The Academic
International Journal of Multidisciplinary Research

An Online Peer Reviewed / Refereed Journal
Volume 3 | Issue 3 | March 2025
ISSN: 2583-973X (Online)
Website: www.theacademic.in

A Review on Primary Dysmenorrhea

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ARTICLE DETAILS

Research Paper

Accepted on 27-03-2025

Published on 15-04-2025

Keywords:

Primary dysmenorrhea, NSAIDs, hormonal therapy, oral contraceptives, pain relief, prostaglandin inhibitors, menstrual pain management.

ABSTRACT

Primary dysmenorrhea (PD) is a widespread gynecological disorder among young females, characterized by intense menstrual cramps caused by excessive prostaglandin production. Allopathic treatments are the most commonly used approach for managing PD, providing fast and effective pain relief. Nonsteroidal anti-inflammatory drugs (NSAIDs) serve as the first-line treatment, helping to reduce prostaglandin levels and ease discomfort. Hormonal contraceptives, such as combination oral contraceptive pills, help regulate menstrual cycles and lessen symptom severity by suppressing ovulation. Additional pharmacological options, including analgesics, antispasmodics, and selective prostaglandin inhibitors, offer further symptom relief. Despite their effectiveness, long-term use of these treatments may lead to adverse effects such as gastrointestinal issues, hormonal disruptions, and potential drug dependence. This review explores the effectiveness, safety, and limitations of allopathic therapies for PD, highlighting the importance of personalized treatment approaches. The insights gained from this study aim to support informed clinical decision-making and enhance patient outcomes in PD management.

DOI : https://doi.org/10.5281/zenodo.15225302

INTRODUCTION:

1. DYSMENORRHEA:

The Greek words Dys (difficult, painful, or abnormal), meno (month), and rrhea (flow) are the roots of the English word dysmenorrhea. Dysmenorrhea is the painful menstrual periods which are caused by uterine contractions predominately because of the prostaglandins. Females' daily routine activities and quality of life are impacted by dysmenorrhea. [3,4.6]

Due to today's lifestyle and eating habits, menstrual pain that is severe enough to interfere with everyday activities is known as dysmenorrhea. This condition is becoming a major global issue, causing discomfort for women's daily routines, causing them to miss work, college, or school, or making it impossible for them to participate in sports or other activities. [7]

Dysmenorrhea is characterized by cramping, labor-like discomfort in the lower abdomen that spreads to the upper abdomen, waist, and thighs. Systemic symptoms such as nausea, vomiting, diarrhea, headache, dizziness, pelvic or abdominal pain, and backache can occasionally accompany dysmenorrhea. [8,9] Usually beginning during menstruation, these symptoms go away in three days. [8]

In addition to affecting teenage girls' and women's mental health and quality of life, dysmenorrhea eventually results in lost work hours and financial losses, particularly for working women, and has an impact on school-going girls' academic performance, school attendance, and athletic participation. [10,11]

There are two types of Dysmenorrhea:

A. Primary dysmenorrhea
B. Secondary dysmenorrhea

A. Primary dysmenorrhea:

The term "primary dysmenorrhea" describes recurring discomfort that has no underlying cause. Usually, pain starts a day or two before the menstrual cycle or the actual commencement of bleeding. Pain in the thighs, back, or lower abdomen that ranges in severity from mild to severe. normally occurring soon before or during menstruation, pain is regular and frequent. It normally lasts 12 to 72 hours and is sometimes accompanied by other symptoms including exhaustion, diarrhoea, and nausea and vomiting. Frequently linked to pre-menstrual symptoms, such as mood swings, headaches, breast tenderness,

bloating or stomach discomfort, fatigue or difficulty sleeping, and feelings of unhappiness, anxiety, or irritability.

It is the most prevalent gynaecological issue affecting women worldwide. In women of reproductive age, 2%–29% experience severe discomfort, while 16%–91% experience dysmenorrhea.

