is governed by Apana vata, the subtype of Vata located in the pelvis. Any disorder that obstructs or reverses the normal downward movement (Anuloma gati) of Apana vata is therefore expected to disturb menstruation, and pain (Shula) is regarded as the cardinal sign of vitiated Vata.

2. Udavartini yonivyapad

Charaka describes Udavartini yonivyapad as a condition in which suppression of natural urges causes Vata to move upward instead of downward. The upward-moving Vata pushes the menstrual blood back, so that it is expelled with great difficulty and pain; the woman feels relief immediately after the discharge[10]. Sushruta and Vagbhata give comparable descriptions and emphasise the frothy, painful nature of the flow[11,12]. The key clinical features, namely cramping pain before and during flow, difficulty in expulsion

and relief once bleeding is established, closely match the course of primary dysmenorrhoea.

The classical causes (Nidana) include habitual suppression of urges (Vega dharana), excessive intake of dry, cold, light and astringent foods, irregular meals, excessive physical strain, sleeplessness, fasting and emotional stress, all of which aggravate Vata[10,13]. Several of these factors, notably psychological stress and irregular habits, are echoed in modern reviews that link dysmenorrhoea with psychological stress and recommend lifestyle modification as part of management[2].

3. Samprapti (pathogenesis)

The pathogenesis can be summarised as follows. Vata-aggravating causes vitiate Apana vata in the pelvis. The vitiated Vata loses its normal downward direction (Pratiloma gati), becomes obstructed (Avarana) and contracts the reproductive channels (Artavavaha srotas). Menstrual blood is retained and expelled with difficulty, producing Shula. Kapha may accompany Vata and produce heaviness and clots, while Pitta involvement adds burning and inflammatory features[10,13].

4. Correlation with modern pathophysiology

The classical concept of obstructed and reversed Vata has clear functional parallels in the biomedical model. Uterine hypercontractility with raised basal tone, dysrhythmic contractions and reduced blood flow[1] corresponds to the description of contracted channels and difficult expulsion. The relief that follows the onset of free flow fits the observation that menstrual prostanoid release, and therefore pain, is concentrated in the first days of flow[1,3]. Retrograde movement of menstrual blood, suggested by the term Udavarta, is also recognised biomedically, although it is more relevant to endometriosis and secondary dysmenorrhoea than to the primary condition[14]. These parallels should be treated as heuristic rather than literal: they help clinicians translate Ayurvedic reasoning into testable mechanisms such as reduced prostaglandin synthesis, uterine smooth-muscle relaxation and analgesia.

PRINCIPLES OF AYURVEDIC MANAGEMENT

The classical treatment of Udavartini yonivyapad aims to restore the normal downward movement of Apana vata (Vatanulomana) and to relieve pain (Shulaprashamana). Charaka advises oleation (Snehana) and sudation (Svedana), followed by unctuous enemas (Anuvasana basti), decoction enemas (Niruha basti) and intrauterine or intravaginal instillation (Uttara basti) with medicated oils and ghee, together with milk processed with Vata-pacifying drugs such as Dashamoola[10]. Diet and lifestyle measures are integral: warm, freshly cooked, unctuous food; avoidance of urge suppression; regular sleep; and rest during menstruation as described in Rajaswala paricharya[10,13].

In current Ayurvedic gynaecological practice, these principles are translated into four broad groups of interventions: single herbs and simple combinations with carminative and antispasmodic action; classical compound formulations; Panchakarma procedures, especially Basti; and dietary and lifestyle regulation. The evidence for each group is summarised below.

EVIDENCE FOR HERBAL INTERVENTIONS

1. Ginger (Shunthi, *Zingiber officinale*)

Shunthi is described in Ayurveda as a digestive, carminative and Vata-Kapha-pacifying drug and is commonly included in formulations for Shula. It is also the most studied herb for primary dysmenorrhoea. An early systematic review of six randomised trials found oral ginger more effective than placebo in reducing pain severity, with a weighted mean difference of about 1.5 cm on a 10 cm visual analogue scale, and no significant difference from mefenamic acid; the authors cautioned that the trials were small and methodologically weak[6]. A 2024 systematic review including 24 studies, 12 of them in meta-analysis, confirmed that ginger reduced both pain intensity and pain duration compared with placebo and found no difference between ginger and NSAIDs for pain intensity, while noting high heterogeneity, risk of bias and poor reporting of safety outcomes[8]. A further meta-analysis of nine trials with 647 patients found that cinnamon, fennel and ginger each reduced pain intensity compared with placebo[7].

