INTRODUCTION

Dysmenorrhea is the most common gynecological problem faced by women during their adolescence which causes significant discomfort & anxiety for the woman as well as family. A systematic review of studies in developing countries performed by Harlow and Campbell (2002) has revealed that about 25-50% of adult women and about 75% of adolescents experience pain during menstruation, with 05-20% reporting severe dysmenorrhea or pain that prevent them from ensuing day-to-day activities (Andrew, 1999). Today stress is becoming an inescapable part of modern life. Menstruation is a natural event as a part of the normal process of reproductive life in females. Due to today’s sedentary lifestyle and lack of exercise, dysmenorrhea is becoming today’s burning problem throughout the world which causes discomfort for women’s daily ensuing day to day activities and may result in missing work or school, inability to participate in sports or other activities. In the treatment of dysmenorrhea, no addictive, analgesics and anti-inflammatory drugs, which also produce headache, dizziness, drowsiness and blurred vision. In Ayurvedic classics Kashtartava (dysmenorrhea) is not described as a separate disease because women were not suffering much from this problem in that era because of pin pointed Ritucharya & Rajasvalacharya. According to Ayurvedic text there are many other diseases in which Kashtartava is considered and is described as a symptom.

2. Artava

A substance of the body which flows out at the specific period of time is called as Artava. A substance which flows out from Apatyamarga without pain, burning and sliminess is known as Artava. Apana Vayu and Vyana Vayus mainly responsible for Artava Utpatti.

3. Kashtartava

Kashtartava (dysmenorrhea) is not separately described as a disease. But there are many diseases in which Kashtartava is considered and described as a symptom.
Nirukti of Artava

Ritu- Particular period Bhavam- to happen/to occur

A substance of the body which flows out at the specific period of time is called as artava. The term Kashtartava is made of two words- Kashta and Artava

Kashta: Painful, Difficult, troublesome, ill, forced, wrong, unnatural, a bad state of Thing.

Artava: Belonging to reasons, period of time, menstruation.

Kashtena - with great difficulty. Thus the word Kashtartava can be expressed as “Kashtenamuchyatiiti kashtartava” i.e. the condition where Artava is shaded with great difficulty and pain istermed as “Kashtartava”.

Kashtartava as a symptom References

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Paryaya (Synonyms)

In classics, certain terms are mentioned to denote Artava, meaning of these terms changes as per references and context. Some terminologies indicate menstrual blood, ovum or both, at various places according to the concerned topic. But commentator Arunadatta (Charaka, 2003) has specially indicated in his commentary Artava as menstrual blood.

4. Sampraptighatakha

Dosha Vata Pradhana Tridosha

Vata Vyana, Apana
Pitta Ranjaka, Pachaka
Kapha as AnubandhitaDosa
Dhatu Rasa, Rakta, Artava
Upadhatu Artava
Agni Jatharagni, Rasagni, Raktagni
Srotasa Rasa, Rakta and ArtavavahaSrotasa
Srotodushi Sanga and Vimaragamana
Udbhavasthana Amapakvashaya
Rogamarga Abyantara
SthanaSamshraya Garbhashaya
VyaktiSthana Garbhashaya

Rajasrava Kala (menstruation)

In this period the stuff accumulated in the uterus during the previous period of fertility is eliminated. The Raja, which is accumulated in the uterus after Ritukala, is termed as “Purana Rajas”. This accumulated Raja is eliminated from the uterus during Rajakala. (Ch./sha./4/7) (Sushruta, 2000)

Role of Doshas on Rajasrava

The phase is influenced mainly by Vata. It is actually the Pitta Prakopa which starts this phase. As soon as menstruation starts, Pittaprapkopa starts comming to a stage of Pittashama. Vata plays its role throughout the phase. But as Pitta decreases Kapha comes into play and a stage of Kaphachaya comes. The regeneration of endometrium starting during menstruation can be easily understood by this stage of Kaphachaya

