

A Literary Review of Udavartiniyonivyapada in Ayurveda W.S.R. to Dysmenorrhea

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ABSTRACT

In Ayurveda, diseases related to the female reproductive system, i.e., gynaecological disorders, are described under the caption of Yoni Vyapada. Udavarta Yonivyapada, or painful menstruation, is a common problem of the females in the reproductive age group & has got a detailed pathophysiology and treatment in the classical literature of Ayurveda. "Arthave Sa Vimukthe Tu Tat Kshanam Labhate Sukham," mentioned by Acharya Charaka substantiate, the close similarity of Udavarta Yoniyapad with spasmodic dysmenorrhea. Dysmenorrhea, also known as "painful menstruation," is one of the most distressing issues for adolescent girls and women. Primary dysmenorrhea severe enough to cause incapacitation occurs in about 15-20% of cases. Ayurveda Explains that dysmenorrhea is caused by vitiated vata dosha, which causes pain and difficulty in passing menstrual blood. Udavarta Yoniyapada is caused by Vegodavarthana, which results in Pratiloma Gati of Apana Vata and Raja. So, treatment should aim to alleviate pain by normalising the direction of menstrual flow, which in turn normalises the vitiated Apana Vayu. The current paper aims to incorporate all references to Udavarta Yoniyapada, including NidanaPanchakas from Ayurvedic classics.

I. INTRODUCTION

Menstruation, conception & motherhood are the creative Aspects of procreation. Among them, menstruation is one Of the physiological process seen in reproductive phase, Which denotes the healthy state of female reproductive System. Dysmenorrhea 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 Dysmenorrhea
- 2) Secondary dysmenorrhea

[1]Primary dysmenorrhea is painful menses in women with Normal pelvic anatomy usually begins during Adolescence. It is characterised by crampy pelvic pain Beginning shortly before or at the onset of menses and Lasting 1-3days. The pain is spasmodic and confined to 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 dysmenorrhea can be correlated With Udavartini Yonivyapada which is characterized by Painful menstruation Udavartini is derived from Ud+avarta, that is upward Direction of vayu. Charka first described Udavartini in Vatajananatmaja diseases. He also elaborated the same In chikitsasthana. Rajasgets pushed in upward direction By the aggravated apana-vayu due to obstruction in Normal flow in Pakwashaya, the chief site of apanavayu 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 vyanavayu, after which the Artava is expelled out by Anulomana kriya of Apana Vayu. According to charak, Vata plays key role in all Types of yoni roga. 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. 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 – YoniAnd vyapada
2. The word 'yoni' 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 yoni 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.

Udavartini Yonivyapada

It is one of the VimshatiYonivyapads told by all Acharyas. Vata is described as the causative dosha of UdavartiniYonivyapad by all the Acharyas. This termUdavartiniYonivyapad is given by Acharya Charaka.All other Acharyas gave different terms as udavarta, Udavrutta.

Nirukti

उत् + आङ् + वृन्त् + धञ् उदावर्त (शब्दकल्पद्रुम)[2]

The act of going up.InUdavarta, 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 उदावर्तति ऊर्ध्वमावर्तः समन्ताद्वर्तनं वायोर्यत्र सा तथेति ॥

Morbid Vata takes the rajas upwards and then discharges

With difficulty. In UdavartiniYonivyapad, AcharyasExplained some principle symptoms as: rajah 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 Vyadhiutpatti. 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, dushyasamurchana in vyadhi thereby helping in Proper diagnosis and treatment.Nidana can be classified into two types for convenience i.e. Samanya and Visheshha [3]

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 दोषाणायथास्वं लक्षणेत् तु ॥

विंशतिव्यापदो

योनेर्जायन्तेविषमस्थाङ्गशयतभृशमैयुनसेवनैदुष्टार्तवा दपट्व्यैवीजदोषेण दैवतः ॥“

- 1) **Mithyachara: It includes both mithyaahara and Mithya vihara**

□ **Mithyaaahara**

Anashana

Alpashana

Atyashana

VishmashanaKatu, tikta, kashaya rasa aaharasevanaRuksha, laghu, shectaaaharasevana

□ **Mithya Vihara** Excessive coitus, Coitus in abnormal body posture. Vishamasthanashayana Ratrijagarana Bhaya, Shokaetc. Apadravyasevana: 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 VataWhich then moves

upward instead of moving downwards. Thereby causing movement of rajah in reverse diversion. And fails to expel the rajah.

2) Pradushtaartava

When the artava does not possess shuddhaartava Lakshanas, it is pradushtaartava. And is the cause of Ashtaartavadushtis. These dushtis occur 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 kricchartava. In modern correlation, 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 purvajanmakrita papa karmas which makes the woman to suffer due to the curses.

Visheshanidana of udavartiniyonivyapada

Visheshanidana of udavartiniyonivyapada is "Vegadharana" as told by Acharya Charaka and Vagbhata.