The most prevalent gynecological issue among young adults and adolescents who menstruate is primary dysmenorrhea. (PD) is characterized by lower abdominal cramping at the start of menstruation that is not accompanied by any pelvic disease. [7,12,13] Back pain, nausea, vomiting, bleeding, breast tenderness, and diarrhea can all accompany discomfort. In addition to being a gynecological issue, PD is a significant public health, occupational health, and family practice issue since it impacts the national economy and quality of life through labor loss and temporary school and college absences. [7]

Myometrial contractions brought on by prostaglandins (Pgs.) that originate in the secretory endometrium are linked to primary dysmenorrhea and cause discomfort and uterine ischemia. [9] When there is no discernible pelvic disease, PD is defined as persistent menstrual cramping discomfort. [10,15,16]

One of the most prevalent complaints in both adolescent and adult females is primary dysmenorrhea (PD), which is characterized by painful and spasmodic cramps in the lower abdomen that start just before or at the start of menses without any pelvic disease. It usually starts in adolescence, six to twenty-four months following menarche.

Menstrual discomfort is a natural feature of the menstrual cycle and is not a sign of any underlying illness. The age range of 20 to 24 is often when primary dysmenorrhea peaks. Backache, diarrhea, headache, exhaustion, edema, nausea, vomiting, mood swings, and stomach cramps are some of the symptoms. [9]

These symptoms, which start before or at the same time as the commencement of menstrual flow and progressively go away after 12 to 72 hours in ovulatory cycles, endure for around three days.

It usually gets better with time and after giving delivery. The most prevalent cause of cramping lower abdomen pain in females is primary dysmenorrhea, which is caused by excessive myometrial contractions, ischemia, and excessive prostaglandin production. This pain is often centered in the pubic area and can extend to the lower back or the back of the legs. [8]

Primary dysmenorrhea's etiology Progesterone regulates the formation of prostaglandins; when progesterone levels fall, prostaglandin levels rise right before menstruation. The uterine muscles tense as a result of these elevated prostaglandin levels, causing discomfort during the menstrual flow. [12]

B. Secondary dysmenorrhea:

The main underlying cause of secondary dysmenorrhea is an infection in the female reproductive system, such as polycystic ovaries. Compared to the ordinary, frequent menstrual cramps, secondary dysmenorrhea discomfort usually begins early in the menstrual cycle and lasts longer. Usually, it is not linked to diarrhoea, exhaustion, vomiting, or nausea.

The dull aching that characterizes secondary dysmenorrhea is linked to dyspareunia, menstrual disorders, and infertility. It had fibroids, endometriosis, adenomyosis, and pelvic inflammatory disorders as its primary causes. [8]

Period discomfort linked to underlying pelvic diseases, including endometriosis, uterine myomas, pelvic inflammatory disease, ovarian cyst, intrauterine adhesions, adenomyosis, uterine fibroids, and cervical stenosis, is known as secondary dysmenorrhea. [13,17,18,19]

It often affects older women in their thirties and forties, unlike primary dysmenorrhea. Secondary dysmenorrhea may also be caused by increased prostaglandin synthesis, although pelvic pathology must be present.

Later in age, women who experience secondary dysmenorrhea may be at a higher risk of acquiring additional chronic pain disorders.

Ischemia is the primary cause of menstruation discomfort. Prostaglandins are released during menstruation, which results in uterine contractions. **In the uterus, prostaglandin has two primary functions:**

i. Spiral artery vasospasm: causes ischemic necrosis, which causes cramps, muscular spasms, and the endometrium's outermost layer to darken.

ii. Increase contractions of the myometrium. [10]