Ayurvedic concept of pain related to Kahtartava

Kashtartava is a disease of reproductive tract (Yoni Roga) situated in the pelvic region. This region consider as the one of the main place of Vata Dosh. (Su./su./21/6) (Chen et al., 2000)

More over Acharya Charaka (Ch./chi./30/115-116) (Parazzini et al., 1994) has mentioned none of the gynecological disease can be arise without affliction of aggravated Vata. By this it shows disease Kashtartava shows strong relationship with Vata dosha by its origin place and the system it belong to. It is well known that without association of Vata there cannot be pain. (Su./su./17/8) (Montero et al., 1996) Vata is the main responsible factor, though other doshas only be present as
Anubandhi to it. So pain is produced due to vitiation of only vata dosha or in combination with other Doshas.

**Characteristics of pain in Kashtartava**

The nature of pain not only signifies the intensity but suggests the pathology behind its origin also. As far as Kashtartava is concerned, the following types of Vataja Vedana are complained of.

**Varti**—Any wrapped round, a swelling formed by internal rupture. Varti therefore means pain which resembles pain associated with internal rupture of pain arising if an organ is wrapped around itself. According to the pathology of Kashtartava any obstruction in the Uterus causes Vataprakopa. Here pain is due to that type of Vataprakopa condition which tries to overcome the obstruction repeatedly.

**Toda**—Striking pain, hitting or bruising pain. In case of Vata Prakopa which arises from obstruction to the way of Apana this type of pain can be arises. Here the pain appears, because of the striking or hitting of Vata against its boundaries. Soon as Vata gets an outlet, the pain disappears.

**Bheda**—Breaking, splitting, dividing, separating. pain which resembles the pain of breaking up of tissues, or separation of tissues. Here the pain is constant but more severe than the Toda type of pain. Vataprakopa arising from Dhatukshaya and giving rise to increased Rukshata and Kharata (dryness) is responsible for Bheda type of pain.

**Purvarupa**

As the disease Kashtartava is not mentioned as an individual disease in our classics. So no Purvarupa has been mentioned for the disease. But it can be assumed that same pridomal symptom may manifest as this is a condition caused by vitiation of Vata associated all 03 doshas. This vitiation of Doshas cannot be at once and should contain some features where as from very beginning of this vitiation. In Kashtartava mainly Vata Dosha becomes vitiated and Purvarupas of Vata Vyadhi is said to be Ayyakta (Ch./chi.//28/19), so Purvarupa of Kashtartava also Ayyakta.

**Rupa**

Rupa may be defined as the absolute revelation of the disease. This is the Vyakti stage under Satkriyakala concept of Sushruta. The characteristic display of the signs and symptoms of the disease are called Lakshanas. With the course of disease i.e. progress orregresses, the Rupa also fluctuate. But cardinal feature of Dysmenorrhoea i.e. pain and discomfort during menstruation is also present with it. As in this disease no clear cut Rupa is mentioned thus, it may be postulated as follows keeping base line of Artava Dushti. Other associated symptoms can be taken as the features other than the pain told by Acharyas in description of many diseases which visible dysmenorrhoea up to some or great extent. Among the some features are general while others are specific to a particular condition.

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Ayurvedic concept of pain related to Kashtartava

Acharya Charaka [Rajan, 2004] has mentioned none of the gynecological disease can be arise without affliction of aggravated Vata. Vata is the main responsible factor, though other doshas only be present as Anubandhi to it. So pain is produced due tivation of only vatadosha or in combination with otherDoshas.

Modern Review

Definitions of Menstruation

Menstruation is a function peculiar to women and the higher apes. It may be define asa “periodic and cyclic shedding of prostegestational endometrium accompanied by lossof blood”. It takes place at approximately 28-days interval between the menarche andmenopause (David L.lolive, 2009). Menstruation is the visible manifestation of cyclic physiologic uterine bleeding due toshedding of the endometrium following invisible interplay of hormones mainlythrough hypothalamo-endometrial axis (Bram Regal, 2009).

