

UDAVARTINI YONIVYAPADA W.S.R.TO DYSMENORRHEA: A REVIEW STUDY

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ABSTRACT

Reproduction is the noblest and should be the most reverent of all human powers. Motherhood is the cherished desire deep down in the heart of every woman as it adds a new meaning to her life and existence. In order to achieve this, women need *shuddha artava* as it is one of the essential factors for conception. Onset of *artava* marks the starting of reproductive life of women and it should be devoid of *shoola, daha, picchilata* and should not be excessive or scanty in *matra* and is considered as *Shuddha Artava*. Abnormalities in *artava* lead to many diseases like *Yonivyapad*, *Artavavyapad*, etc. which may result in complications like *Infertility*. *Udavartini Yonivyapad* is one among them. In this high-tech epoch, women's position is expected to reach new horizons both socially and physically. But some of the physiological things trouble the lady to make her slow down the race. One of such problems is painful menstruation. Most women often say that having menstruation is like having a monthly curse. Most women experience minor psychological and somatic changes for a few days preceding menstruation and during the days. Most of the accidental and suicidal deaths and other crimes occur among ladies during their premenstrual phase, which signifies the remarkable hormonal changes during that period and shows the importance to treat this condition. Stress of building career is yet another important reason which has now become a major priority in a woman's life. These abnormal interactions excite the *doshas* resulting into *Vata vikruti* resulting into painful menstruation. The etiological mechanisms of the disease include a subtle imbalance of estrogens and progesterone and hormonal therapy is used for this imbalance which is not a permanent cure and on long term even may cause any side effects. Even though *Dysmenorrhoea* is not a serious ailment but it interrupts patient's personal, economic and social life and also it may lead into many complications. So its promising treatment without any side effects is needed in the present scenario.

KEYWORDS: *Artava, Udavartini yonivyapada, vata vikruti.*

INTRODUCTION

Menstruation, conception & motherhood are the creative aspects of procreation. Among them, menstruation is one of the physiological processes seen in the reproductive phase, which denotes the healthy state of the female reproductive system.

Dysmenorrhoea is the Greek terminology defined as painful menstruation of sufficient magnitude so as to incapacitate day to day activities. It may be categorized into two types:-

- 1) Primary *Dysmenorrhoea*
- 2) Secondary *dysmenorrhoea*

Primary *dysmenorrhoea* is painful menses in women with normal pelvic anatomy usually begins during adolescence. It is characterized by crampy pelvic pain beginning shortly before or at the onset of menses and lasting 1-3 days. The pain is spasmodic and confined to the lower abdomen; may radiate to the back and medial

aspect of thighs. Systemic discomfort like nausea, vomiting, fatigue, giddiness, diarrhoea, headache may be associated.

In Ayurveda, primary *dysmenorrhoea* can be correlated with *Udavartini Yonivyapada* which is characterized by painful menstruation.

वेगोदावार्तानाद योनिमुदावर्तयेनिलः।

सा रुगार्ता रजः कुच्छेणोदावृत्तं विमुञ्चति ॥

आर्तवे सा विमुक्ते तु तत्क्षणं लभते सुखम्।

रजसो गमनादुद्ध्र द्येयोदवर्तिनि बुधैः ॥ च.चि.३०/२५,२६३

Udavartini is derived from *Ud+avarta*, that is upward direction of *vayu*. *Charka* first described *Udavartini* in *Vataja nanatmaja* diseases. He also elaborated the same in *chikitsasthana*. *Rajas* gets pushed in upward direction by the aggravated *apana-vayu* due to obstruction in normal flow in *Pakwashaya*, the chief site of *apana vayu* itself.

According to *Ayurveda* pain is an indication of *vata-vikruti*. *Apana-vayu* has been given prime importance in gynaecological disorders. The normal menstruation is function of *Apana-vayu*, so painful menstruation is considered to *Apana-vayudushti*. *Vyana vayu* has control over these muscles which brings about the action as contraction, relaxation etc. for production of *Artava*, *vyana* and *Apana* work in co-ordination with each other. The contraction and relaxation of uterus and its related organs is the function of *vyana vayu*, after which the *Artava* is expelled out by *Anulomana kriya* of *Apana Vayu*. According to *charak*, *Vata* plays key role in all types of *yoniroga*. As *vata* is the causative factor, so it should be treated first.

Secondary dysmenorrhea is commonly seen in PID, IUCD wearers, pelvic endometriosis, fibroids and women having varicosity of pelvic veins.

Need for the study

Menstrual pain of primary dysmenorrhea is mostly encountered in gynaecological practice. More than 70% of teenagers and 30-50% of menstruating women suffer from varying degrees of discomfort with 23.2% suffer severe pain in first 3 days.