2. DIAGNOSIS

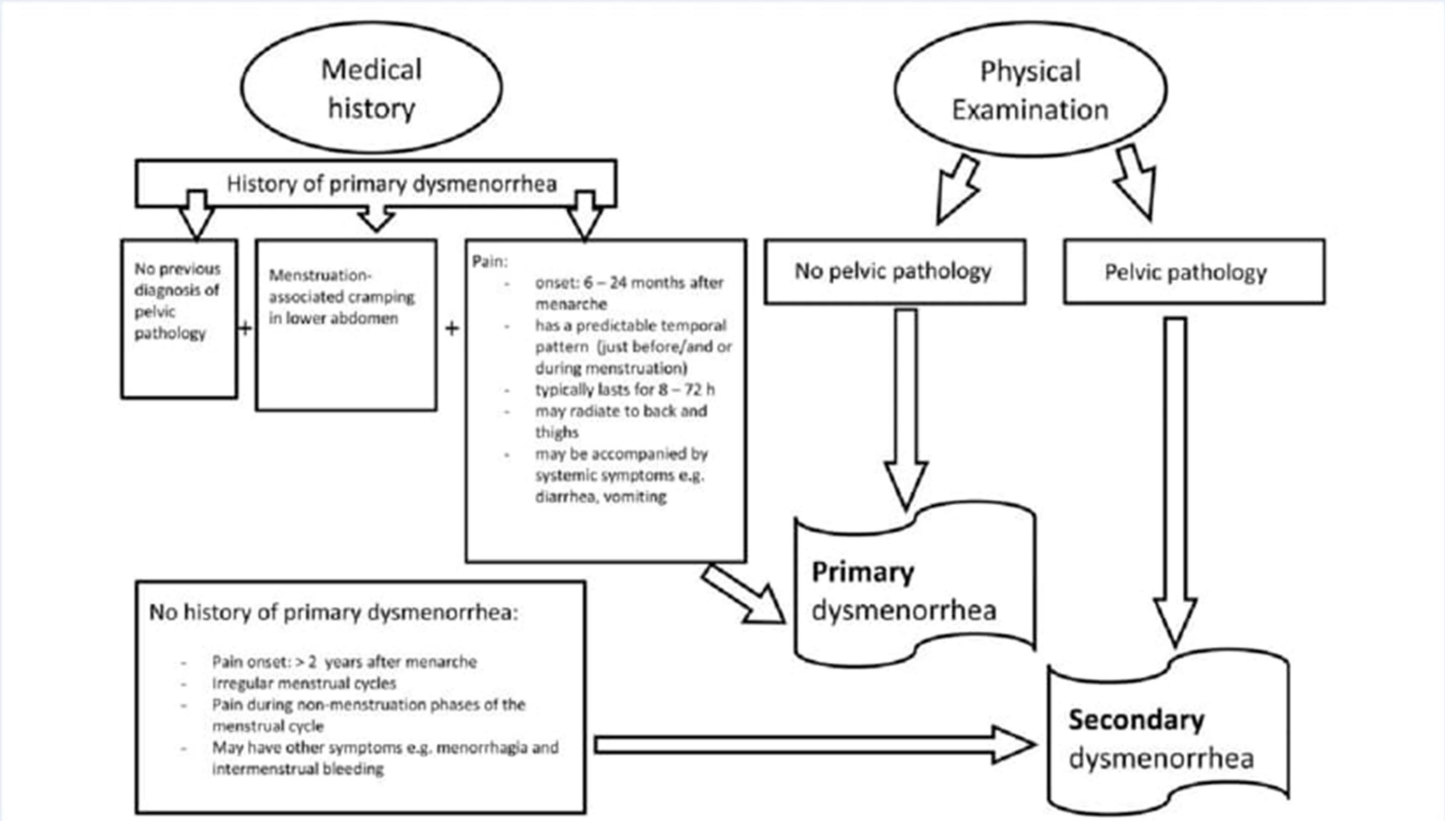

Fig: 1 Diagnosis of primary and Secondary dysmenorrhea

A clinical history and physical examination are the first steps in diagnosing primary dysmenorrhea.

It's critical to rule out pelvic illness.

The patient's family history might be used to distinguish between primary and secondary dysmenorrhea.

The following should be included in the clinical history of dysmenorrhea:
Menstrual history, including age at menarche, length of bleeding, flow interval between periods, and interval between menarche and dysmenorrhea beginning, Characterizing pain includes its forms, location, level of irritation, related symptoms, and time frame.

- A history of dysmenorrhea in the family
- Sexual history including any potential sexual trauma;

- Systemic, gastrointestinal, genitourinary, musculoskeletal, and psychological aspects of the review. [21]

For diagnostic purposes it is important to **differentiate between primary and secondary dysmenorrhea.**