2. Apiaceae herbs: Shatapushpa, Mishreya, Yavani and related drugs

Several Vata-pacifying carminative herbs used in Ayurvedic gynaecology belong to the Apiaceae family. These include Shatapushpa (*Anethum sowa*, dill), Mishreya (*Foeniculum vulgare*, fennel), Yavani (*Trachyspermum ammi*, ajwain) and Jiraka (*Cuminum cyminum*, cumin). Shatapushpa in particular is given

a dedicated chapter in Kashyapa Samhita for menstrual and reproductive health[15]. A protocol registered in PROSPERO set out a systematic review of these herbs in primary dysmenorrhoea[16], and the completed review and meta-analysis, which searched PubMed, CENTRAL, Scopus and the Ayurveda-specific AYUSH Research Portal and DHARA databases, included 14 randomised trials[9]. Pooled data from seven trials showed a statistically significant benefit of Apiaceae herbs over standard treatments with low heterogeneity, and subgroup analysis of fennel and dill against mefenamic acid or ibuprofen also favoured the herbs. Risk of bias was low for randomisation and outcome measurement in placebo-controlled trials of anise and fennel, but trials against active comparators raised concerns over deviations from intended interventions and selective reporting[9]. These findings provide the strongest current support for an Ayurvedic herb group in primary dysmenorrhoea, while still falling short of definitive evidence.

3. Other herbs used in Ayurvedic practice

Broader reviews of Ayurvedic and herbal treatments for female reproductive health and dysmenorrhoea describe the use of turmeric, ashwagandha, Shatavari, cardamom, chamomile and saffron, and attribute their benefit to anti-inflammatory, antispasmodic and analgesic constituents such as gingerols, terpenoids, flavonoids and coumarins[5,17]. These reviews draw on a mixture of experimental and clinical studies, and their authors stress the need for further rigorous research before firm conclusions can be drawn[5,17]. A 2025 randomised trial of a standardised Shatavari extract that reported improvement in perimenopausal menstrual symptoms has since been retracted and is not relied upon here.

Ashoka (*Saraca asoca*), traditionally used as a uterine tonic, is mostly studied for heavy menstrual bleeding rather than for pain. In a recent open-label study of an Ashoka-based syrup in 228 women with heavy menstrual bleeding, 68% of participants reported complete resolution of associated dysmenorrhoea after 90 days[18]. The absence of a control group means this observation is hypothesis-generating only.

EVIDENCE FOR CLASSICAL COMPOUND FORMULATIONS

Classical compound formulations commonly prescribed for Kashtartava include Rajahpravartini vati, Hingvashtaka churna, Dashamoola kvatha, Kumaryasava, Ashokarishta and preparations processed in milk (Ksheerapaka). Despite wide clinical use, published controlled evidence is sparse.

Rajahpravartini vati, a classical herbomineral formulation indicated for painful and obstructed menstruation, has shown preliminary therapeutic potential but had not, until recently, been tested in a rigorous placebo-controlled design. A double-blind, randomised, placebo-controlled trial in 100 adolescent girls and young women aged 12 to 24 years is now in progress at a Central Council for Research in Ayurvedic Sciences institute. Participants receive 500 mg twice daily or placebo from three days before to three days after the expected onset of menses for three cycles, with a validated multidimensional dysmenorrhoea score as the primary outcome; results are expected in 2028[4]. This trial is an important step towards generating evidence of the quality required for integration into mainstream care.

Ksheerapaka, the classical method of processing drugs in milk and water until only the milk remains, combines Vata-pacifying drugs with the nourishing and unctuous properties of milk. A 2026 review argued that Ksheerapaka has analgesic, anti-inflammatory and tissue-nourishing actions relevant to Udavartini yonivyapad, but found that dysmenorrhoea-specific clinical evidence remained limited. It also identified practical problems with the classical liquid form, namely poor stability, variable dosing and low adherence, and proposed reformulation as a standardised dried powder[13]. Such pharmaceutical development, paired with stability and quality testing, will be essential if classical formulations are to be evaluated in multicentre trials.

PANCHAKARMA AND EXTERNAL PROCEDURES

Basti is regarded in Ayurveda as the principal treatment for Vata disorders, and Charaka specifically prescribes Anuvasana, Niruha and Uttara basti for Udavartini yonivyapad[10]. Clinically, sequential medicated enema courses such as Yoga basti (a course of eight alternating unctuous and decoction enemas) are given in the pre-menstrual phase over consecutive cycles. Published evidence consists mainly of case reports and small open studies. In one published case report, two courses of Yoga basti with oral Ku-

beraksha vati relieved the acute pain of a large endometrioma in a young woman, avoided surgery and were followed by conception and an uncomplicated term delivery[14]. Although this concerns secondary rather than primary dysmenorrhoea, it illustrates the rationale for Basti in Vata-dominant pelvic pain and suggests that seasonal Basti may help women with recurrent dysmenorrhoea[14].