Samhitas	Total no.	Vataja	Pittaja	Kaphaja	Dwandaja	Tridoshaja	Krimija
Cha.sa.	20	11	3	1	4	1	-
Su.sa.	20	5	5	5	-	5	-
A.S.	20	11	2	1	4	1	1
A.H.	20	11	2	1	5	1	-
Ma.Ni.	20	5	5	5	-	5	-
Bha.P.	20	5	5	5	-	5	-
Y.R.	20	5	5	5	-	5	-
Sha.sa.	20	11	3	1	4	1	-

Udavartini Yonivyapada

It is one of the *Vimshati Yonivyapads* told by all *Acharyas*. *Vata* is described as the causative *dosha* of *Udavartini Yonivyapad* by all the *Acharyas*. This term *Udavartini Yonivyapad* is given by *Acharya Charaka*. All other *Acharyas* gave different terms as *udavarta*, *udavrutata*.

Nirukti

उत् + आङ् + वृन्त् + धञ् - उदावर्त (शब्दकल्पद्रुम)

The act of going up. In *Udavarta*, *Vata* moves in upward and circular direction.

Definition

"विकारेण रजस ऊर्ध्वगमनात् उदावर्तिनि इत्युच्यते ॥

Udavartini is the *urdhvagamana* of *rajas* i.e. *rajas* is taken upwards by morbid *Vata*.

In *Madhukosha Teeka*, *Udavarta* is defined as the condition where

"मुञ्चति उदावर्तेति ऊर्ध्वमावर्तः समन्ताद्वर्तनं वायोर्यत्र सा तथेति ॥

Today's stressful modern life style, food habits, frequent interventions of female genital tracts affects the uterine environment, which leads to higher incidence of dysmenorrhea. Even though primary dysmenorrhea is not a real threat of life but can affect the quality of life and in case of severity it might lead to disability and inefficiency. More ever dysmenorrhea can cause mental illness resulting in their loneliness and reduced participation in different social activities.

Derivation of Yonivyapada

1. The word *Yonivyapada* consist of two words – *Yoni* and *vyapada*
2. The word '*yon*' is derived from the root '*yu*' with the suffix '*ni*' meaning *Samyojayathi* i.e. to unite the word *vyapad* refers to disorders or diseases.

In the classics the word *yon* has different meaning in different context i.e. Vulva, vagina, external genital organ, cervix, uterus or collectively female reproductive organs so the disease or the *vyapad* occurring in these parts can be considered under *yonivyapada*.

Morbid *Vata* takes the *rajas* upwards and then discharges with difficulty. In *Udavartini Yonivyapad*, *Acharyas* explained some principle symptoms as: *raja* gets discharged with great difficulty i.e. painful menstruation. Pain gets relieved immediately following discharge of menstrual blood.

Nidana

Nidana is the first step of *Nidanapanchaka* towards *Vyadhi utpatti*. It is the main cause to comprehend '*Vyadhi Utpatti Krama*'. It provides an insight on the cause of disease and helps us to assess the probable *dosha*, *dushya samurchana* in *vyadhi* thereby helping in proper diagnosis and treatment.

Nidana can be classified into two types for convenience i.e. *Samanya* and *Vishesha*

Samanya nidana of yonivyapads

"मिथ्याचारेण ताः स्त्रीणां प्रदुष्टेनार्तवेन च। जायन्ते

बीजदोषाच्च दैवाच्च शृणु ताः पृथक् ॥

प्रवृद्धलिङ्गं पुरुष याऽत्यर्थमुपसेवते । रुक्षदुर्बलवाला या तस्या वायुः प्रकुप्यति ॥

स दुष्टो योनिमासाय योनिरोगाय कल्पते। त्रयाणामपि दोषाणां
यथास्वं लक्षणोत्तु ॥
विंशतिव्यापदो योनेर्जायन्ते दुष्टभोजनात्।
विषमस्थाङ्गशयतभृशमैयुनसेवनै /
दुष्टार्तवादपट्टव्यैवीजदोषेण दैवतः ॥ “

1) *Mithyachara*: It includes both *mithya ahara* and *mithya vihara*

• **Mithya aahara**

Anashana

Alpashana

Atyashana

Vishmashana

Katu, tikta, kashaya rasa aahara sevana

Ruksha, laghu, shecta aahara sevana

• **Mithya Vihara**

Excessive coitus, Coitus in abnormal body posture.

Vishama sthana shayana

Ratrijagarana

Bhaya, Shoka etc.

Apadravya sevana: Introducing artificial objects into the vagina in an Unhygienic way which leads to local resistance and facilitate the Invasion of the organisms, precipitating infection.

These leads to vitiation of *Vata* specifically *Apana Vata* which then moves upward instead of moving downwards thereby causing movement of *rajah* in reverse diversion and fails to expel the *rajah*.