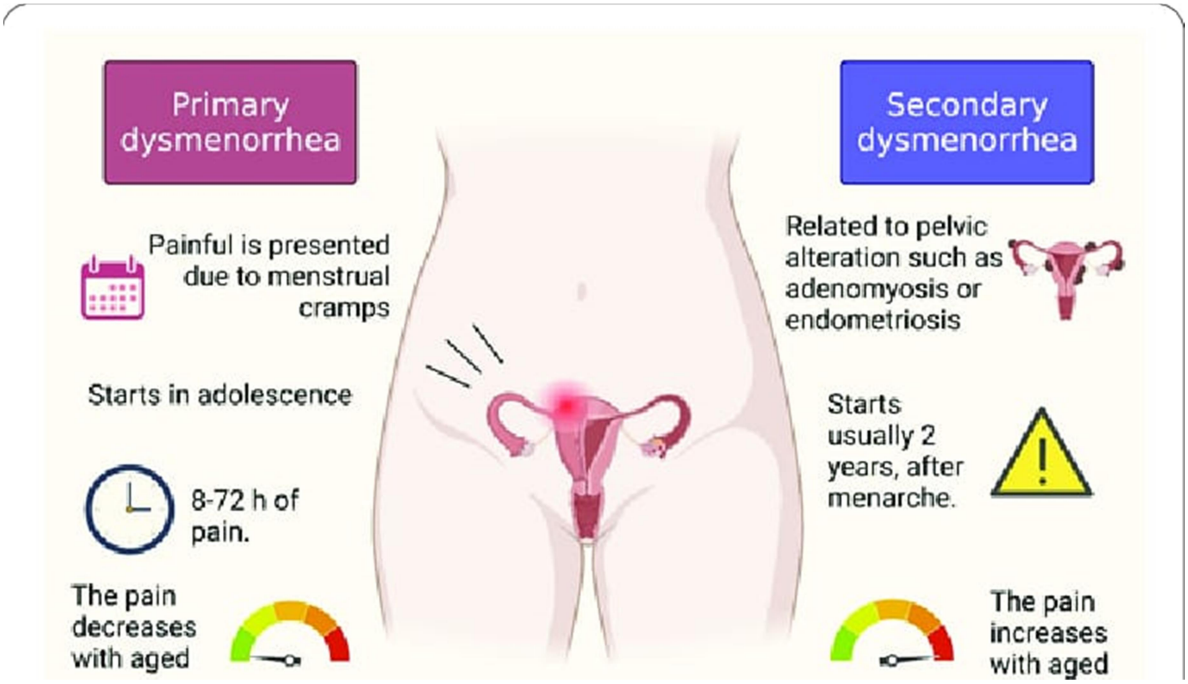

Fig: 2 Differential diagnosis of Primary and Secondary dysmenorrhea: [22]

ETIOLOGY

Numerous ideas have been put out to explain the etiology of dysmenorrhea since the 1960s. These hypotheses cover physical, biochemical, and psychological etiologies.

According to the anatomical viewpoint, there are anomalies in the length or form of the cervix as well as incorrect uterine position. In their study, Zebitay et al. suggested that the volume and severity of dysmenorrhea were positively correlated with cervical length. The biochemical explanation offers the strongest support, according to several additional research.

Associated risk factors for dysmenorrhea include the following:

- Smoking
- Weight loss attempts
- Age (typically) up to 30 years
- Smoking
- Body mass index that is higher or lower than normal Depression/anxiety
- Longer menstrual cycles
- Lounger menarche age
- Nulliparity
- History of sexual assault
- Incomplete healing of the uterine scar (uterine niche) following a previous caesarean section;
- Heavier and longer menstrual flow
- Family history of dysmenorrhea
- Disruption of social networks [23]

DYSMENORRHEA SYMPTOMS AND RISK FACTORS

Many teenagers have other menstruation-related symptoms like headaches and vomiting, even though lower abdominal cramps are the most common dysmenorrhea symptom.

Menstrual flow usually begins with symptoms, although they may appear a few hours before or after initiation and last for the first 24 to 48 hours. Early menarche and longer menstrual cycles are strongly correlated with the severity of dysmenorrhea symptoms. Two studies found a correlation between the severity of dysmenorrhea and low fish intake.

Additionally, smoking cigarettes may lengthen the duration of dysmenorrhea, most likely due to vasoconstriction brought on by nicotine.

Adolescent females are less likely to have premenstrual symptoms, which are more prevalent beginning in the third decade of life and are frequently relieved by proper dysmenorrhea treatment.

Headache, backache, weakness, headaches, dizziness, diarrhea, abdominal discomfort, facial blemishes, flushing, general hurting, irritability, insomnia, depression, lack of appetite, nausea, vomiting, and nervousness. [17, 24, 25]

RISK FACTOR

The first six months following the onset of menstruation are typically when dysmenorrhea does not occur. The following are some of the risk factors that are strongly linked to dysmenorrhea:

Low index of body mass
Early menarche

prolonged menstruation lasting seven days or more for a minimum of three months

pelvic infections
Family or genetic history [21]