Local and external measures, including abdominal oil application (Abhyanga) followed by hot fomentation (Svedana), are inexpensive, low-risk and consistent with the modern use of topical heat for menstrual pain[2]. Experimental work on related traditional procedures is also emerging; in a rat model of primary dysmenorrhoea, wet cupping, a procedure related to Raktamokshana, reduced writhing behaviour, improved the prostaglandin F2-alpha to prostaglandin E ratio and lessened uterine inflammation, with effects partly comparable to ibuprofen[19]. Such animal findings cannot be extrapolated directly to women but support further mechanistic and clinical study.

DIET, LIFESTYLE AND RAJASWALA PARICHARYA

Ayurveda places great weight on conduct during menstruation. Rajaswala paricharya recommends rest, light and warm food, avoidance of strenuous exertion and emotional disturbance, and avoidance of urge suppression during the days of flow[10]. The classical emphasis on avoiding dry, cold and irregular diets and on regular sleep is consistent with modern advice on lifestyle modification, and with the inclusion of lifestyle modification and dietary supplements among recognised non-pharmacological options[2]. Structured trials of Ayurvedic dietary and lifestyle regimens as stand-alone or adjunctive interventions for primary dysmenorrhoea are, however, lacking.

DISCUSSION

This review shows that the classical Ayurvedic account of Udavartini yonivyapad provides a coherent framework for understanding primary dysmenorrhoea. The emphasis on obstructed downward movement of Apana vata, contraction of the reproductive channels and relief with free flow parallels the biomedical description of prostaglandin-mediated uterine hypercontractility and ischaemia[1,3,10]. The therapeutic principles of Vatanulomana and Shulaprashamana map onto measurable actions, namely smooth-muscle relaxation, anti-inflammatory effects and analgesia, that can be tested in clinical and experimental studies.

The strength of the evidence, however, varies widely by intervention. The best-supported options are single herbs widely used in Ayurveda, especially ginger and the Apiaceae herbs dill and fennel, for which meta-analyses suggest benefit over placebo and parity with NSAIDs for pain intensity[6–9]. Even here, small sample sizes, high heterogeneity, short follow-up and inadequate safety reporting limit confidence[8,9]. Classical compound formulations and Panchakarma procedures, which represent the distinctive core of Ayurvedic practice, rest largely on case reports, open-label studies and traditional use[4,13,14]. The current placebo-controlled trial of Rajahpravartini vati[4] is therefore a welcome development.

Several methodological priorities follow. First, trials should enrol women with clinically confirmed primary dysmenorrhoea after exclusion of secondary causes, and should consider stratification by Prakriti and Dosha predominance, since Ayurveda expects different responses in Vata, Pitta and Kapha presentations. Second, interventions must be standardised and characterised chemically, and for herbomineral formulations the safety of mineral components should be monitored with appropriate laboratory tests. Third, outcomes should include validated multidimensional pain scores, rescue analgesic use, absenteeism and quality of life, with follow-up for at least three menstrual cycles after treatment. Fourth, Basti protocols need pragmatic designs, since blinding is difficult, and could be evaluated against standard care with blinded outcome assessment. Finally, researchers should check the status of the evidence they rely on; the retraction of a widely cited Shatavari trial during the preparation of this review is a reminder that apparently favourable data must be verified.

From a clinical perspective, Ayurvedic interventions can reasonably be offered as adjuncts or alternatives for women who are unresponsive to, intolerant of or unwilling to use NSAIDs or hormonal therapy, provided secondary dysmenorrhoea has been excluded. Persistent or progressive pain, pain unresponsive to treatment, abnormal bleeding or pain beginning after several years of painless cycles should prompt evaluation for endometriosis, adenomyosis, fibroids and pelvic inflammatory disease[1,3].

CONCLUSION

Kashtartava, described classically as Udavartini yonivyapad, offers an Ayurvedic model of primary dysmenorrhoea that aligns closely with current pathophysiology. Herbs such as Shunthi, Shatapushpa and Mishreya have the most supportive, though still imperfect, clinical evidence, while classical formulations and Basti therapy remain promising but insufficiently tested. Well-designed, adequately powered trials of standardised Ayurvedic interventions, with careful attention to safety and patient-reported outcomes, are needed before these approaches can be firmly recommended in integrative gynaecological care.

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