2) **Pradushta artava**

When the *artava* does not possess *shuddha artava lakshanas*, it is *pradushta artava*. And is the cause of *ashta artava dushtis*. These *dushtis* occurs due to the vitiation of *tridoshas* which affects not only the quantity and quality of the *artava* but also causes painful menstruation. According to modern perspective it resembles Hormonal imbalance as hormones are responsible for the normal and abnormal flow of *artava*.

3) **Beeja dosha**

Beeja dosha refers to abnormalities in *artava* and *shukra*, which results into abnormal formation of genital tract of the female foetus like *suchimukhi* causing *kricchhartava*. In modern correlance, congenital anomalies in the women like pin hole os of cervix, septate uterus, imperforate hymen etc. are the causes of painful menstruation due to difficulty in escaping of menstrual blood.

4) **Daiva**

When the cause is not known, the disease is said to develop due to *adharma* done by the woman and also due to *purvajanma krita papa karmas* which makes the woman to suffer due to the curses.

Vishesha Nidana of udavartini yonivyapada

Vishesha nidana of udavartini yonivyapad is "*Vegadharana*" as told by Acharya Charaka and Vagbhata.

Samprapti

Samprapti or pathogenesis is the process of evolution of the disease, right from the Indulgence in causative factors, the manner in which the *Dosha* diffuse in the body and to the manifestation of the disease in its full strength. Without knowing proper disease manifestation i.e. *Samprapti*, it is difficult to treat a particular disease.

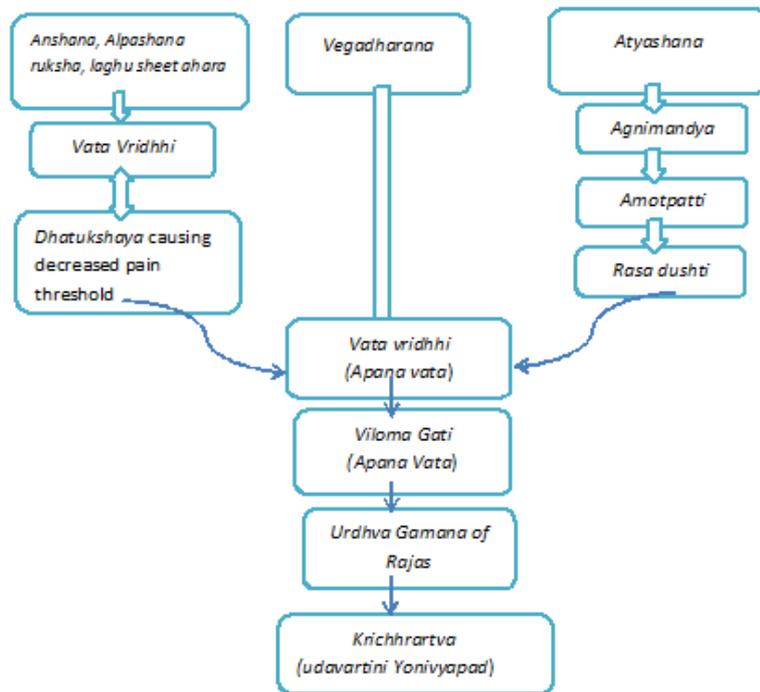
Here in Udavartini Yonivyapad

Due to *Vegadharana*, *Vata* vitiation occurs and *Vata* moves in upward direction i.e. *viloma gati* and the aggravated *Vata* fills the *yonis* and causes *prapeedana* of *yonis*. It initially throws the *rajah* upwards and then discharges it with great difficulty causing *Kricchhartava*. Due to consumption of *Vata kara aahara vihara*, the *Vata* gets aggravated and leads to:

- 1) *Dhatukshaya* which affects the formation of *upadhatu*.
- 2) Affect the formation of *rasa dhatu* and so its *upadhatu* also gets affected.

So *artava* will be produced in less quantity than normal which will further vitiate *Vata dosha* resulting in ischaemic condition of the uterus resulting in painful menstruation. Due to *atyashana*, *agnimandya* occurs which causes *amotpatti* and *rasa dushti* thereby causing *Vata vikruti* and normal function of *Vata* gets hampered causing painful menstruation.

Samprapti



Samprapti Ghataka

Doshas - Vata, Apana Vata

Dushya - Rasa, Rakta, Mamsa, Artava

Agni - Jatharagni, Dhatvagni mandya

Strotas - Rasa, Rakta, Artava vaha strotas

Srotodushti - Vimarga gamana

Roga marga - abhyantara

Udbhava sthana - Amapakvashaya

Sanchara sthana - Sarva shareera

Vyaktasthana - Yoni

Charaka	Sushruta	Madhava Nidana	Vagbhata	Yogratnakara
-Krichhrtava -Artava -Vimuktasukham -Ruk	-Krichhrtava -Phenilata	-Krichhrtava -Phenilata	- Krichhrtava - Phenilata -Yoniprapedana - Badhha Artava	- krichhrtava -Phenilata -Kaphanivam artava

Rupa

The cardinal symptom is difficulty in expelling the *Rajah*. Charaka has mentioned the relief of symptom once the flow starts, which denotes the primary dysmenorrhea. Difficulty in menstruation, frothy menstrual blood and association of *Vata vedana* are the symptoms given by *Sushruta* which denotes Secondary Dysmenorrhoea. *Indu's* explanation of *Baddha Rajah* can be correlated with association of clots.