Hormonal regulation of menstrual phase

Whole menstrual cycle is controlled by the hormones which secreted by the anteriorpituitary and the ovaries. It is somewhat hard to explain physiological changes ofmenstrual phase apart from menstrual cycle. But for the better understand of effect ofhormonal levels on Dysmenorrhea only menstrual phase changes has being discussed. Two days prior to onset of menstruation, the secretion of large quantity ofprogesterone and estrogen from corpusluteum inhibit the anterior pituitary. Thepituitary gland suddenly stops secreting FSH and LH. In the absence of LH and FSH, the corpusluteum is not activated. The secretary function of the corpusluteum is stopped; there is sudden stoppage in secretion of progesterone and estrogen. The sudden withdrawal of secretion of these ovarian hormones causes the destructive changes in the uterus and menstruation occurs.

<table>
<thead>
<tr>
<th>Hormone</th>
<th>Follicular phase</th>
<th>Ovulation</th>
<th>Luteal phase</th>
<th>Menstrual phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSH</td>
<td>5-15mIU/ml</td>
<td>12-30</td>
<td>2-9</td>
<td>3-15 mIU/ml</td>
</tr>
<tr>
<td>LH</td>
<td>6-14mIU/ml</td>
<td>25-100</td>
<td>2-13</td>
<td>3-12mIU/ml</td>
</tr>
<tr>
<td>Estradiol E2</td>
<td>100/200 pg/ml</td>
<td>300-500</td>
<td>100-200</td>
<td></td>
</tr>
<tr>
<td>Progesterone</td>
<td>2-3ng/ml</td>
<td>-</td>
<td>5-15ng/ml</td>
<td></td>
</tr>
</tbody>
</table>

Hormonal level in various phases of menstrual cycle (Plasma levels) (U.S. National Institute of Health, 2009)

Component of pain sensation (Eby, 2007)

Pain sensation has got two components

1. Fast pain
2. Slow pain

Whenever a pain stimulus is applied, first a bright, sharp and localized pain sensation is produced. This is called fast pain. The fast pain followed by a dull, diffused and unpleasant pain (slow pain). The receptors for both the component of pain are same, i.e. the free nerve endings. But, the afferent nerve fibers are different. The fast pain sensation is carried by Aδ (gamma) fibers and the slow pain sensation is carried by C type of nerve fibers. This A and C type of nerve fibers are named according to the Erlanger Gasser classification. The velocity of impulse through a nerve fiber is directly proportional to the thickness of the fibers. Type A gamma nerve fibers of 5-6μ diameter and conduction velocity is 15-30(meters/second). Type C fibers are unmyelinated, less than 1.5μ in diameter and velocity of conduction is 0.5-2(meters/second) (Proctor and Farquhar, 2006).

Center for pain sensation

The center for pain sensation is in the post central gyrus of the parital cortex. Fibers reaching hypothalamus are concerned with arousal mechanism due to pain stimulus. Pain control system in brain- this block the pain impulses before entering the brain. The neurotransmitters involved in inhibition of pain by control system in brain are serotonin and opioid receptor substances – endorphin, enkephalin anddynorphin (Harel et al., 1996).

Innervations of pain sensation from uterus (Sembulingam, 2003)

All the internal organs of reproduction, including upper vagina, together with the urinary apparatus, rectum and colon, have only an autonomic innervations. Theautonomic nerves to these carry both sensory and motor fibers, adrenergic and cholinergic. Nerve supply of the uterus is derived principally from sympathetic nerve system.