3. EPIDEMIOLOGY

In females of reproductive age, the prevalence of Primary Dysmenorrhea (PD) varies from 45% to 95% globally, with 2% to 29% reporting severe discomfort.
The most prevalent menstrual and gynecological condition in women is primary dysmenorrhea. A significant percentage of women who are of reproductive age are impacted. [6]
Unlike secondary dysmenorrhea, its prevalence declines with age and is higher in the second and third decades of life. Because so few women seek medical attention, its prevalence is underreported and hard to assess. The various definitions of dysmenorrhea and the absence of accepted criteria for determining its severity are factors in this. The World Health Organization conducted a comprehensive assessment in 2006 and found that between 17 and 81% of women who menstruate had dysmenorrhea. Merely 12 to 14% of individuals had severe dysmenorrhea.
According to earlier epidemiological studies, between 50 and 90 percent of women of reproductive age worldwide have painful periods, with primary dysmenorrhea accounting for the bulk of these cases [6].

According to reports, 40–50% of adolescent's report having symptoms of primary dysmenorrhea, making this age group the most affected.[9]
Over 50% of teens and 30–50% of women who menstruate have some level of pain due to primary dysmenorrhea. Since many women view pain as a natural part of the menstrual cycle and choose not to seek medical attention despite the significant misery they endure, the incidence of Parkinson's disease (PD), which is most prevalent in the 16–25 age range, is significantly underreported. [8]

4. IMPACTG ON QUALITY OF LIFE:

Dysmenorrhea affects young women's productivity and quality of life in addition to their physical health.

According to earlier research, PD is one of the main reasons why people miss work or school, which results in a loss of 600 million hours annually and a $2 billion cost for the US. The percentage of girls with PD who missed school varied from 14% to 51%. Class attendance was shown to drop from 29% to 50% during menstruation.[21] High rates of absenteeism from work and school, together with a decline in quality of life, are caused by dysmenorrhea. It mostly impacts educational attainment, socialization, and athletic performance. Along with causing sleep disturbances, daytime weariness, and sleepiness, it also affects pain tolerance.

Women experienced sleep disturbances during the first few days of their periods, and 28% said that menstrual discomfort interfered with their sleep, according to the National Sleep Foundation's Women and Sleep Poll. [26]

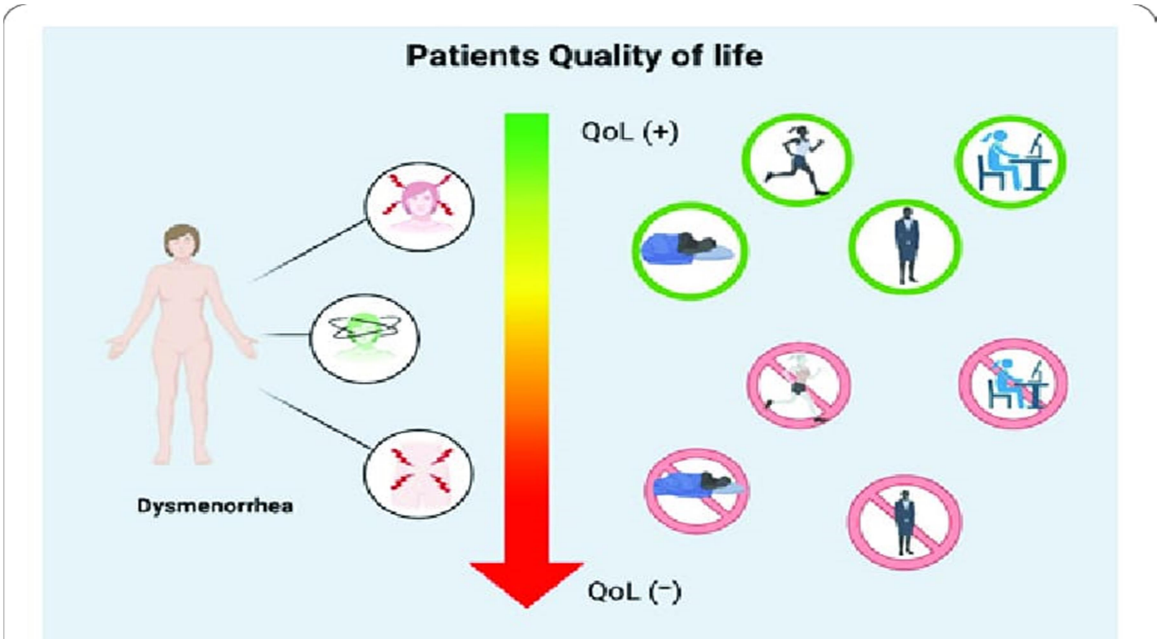

Fig: 3 Patients Quality of life

5. PATHOPHYSIOLOGY

Many theories have been proposed over time to assess the etiology of primary dysmenorrhea. According to experimental and clinical studies, the development of primary dysmenorrhea is significantly