Updravas

Vandhyatva, Gulma, Arshas, Pradara, Vata disorders are some of the *updravas* explained for *Yonivyapads* which can be found in *Udavartini Yonivyapad*.

Sadhyasadhya

Yonivyapad occurring due to vitiation of single *dosha* is *sadhya* according to *Acharya Sushruta*. So *Udavartini Yonivyapad* occurring due to *Vata* vitiation is *sadhya*.

Chikitsa

"samprapti vighatanmeva chikitsa"

Chikitsa of *Udavartini Yonivyapad* is mainly divided into two segments i.e. *Samanya* and *Vishesha*. Before explaining *samanya chikitsa*, *Acharya Charaka* explained:

"Na hi vaataadrute yonirnareenam sampradushyati"

It means that without the vitiation of *Vata*, women will not get any *Yonivyapad*. So without giving due consideration to *Vayu*, we cannot treat any of these 20 *Yonivyapads*.

Samanya chikitsa of Yonivyapads

1) Principles of treatment

- ✓ *Mridu snehana* and *swedana* as a *purvakarma* followed by *mridu vamanadishodhana*.
- ✓ Use of *Virechana* is advised
- ✓ Milk is beneficial.

Basti

- ✓ *Palasha Niruha basti*

- ✓ Shatavryadi anuvasana basti
- ✓ Baladi yamaka Anuvasana basti

Pichu

- ✓ Mushaka kwatha sidhha tila taila pichu

2) Abhyantara aushadhi

Churna and Grita

- ✓ Pushyanug churna
- ✓ Brihata shatavari ghrita
- ✓ Phala grita
- ✓ Triphladi ghrita

Kwatha

- ✓ Nyagrodhadi kwatha
- ✓ Maharasnadi kwatha

Modaka

- ✓ Jeerakadi modaka

Treatment of Vataja Yonivyapad

As Udavartini Yonivyapad occurs due to Vata vitiation so it is considered under Vataja Yonivyapads and hence samanya treatment for Vataja Yonivyapad can also be followed.

- Taila prepared with the drugs possessing ushna and snigdha guna should be
- used for parisheka, abhyanga and pichu.
- Kumbhi or nadi sweda either with mamsa rasa of audaka or aanupa animals or
- with milk mixed with tila and tandula or with Kwatha of drugs capable of suppressing the Vata should be done.
- An oint the yoni with salt and oil and swedana should be done with any one out of
- ashma, prastara, shankara, pinda, nadi or kumbhi sweda.
- Pichu of the oil prepared with guduchi, malati, rasna, bala, madhuka, chitraka,
- nidigdhika, devadaru and yuthika.
- Kalka dharana of himsra.
- Guduchyadi taila utara basti.
- Kashmaryadi ghrita paana
- Shatawaryadi ghrita paana.

Udavartini Yonivyapad chikitsa

The specific treatment aims at combating Vata dosha. As there is vigunta in Vata gati, the measures to do Vatanulomana are preferred.

- Snehana with trivritasneha (ghrita, taila, vasa)
- Swedana with Mamsa rasa sevana of gramya, anupa and audaka animals
- Dashmoola ksheer basti
- Anuvasana basti and utara basti with trivruttasneha
- Utkarika made with yava, godhum, kinva, kustha, shatapushpa, shatayahwa, priyangu, bala and akhuparni.
- Swedana with ksheer

- Oral use or use in the form of anuvasana and utara basti of sneha medicated with kwatha and kalka of dashmoola and trivruta.
- More use of sneha in diet and treatment modalities definitely combats morbid Vata dosha and helps in easy flow of artava.

Pathyas

- According to predominance of dosha; use of sura, arishta, asava, lashuna
- swarasa in early morning.
- Ksheer mamsayukta bhojana Yavanna bhojana, abhyarishta, sidhu, taila,
- pippali churana, pathya churana and lohabhasma with honey Bala taila, mishrakasneha and sukumarakasneha pana is considered congenial.
- Lashuna rasayana

Apathyas

Manda prayoga is contraindicated.

Modern aspect

Dysmenorrhoea is defined as difficult menstrual flow or painful menstruation. The term Dysmenorrhoea is derived from the Greek words "dys" meaning painful/difficult abnormal, "meno" meaning month and rhea" meaning flow. Thus Dysmenorrhoea means painful or difficult menstruation but a more realistic and practical definition includes cases of painful menstruation of sufficient magnitude as to incapacitate day to day activities or require medication [16]. It is one of the common gynaecological disorders that affects 50% of menstruating women.