Definition

The condition Dysmenorrhea has being defined in many ways. Text book of Gynecology (Dutta D.C., 2007) (JoJia et al., 2006) has defined Dysmenorrhea as painful menstruation of sufficient magnitude so as to incapacitate day today activity. Shaw’s Text Book of Gynecology (Shaw’s, 2004) (Ostad et al., 2001) says Dysmenorrhea means painful cramping pain accompanying menstruation. Dysmenorrhea refers to the chronic, cyclic pain or discomfort in the pelvic region during a menstrual period. (Rao, 2008, 38) (Speroff et al., 1999)

Types of dysmenorrhea

Dysmenorrhea of two main types

Primary (idiopathic/ spasmodic/ true Dysmenorrhea) – is a pain which is of uterine origin and directly linked to menstruation but no visible pelvic pathology.
Secondary Dysmenorrhea – a pain which is associated with uterine or pelvic pathology.

Other types

Congestive Dysmenorrhea – is used in relation to secondary Dysmenorrhea, as it is generally associated with pelvic inflammatory disease or endometriosis. The pelvic discomfort is evident a few days before the menstruation ensues and following which pain disappears rapidly.

Membranous Dysmenorrhea – this is a very rare condition with a familial incidence in which the endometrium is shed as a cast at the time of menstruation. The passage of the cast is accompanied by painful uterine cramps. It has been proposed that this phenomenon may be due to the deficiency of tryptic ferment that is normally secreted in the endometrium (Rajan, 2004).

Ovarian Dysmenorrhea – this condition is attributed to degeneration of the ovarian nerve or to the sclerocystic condition of the ovary. The pain usually appears 2-3 days before menstruation. Character of pain is continuous, dull and is distributed to either one or both quadrants supplied by T10 to L1 segments. (Dysmenorrhea and use of oral contraceptives in adolescent women attending a family planning clinic, 1992)

For the present study only primary Dysmenorrhea has been considered.

Primary dysmenorrhea

Definition

Dysmenorrhea resulting from a functional disturbance and not to inflammation, growths, or anatomical factors. Also called essential Dysmenorrhea (Proctor et al., 2004). (Stedmen medical dictionary 2002) The painful menses in women at the onset of menstruation with normal pelvic anatomy, in the absence of any identifiable pelvic disease. (Rao, 2008)

Differential diagnosis (Andrew and Coco, 1999; Emans et al., 2005)

The most important differential diagnosis of primary Dysmenorrhea is secondary Dysmenorrhea.

Secondary Dysmenorrhea

- Endometriosis
- Adenomyosis
- Uterine myoma
- Endometrial polyps
- Obstructive malformations of the genital tract

Other causes of pain

- Chronic pelvic inflammatory disease
- Pelvic adhesions
- Irritable bowel syndrome
- Inflammatory bowel disease
- Interstitial cystitis

Sudden onset of Dysmenorrhea

- Pelvic inflammatory disease
- Unrecognized ectopic pregnancy
- Spontaneous abortion

Treatment as Per Ayurvedic Classics

1. These disorders (gynecological disorders) do not occur without vitiation of Vata, thus first of all Vata should be normalized, and only then treatment for other doshas should be done (Srikantamurthy et al., 1998).

2. In all these gynecologic disorders, after proper oleation and sudation, emesis etc. all five purifying measures should be used. Only after proper cleansing of dosas though upper and lower passages, other medicines should be given. These emesis etc. cleansing measures cure gynecologic disorders in the same way as they cure the diseases of other systems (Sharma et al., 2003).

3. In menstrual disorders caused by Vata Dosha, the specific treatment prescribed for suppressing that particular Dosha should be used. Recipes prescribed for Yoni Rogas and Uttarbasti etc. should also be used after giving due consideration to the vitiated Dosha (Srikantamurthy et al., 2001)

4. Uncutous, hot, sour and salty articles should be used for the relief from menstrual disorders due to Vata. Sweet, cold and astringent substances for the purification of Pitta and hot, dry and astringent for Kapha (Sharma et al., 2004).

5. For Avrita Apana Vayu, treatment should be Agnideepaka, Grahi, Vāta, Anulomana and Pakvashaya Shuddhikara (Kumar and Malhotra, 2008).