influenced by the release of uterine prostaglandin.
It has been demonstrated that NSAIDs, or nonsteroidal anti-inflammatory medicines, are useful in lowering the amounts of prostaglandins generated during bleeding. Prostaglandins are secreted with the blood during menstruation as a result of endometrial loss.
Other enzymes that degrade cell membranes are released in tandem with this. Tissue ischemia, endometrial disintegration, bleeding, and discomfort are caused by this prostaglandin production, which also constricts tiny endometrial blood vessels and increases myometrial contraction.

An increased cyclooxygenase (COX) enzyme activity was also proposed by another study as a significant factor in the discomfort that women with primary dysmenorrhea endure. This is due to COX's role in prostaglandin synthesis.
A common symptom of dysmenorrhea brought on by severe vasoconstriction is cramping, which usually starts a few hours before the bleeding starts and can continue for several hours or even days following. Starting in the lower abdomen, the discomfort may radiate to the thighs and lower back. Stretching of the peritoneum around the ovary, which also involves contraction-induced nerve impulses, is also blamed for the discomfort. Consequences of dysmenorrhea may include headaches, nausea, fatigue, dizziness, and changes in bowel habits.

Vasopressin also has a role in vasoconstriction. Reduced uterine blood flow, vascular constriction, and elevated intrauterine pressure all contribute to tissue ischemia, which causes dysmenorrhea. Information about pain is carried by sympathetic nerves and tiny afferent fibers that emerge from the pelvic organs. However, since the precise mechanisms of dysmenorrhea are unclear, any treatment approach to inhibit pain perception from these locations is difficult. [27, 29]

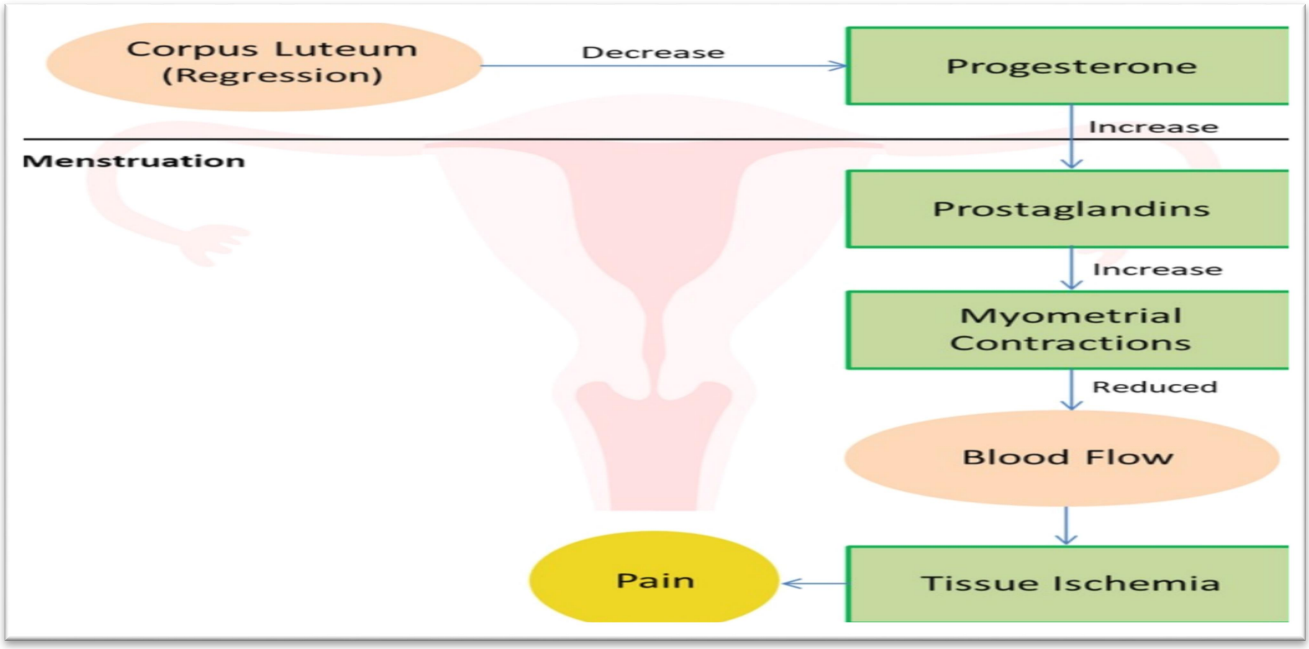

Fig.3 Pathophysiology of Primary dysmenorrhea [27]