Classification: Dysmenorrhoea can be classified as either primary or secondary based on the absence or presence of an underlying cause.

1) Primary Dysmenorrhoea

It is a pain which is of uterine origin and directly linked to menstruation but with no visible pathology. It usually appears within 1-2 years of menarche when ovulatory cycles are established. It usually appears in young girls but may persist into forties. Incidence of Dysmenorrhoea is affected by social status, occupation and age. Associated factors that increase the risk duration and severity of Dysmenorrhoea include early menarche, long menstrual periods, overweight, and smoking.

Causes

- 1) Prostaglandins
- 2) Vasopressin
- 3) Behavioural & Psychological factors
- 4) Imbalance in autonomic nervous control of uterine muscles
- 5) Uterine hypoplasia
- 6) Unequal development of Mullerian ducts
- 7) Narrowing of the cervical canal
- 8) Hormonal imbalance
- 9) Endometrial factors

- 10) Environmental factors causing nervous tension
- 11) General ill health
- 12) Faulty outlook
- 13) Inappropriate law of polarity

1) Prostaglandins

1) Prostaglandins are C20 hydrocarbon lipids with a cyclopentene ring and are derivatives of prostanoic acid. They do not fit into the classical definition of hormones in several respects, they seem to function as local or paracrine modulators of cellular metabolism. These are present in most mammalian tissues, where they are produced locally under the control of microsomal enzymes collectively called prostaglandin synthetase. The endometrium and partly the myometrium, synthesize the PGs from arachidonic acid by the enzyme cyclo-oxygenase. In ovulatory cycles, under the influence of progesterone, PGF₂α, PGE₂ are synthesized from the secretory endometrium. Prostaglandins are released with maximum production during shedding of the endometrium.

Different PGs have got different action. Some prostaglandins induce smooth muscle contraction and therefore vasoconstriction, and they promote platelet aggregation and clotting while other prostaglandins do the opposite.

For example,

- PGF₂α seems to play a dominant role in normal cycle. It causes myometrial contraction and vasoconstriction and causes ischemia of the myometrium.
- PGE₂ produces myometrial contraction but causes vasodilatation PG₁₂ (prostacyclin) causes myometrial relaxation and vasodilatation. It also inhibits platelet activity. The contractile effect of the PG's initiates the uterine contraction that expels out the uterine contents. Either due to increased production of the prostaglandins or increased sensitivity of the myometrium to the normal production of PG's, there is increased myometrial contraction with or without dysrhythmia causing pain. Thus the menstrual pain and blood flow are probably related to the relative proportion of different PGs present in the endometrium.

2) Role of Vasopressin

In women having primary dysmenorrhoea, there is increased release of vasopressin during menstruation. Vasopressin increases prostaglandin synthesis and also increases myometrial activity directly. It causes uterine hyperactivity and dysrhythmic contractions causing ischaemic hypoxia leading to the pain during menstruation.

3) Behavioural and Psychological factors

Just before and during menstruation most women are less efficient physically and more unstable emotionally. These factors lower the pain threshold.

The expectations of pain may be fostered by the overanxious parents and curtailment of normal activities during menstruation. Unhappiness at home or at work, fear or loss of employment, anxiety over examination may cause Dysmenorrhoea.

Dysmenorrhoea may even be an excuse to avoid doing something which is disliked. A Dysmenorrhoeic mother usually has a Dysmenorrhoeic daughter. A girl who is an only child is more likely than most to suffer from Dysmenorrhoea.

4) Narrowing of the cervical canal

Stenosis at the internal os or narrowing of the cervical canal difficult for the menstrual blood to escape strong uterine contractions pain This may explain relief of the pain following dilatation of the cervix.

5) Unequal development of Mullerian ducts

In conditions like bicornuate or septate uterus, pain is due to unequal muscular contractions.

6) Uterine Hypoplasia

Inadequate expulsive force.

7) Imbalance in the autonomic nervous control of uterine muscle

It causes an overactive sympathetic system leading to hyper tonus of the circular fibres of the isthmus and the internal os which causes incoordinate muscle action of the uterus causing spasmodic pain.

8) Endometrial factors

At the time of menstruation, increased uterine ischemia and elevated PGF₂a production causes abnormal uterine activity. The basal tone is elevated during contractions and is dysrhythmia with the increased and abnormal uterine action, blood flow is reduced giving rise to uterine ischemia and pain.

9) Hormonal imbalance

Progesterone induces high tone in the isthmus and upper cervix. An exaggeration of this could therefore be the basis of the incoordinate action of the uterus.

10) General ill health

Severe malnutrition, acute and chronic illness may be associated with Dysmenorrhoea. As pain threshold gets decreased by ill health of any kind.