Treatment Specific treatment (Beckman, 2004)

- Sneha karma (oleation) with Traivrita sneha.
- Sweda karma (hot fomentation).
- Oral use of Dashamoola ksheera.
- Vasti(enema) with Dashamoola ksheera.
- Anuvasana vasti (oil enema), Uttar vasti (intra uterine oil instillation) with Trividrita sneha.
- Poultice made of pasted Barley, wheat, kinva, Kusta, Shatapushpa, Priyangu, Bala.
- Intake of sneha in oral form.
- Sweda with milk.
- Sneha in the form of Anuvasana vasti & Uttar vasti.
- All other measures capable of suppressing the vata.

Rajah pravartini vati (Drife and Magowan, 2004), Kaseesadi vati, Dasha moola Trivrit taila (Ashtanga sangraha and Uttara tantra, ?) for oral vasti. Vata is responsible for all yoni rogas especially of Uddavartini. In Ayurveda various treatment modalities are mentioned for the treatment of vata rogas. Among them vasti is the better treatment modality for vata (Charaka samhitha sutra sthana, ?). Vasti is of two types based on the drug taken. Niruha or kashaya vasti in which decoction is taken, Anuvasa or sneha vasti in which oil is taken as main drug. Matra vasti is a sub-type of Anuvasana vasti.

Probable mode of action of matra vasti

Matra vasti has both local & systemic affects. It causes Vatanulomana thereby normalizing Apana vata. Gut is a sensory organ consisting of neural, immune & sensory detectors and cells, and provides direct input to local (intra mural) regulatory systems and information that passes to CNS or other organs. Vasti may stimulate the enteric nervous system and thus it can influence CNS and all bodily organs. Vasti may act on the neurohumoral system of body by stimulating CNS through ENS. It thereby restores the physiology at molecular level. It can also act on the inflammatory substances like prostaglandins and vasopressin etc. vasti may also help to excrete increased prostaglandins. Visceral afferent stimulation may result in activation of the Hypothalamic-pituitary-adrenal axis and Autonomous nervous system, involving the release of neurotransmitters like serotonin and hormones. Thus, it normalizes the neurotransmitters, hormonal and neural pathways and relievesall the symptom complex emerged as a result of neurohumoral imbalances in the patients of dysmenorrhoea. Spasm caused by vitiatiated Apana vayu causing obstruction to the flow of menstrual blood is the general underlying pathology. Taila enters into the srotas and movesthe sankocha (spasm) by virtue of its sookshma, vyavayi and vikasi i.e.,fast spreading nature.

Treatment

Life-style changes: Exercise regularly-minimum thrice a week Ensure sound sleep of at least 6-8 hours. Avoid smoking and alcohol Reduce caffeine

Diet: Eat healthy, warm and fresh foods Eat 5-6 small meals Have fresh fruits like plums, dark grapes, apples, pomegranates. Eat more leafy vegetables Regularly use ginger in food preparations Avoid high fat and sugar. Take supplements like calcium, magnesium, vitamin E, B6 B12.

Yoga: Yoga activities can help to reduce and prevent the severity of many ailments that specifically women’s health and give strength, stability, and suppleness. Yogasanas are considered as the most convenient, drugless, and inexpensive method. Yoga is also found to have encouraging effect on increasing the pain threshold capacity in individuals. In Yoga, various types of Asanas have been mentioned. Among them Ushtrasana, Bhadrasana, Gomukhasana, and Vajrasana have a pain relieving effect.

Ayurvedic Treatment: According to Ayurveda menstruation is guarded by vata dosha. Derangement or aggravation of vata dosha gives rise to this symptom. The treatment, which alleviates vata, gives excellent results in this disease. Panchakarma treatments like Uttarbasti, anuvasa or matra basti are the treatments which will specifically target derangement of vata in menstrual problems. Garbhshayya balya aushadhi will also reduce associated symptoms.

Conclusion

Ayurveda views Primary Dysmenorrhea as a doshic imbalance that can potentially be impacted through balanced living that is characterized by dosha appropriate diet, herbal supplements, exercise, routine, yoga, meditation, as well as nourishing inputs through all five senses.

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