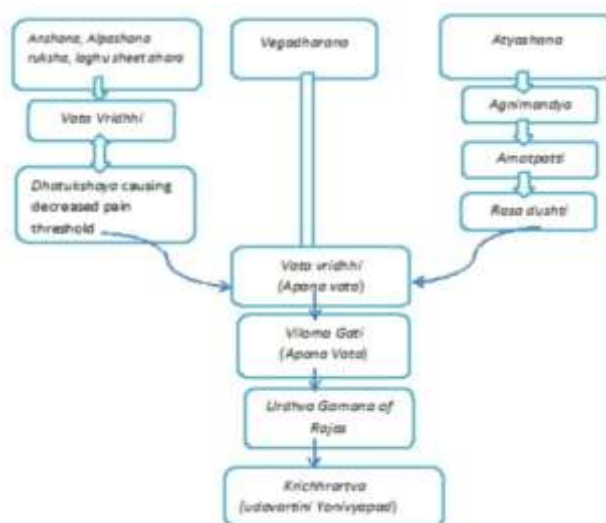
Samprapti

Samprapti or pathogenesis is the process of evolution of the disease, right from the indulgence in causative factors, the manner in which the dosha diffuses 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 Udavartiniyonivyapada due to Vegadharana, Vata vitiation occurs and Vata moves in upward direction i.e. vilomagati and the aggravated Vata fills the yoni and causes prapedana of Yoni. It initially throws the rajah upwards and then discharges it with great difficulty causing Kricchartava. 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 Updhatu 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. 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 Ghataka

Doshas – Vata, Apana Vata
Dushya – Rasa, Rakta, Mamsa, Artava
Agni – Jatharagni. Dhatvagnimandya
Strotas – Rasa, Rakta, Artavavahasrotas
Srotodushti – Vimargagamana
Rogamarga – abhyantara
Udbhavasthana – Amapakvashaya
Sancharasthana – Sarva shareera
Vyaktasthana – Yoni[4]

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 UdavartiniYonivyapad.

Sadhyasadhyata

Yonivyapadoccurring due to vitiation of single dosha is Sadhya according to Acharya Sushruta. So Udavartini Yonivyapadoccurring due to Vata vitiation is sadhya.

Chikitsa

“sampraptivighatanmeva chikitsa”Chikitsa of UdavartiniYonivyapad is mainly divided into Two segments i.e. Samanya and Vishesha. BeforeExplaining samanya chikitsa, Acharya Charaka Explained: “Na hi vaataadruteyonirnareenam 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

☐ Mridusnehana and swedana as a purvakarma Followed by mriduvamanadishodhana.

☐ Use of Virechana is advised

☐ Milk is beneficial.

Basti

☐ PalashaNiruhabasti

☐ Shatavryadianuvasanabasti

☐ Baladi yamakaAnuvasanabasti

Pichu

☐ Mushakakwathasidhhatilatailapichu

2) Abhyantaraaushadhi

Churna and Grita

☐ Pushyanugchurna

☐ Brihatashatavarighrita

☐ Phala grita

☐ Triphladighrita

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 rrhea” 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 160 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.[7]

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 persists into forties. Incidence of Dysmenorrhoea is affected by social status, occupation And age. Associated factors that increase the risk duration And severity of Dysmenorrhea include early menarche, Long menstrual periods, overweight, and smoking.

1) Prostaglandins

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, PGF2 α , 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,

□ PGF2 α seems to play a dominant role in normal Cycle. It causes myometrial contraction and Vasoconstriction and causes ischemia of the Myometrium.

□ PGE2 produces mayometrial contraction but causes

Vasodilatation PG12 (prostacyclin) causes Mayometrial 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 mayometrial 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.

1) Role of Vasopressin

In women having primary dysmenorrhoea, there is Increased release of vasopressin during menstruation. Vasopressin increases prostaglandin synthesis and also Increases mayometrial activity directly. It causes uterine Hyperactivity and dysrhythmic contractions causing Ischaemic hypoxia leading to the pain during Menstruation.

2) 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

- 3) 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.
- 4) Unequal development of Mullerian ducts In conditions like bicornuate or septate uterus, pain is Due to unequal muscular contractions.
- 5) Uterine Hypoplasia Inadequate expulsive force.
- 6) 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.
- 7) Endometrial factors
- 8) At the time of menstruation, increased uterine ischemia And elevated PGF2 α 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 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 is 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 dysmenorrhea. 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 dysmenorrhea, 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 dysmenorrhea 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 dysmenorrhea. Nerve supply to the uterus is important to locate the site of pain in dysmenorrhea. 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 dysmenorrhea are mediated through sympathetic afferents and hence may be referred to appropriate segments.

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

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 cycle is painless, so suppression of ovulation gives certain relief. This is the treatment of choice for the woman who desires contraception.[8]

- 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.

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.

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:

- a) Laparoscopy- single and most useful diagnostic Procedure
- b) Pelvic USG- will show ovarian endometriosis and Demonstrate complexity of ovaries in PID
- c) Hysterosalpingogram- to identify intrauterine

Adhesions.

- d) Microbiological cultures from endocervix or Peritoneal fluid in suspected PID
- e) 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.

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
- ☐ Badhakonasana
- ☐ 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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