11) Inappropriate law of polarity

When the body of the uterus contracts the cervix normally dilates, this is normal phenomenon. The polarity denotes its co-ordination. When this polarity is disturbed, painful or difficult menstrual discharge through the os occurs.

12) Poor Posture

Due to poor posture, the normal body mechanism also suffers, like the loss of tone of nerves supplying blood

vessels and muscle tissues. Poor posture lead to primary Dysmenorrhoea in poor asthenic women whose pain threshold is low and generative organs are functionally faulty.

13) Inadequate Liquefaction of the Menstrual Clot

Due to deficiency of thrombolysin, menstrual blood becomes clotted. Due to failure of liquefaction clotted blood obstructs the passage of the cervical canal. To expel out those clots uterus contracts vigorously thus painful menstruation arises.

Pathophysiology

During a woman's menstrual cycle, the endometrium thickens in preparation for potential pregnancy. After ovulation, if the ovum is not fertilized and there is no pregnancy, the built up uterine tissue is not needed and thus shed with menstrual blood. Molecular compounds called prostaglandins are released during menstruation, due to the destruction of the endometrial cells, and the resultant release of their contents. Release of Prostaglandins and other inflammatory mediators in the uterus cause the uterus to contract. These substances are thought to be a major factor in Primary Dysmenorrhoea. When the uterine muscles contract, they constrict the blood supply to the tissue of the endometrium, which in turn, breaks down and dies. These uterine contractions continue as they squeeze the old, dead endometrial tissue through the cervix and out of the body through the vagina. These contractions, and the resulting temporary oxygen deprivation to nearby tissues, are responsible for the pain or "cramps" experienced during menstruation.

Compared with women not having Dysmenorrhoea, the ones with Primary Dysmenorrhea have increased activity of the uterine muscle with increased contractility and increased frequency of contractions.

Mechanism of Pain Production In The Dysmenorrhoea Severe vasodilatation, ischaemia, obstruction, inflammation etc, conditions for which receptors are directly stimulated by mechanical stress (or irritation) or indirectly by Algogenic substances like PGs, bradykinin etc. which are produced due to tissue damage. By the receptors, stimuli go to spinal segment and then pass to ascending tract and reach the pain centre of brain, then we identify the pain, the same process of pain production takes place in Dysmenorrhoea.

Nerve supply to the uterus is important to locate the site of pain in Dysmenorrhoea. It is principally derived from sympathetic system and partially from Parasympathetic system. Sympathetic components are from T5 and T6 (motor) and T10 to L1 spinal segments (sensory). The somatic distribution of uterine pain is that area of the abdomen supplied by T10 to L1. The parasympathetic system is represented on either side by the pelvic nerve, which consists of both motor and sensory fibres from S2, S3, S4 and ends in the ganglia of Frankenhayser, which

lies on either sides of the cervix. Both parietal and visceral afferent pain may be transmitted from the uterus. The lower abdominal cramping pains of Dysmenorrhoea are mediated through sympathetic afferents and hence may be referred to appropriate segments.

Symptoms

- Pain of Primary Dysmenorrhoea is usually experienced few hours before and after the onset of menstruation and rarely lasts in a severe form for longer than 12 hrs.
- Typically a background, constant pain with superimposed spasmodic cramping exacerbations.
- Pain is colicky in nature and main site of pain is hypogastrium and is often referred to inner and front aspects of thighs and to the back.
- During a severe attack, pain may be accompanied with nausea, vomiting, Diarrhoea, rectal and bladder tenesmus and rarely syncopal attacks.

Signs

- On examination, the vital signs are normal.
- Suprapubic region may be tender on palpation. Bowel sounds are normal and there is no upper abdominal tenderness and no abdominal rebound tenderness.
- Bimanual examination at the time of pain may often reveal uterine tenderness. In Primary Dysmenorrhoea, pelvic organs are normal.

Diagnosis

History is critical in establishing the diagnosis of Dysmenorrhoea and should.

Include an assessment of

- ✓ Age at menarche
- ✓ Menstrual frequency, length of period, estimate of the menstrual flow and presence or absence of intermenstrual bleeding

Associated symptoms

Severity of pain and its relationship to the menstrual cycle

- Impact on physical and social activity
- Progression of symptom severity

Sexual history and contraceptive history

A physical examination is indicated at the initial evaluation, which should be carefully performed in order to exclude uterine irregularities, cul-de-sac tenderness or nodularity that may suggest endometriosis, pelvic inflammatory disease or a pelvic mass.

Management of Dysmenorrhea

Approach	Specific methods
General measures	Psychotherapy, Reassurance
Prostaglandin synthetase inhibitor	Cyclooxygenase blockers (indomethacin, ibuprofen, sodium naproxen, flufenamic acid)
Endocrine therapy	Oral contraceptive pills, inhibition of ovulation.
Tocolysis	Alcohol, B receptor stimulation
analgesics	Non narcotics, narcotics
Nerve block stimulation	Alcohol or local anaesthetic injection of uterosacral ligaments, transcutaneous electrical nerve stimulation
Surgery	Dilatation and curettage presacral neurectomy

Sympathetic approach to the patient including consideration of psychological & behavioral elements.

General

Unfavourable environmental factors, malnutrition, general ill health and mode of life should be corrected.

Regular physical activities should be encouraged between and during menstruation.

Medical treatment

1) Prostaglandin synthetase inhibitors

The non-steroidal anti-inflammatory drugs are active inhibitors of prostaglandin synthetase and are very effective.

Indomethacin 25 mg, 3-4 times a day

Ibuprofen 400 mg, 3 times a day

Naproxen sodium 250 mg, 3 times a day

Mefenamic acid 250 - 500 mg, 2-4 times a day

Peroxycam 20 mg, 1-2 times a day

2) Hormone therapy

Estrogen-progesterone oral contraceptive preparations to be taken each night from 5 to 25 days of cycle as an ovulatory cycles are painless, so suppression of ovulation gives certain relief. This is the treatment of choice for the woman who desires contraception.

3) Calcium channel blockers

When there is demonstrable pelvic pathology, patient responds well to Nifedipine.

4) Surgical treatment: It is considered only if medical treatment fails.

- Laparoscopy: It is done to rule out any pelvic lesion causing Secondary Dysmenorrhoea,
- Dilatation of the cervix: It is done to stretch the fibromuscular tissue at the level of the internal os to such an extent as to render it hypotonic. It is carried out slowly and continued upto Hegar 10.
- Injection of the pelvic plexus: Injection of the Lee-Frankenhauser plexus with anaesthetic agents can be combined with dilatation of the cervix or alone. It might have place as a therapeutic test before resorting to sympathectomy.
- Presacral neurectomy: To eliminate motor impulses which may be responsible for uterine spasm. To

increase the vascularity of the uterus. To interrupt the sensory pathways from the uterus.

- The stem pessary: It is a small instrument of plastic or steel designed to be inserted after dilatation of cervix and thereafter to lie in the cervical canal, which is to produce pressure necrosis of the nerve endings and ganglia in this region. It is left in the place for 2-3 months.
- Transaction of uterosacral ligaments: It is termed as Doyle operation. Either through vaginally or through abdominally transaction is done. The operative technique interrupts the parasympathetic or sympathetic uterine nerve supply by excising approximately 1-2 cm of each uterosacral ligament at its insertion into the uterus. Each ligament is then reconnected but with peritoneum interposed so that the nerve supply cannot regenerate.

Secondary Dysmenorrhoea

Secondary Dysmenorrhoea is normally considered to be menstruation-associated pain occurring in the presence of pelvic pathology.

Causes of pain

- The pain may be related to increasing tension in the pelvic tissues due to premenstrual pelvic congestion or increased vascularity in the pelvic organs.
- Chronic pelvic infection
- Pelvic endometriosis
- Pelvic adhesions
- Adenomyosis
- Uterine fibroids
- Endometrial polyp
- IUCD in utero
- Uterine malformations such as septate uterus, bicornuate uterus, unicornuate uterus, didelphys etc. Rudimentary horn causes pain as it does not communicate with the uterine canal and the outflow of blood from it is obstructed. Conditions like Cervical stenosis, imperforate hymen. Transverse vaginal septum.

Incidence

The patients are usually in thirties: more often parous and unrelated to any social status.

Role of Prostaglandins in Secondary Dysmenorrhoea

Endometrial PG levels are higher in the presence of the IUCD. The presence of an IUCD induces an endometrial inflammatory response around the vicinity of the device with leukocyte infiltration. Prostaglandin levels, particularly PGF_{2a}, are significantly elevated in the endometrium immediately around the vicinity of the intrauterine device. Treatment with non-steroidal anti-inflammatory drugs can relieve the Dysmenorrhoea in women wearing an intrauterine device. Because most non-steroidal anti-inflammatory drugs block the action of cyclooxygenase and therefore inhibit not only prostaglandin F_{2α} and E₂, but also prostacyclin and thromboxane and Dysmenorrhoea is alleviated.

Clinical features

The pain is dull, situated in the back and in front without any radiation often accompanied by backache. Backache may be as a result of hormones influence on the joints of the spine and the pelvis. It usually appears 3-5 days prior to the period and relieves with the start of bleeding as congestion is reduced.

- Develops usually after a phase of painless cycle
- Pain may be spasmodic and congestive in type frequently associated with menorrhagia or polymenorrhoea, and forms part of the premenstrual syndrome. may have got some discomfort even in between periods.

Investigations

It can easily be diagnosed from the history of the patient. Important investigations to help in identifying the cause are:

- Laproscopy- single and most useful diagnostic procedure
- Pelvic USG- will show ovarian endometriosis and demonstrate complexity of ovaries in PID
- Hysterosalpingogram- to identify intrauterine adhesions.
- Microbiological cultures from endocervix or peritoneal fluid in suspected PID
- MRI is best for diagnosis of congenital uterine anomalies.

Treatment

Treatment aims at the cause rather than the symptom. Type of the treatment depends on the severity, age and the parity of the patient. Supportive measures with analgesics may be used.

In IUCD users and in women with leiomyomas and endometriosis, Prostaglandin synthetase inhibitors can provide relief of pain and reduce the amount of bleeding.

A rudimentary horn is best excised, especially if it is the seat of a haematometra.

Nutritional considerations in dysmenorrhoea

Diet has a role in altering estrogen concentrations or estrogen activity and also may involve the inhibition of

hormones (prostaglandins) that cause contraction of the muscles of the uterus. A low-fat vegetarian diet may reduce Dysmenorrhoea symptoms. High-fiber, plant-based diets are associated with reduced blood estrogen concentrations. Another possible protective aspect of these diets is their high content of Phytoestrogens. Vegetarian diets also have higher amounts of omega-3 fatty acids, which may decrease inflammation. Sources of Omega 3 fatty acids are fatty fish, fish oils and walnuts. For non-vegetarians, Omega-3 fatty acids are found in fish such as salmon, mackerel, sardines, and anchovies.

Avoid diet rich in omega 6 fatty acids which includes most processed nuts, cereals, breads, white rice, fast food, packaged food, eggs, baked goods, oils with large amounts of polyunsaturated fatty acids (com, sunflower, cottonseed and soyabean oil) and meats (especially organ meats. such as liver.) One should use olive oil, butter and coconut oil to make life easier. Fish oil intake seemed to have a positive effect on menstrual cramps. Animal studies suggest that the two compounds in fish oil, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) may decrease prostaglandin levels. Food groups that have a high amount of easily digestible calcium, such as the sesame seeds, sesame butter, common yogurt, seaweeds like kelp along with other types of seaweeds, all sorts of dark green leafy vegetables such as kale, the common parsley, the spinach, any green fresh sprouts, and some herbs such as the comfrey, the raspberry, and the nettle just be included in the daily diet.

Vitamin B1, B12, E are effective in treating pain.

Bioflavonoids are helpful with period pain because they help to relax smooth muscle and reduce inflammation. Bilberry is one of the best bioflavonoids for this, but other bioflavonoids can be helpful including blackberries, blackcurrants, raspberries and even grape. Vitamin B6 is needed to help produce good prostaglandins which help to relax and widen blood vessels as opposed to bad prostaglandins which increase the womb contractions and increase the pain, So it is worth taking a good B-complex supplement which reduces the intensity and duration of period pains.

Zinc is mineral which is important for eliminating period pains because it is needed for the proper conversion of essential fatty acids. Magnesium is a mineral found naturally in foods such as green leafy vegetables, nuts, seeds, and whole grains. It is also available as nutritional supplements. Magnesium is needed for more than 300 biochemical reactions. It helps to regulate blood sugar levels and is needed for normal muscle and nerve function, heart rhythm, immune function, blood pressure, and for bone health. High doses of magnesium may cause diarrhoea, nausea, loss of appetite, muscle weakness, difficulty in breathing, low blood pressure, irregular heart rate, and confusion.

Bromelain- this is an enzyme contained in pineapples and it has been found to be extremely useful for treating painful periods. It has anti- inflammatory properties and helps as a natural blood thinner. It also acts as a smooth muscle relaxant and is thought to decrease the 'bad prostaglandins' and increase the good prostaglandin.

Regular exercise has been demonstrated to reduce the frequency and severity of menstrual cramps, probably through the release of internal beta-endorphins.

Yoga Asanas helpful during menstrual cycle

- ❖ *Swastikasana*
- ❖ *Virasana*
- ❖ *Padmasana*
- ❖ *Gomukhasana*
- ❖ *Paschimothasana*
- ❖ *Badha-konasana*
- ❖ *Janu sirasana* - recommended to perform the *asana* without coming forward, keeping the back spine concave. *This pose is calming. Lower abdominal and pelvic compression aids cramps.*
- ❖ *Trikonasana*
- ❖ *Ardhachandrasana*
- ❖ Supported *Setubandhasana* - pose is calming, relieves menstrual discomfort *Supta vajrasana, Matsyasana*
- ❖ *Shavasana*
- ❖ *Pranayama: Ujjayi and Viloma pranayama*

These *asanas* relax the muscles and nerves which are under constant stress, strain and irritation soothes the abdomen. these *asanas* help those who suffer from headache, backache, abdominal cramps and fatigue.

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