6.TREATMENTS: [17,28,29,32, 33,34,35,36,37,38,39,40]

TREATMENT OPTION:

Primary dysmenorrhea can be treated by reducing uterine tone, inhibiting the sense of pain by a direct analgesic effect, or interfering with PG pro duction. Successful therapy and compliance will depend on shared decision-making among the patient, the healthcare provider, and possibly the patient's family (for example, in the case of adolescents) that takes into account the expected effectiveness of treatment, possible side effects, usability, and patient preference. Depending on the patient's stage of life, different treatment approaches may be more or less appropriate because primary dysmenorrhea often begins in adolescence and persists long into adulthood. The collaborative decision-making process need to take these factors into account as well.

Pharmacological treatment:

Both reducing discomfort and blocking the underlying mechanisms causing the symptoms are goals of dysmenorrhea therapy.

Since the degree of discomfort and activity limitation varies among women with dysmenorrhea, treatment should be tailored to each patient's needs.

Oral contraceptives (OCs), opioid analgesics, and nonsteroidal anti-inflammatory medications (NSAIDs) are typically used as first-line treatments for primary dysmenorrhea.

Non-hormonal treatment:

The majority of women find that nonsteroidal anti-inflammatory medicines (NSAIDs) effectively relieve their discomfort and are the first-line therapy for primary dysmenorrhea. They have two methods of operation. They inhibit the formation of PG and stop cyclooxygenase from becoming active. Menstrual pain relief and a restoration to regular uterine contractility patterns are linked to decreased endometrial PG levels. One Another advantage of nonsteroidal anti-inflammatory medications is their direct analgesic action at the central nervous system level. In healthy young women using short courses of NSAIDs (72 hours or less) for the treatment of dysmenorrhea, side effects are rare and can include gastrointestinal symptoms, nephrotoxicity, hematologic abnormalities, and oedema.

Since there is no proof that any one NSAID is better than the others, cost, side effect profiles, and dosage should all be taken into account when choosing a medicine. The best NSAIDs for women with dysmenorrhea were found to be flurbiprofenic acid and Flurbiprofen, although the latter drug is not available in the US, according to a network meta-analysis of 70 studies that ranked NSAIDs according to their relative efficacy as well as their side-effect and safety profiles. The costlier COX-2 inhibitor celecoxib ought to be saved for women with a history of coagulation problems, gastrointestinal adverse effects from other NSAIDs, or peptic ulcer disease.

Nonsteroidal anti-inflammatory medications should be taken according to a prescribed dosage schedule rather than as required; in fact, they can even be begun 1-2 days before to the commencement of menstruation. Compared to a conventional same-dosage regimen, women who follow a regimen with a greater loading NSAID dose followed by a lower scheduled quantity report better pain ratings. Because research indicates that only one-third of young women take the required daily amount and wait an average of 30 minutes after the beginning of pain to take their medicine, the physician should place special emphasis on the dosing schedule. To make sure they don't forget any medicine while in class, patients may need to leave a note for the school nurse.

It should be noted that the following non-NSAID therapeutic alternatives have no established formulations or dosage guidelines, and using them to treat dysmenorrhea is off-label.

- Drugs that raise nitric oxide levels may lessen the pathologic uterine contractions that cause dysmenorrhea because nitric oxide causes smooth muscle relaxation. Additionally, as progesterone levels fall, less nitric oxide is produced. Up to 90% of women report that glyceryl trinitrate patches (0.1 mg) have improved their monthly discomfort, and they work noticeably better than a placebo. But since glyceryl trinitrate can cause treatment-limiting headaches in as many as 25% of patients, it is usually not used as a first-line therapy for menstrual discomfort.
- Magnesium relaxes muscles, induces vasodilation, and lowers PGF2a in menstrual fluid. Numerous studies have demonstrated that magnesium relieves pain better than a placebo, but the formulations and amounts used in each study differed somewhat. There is presently not enough data to suggest magnesium treatment alone.
- Blockers of calcium channels cause muscles to relax. Primary dysmenorrhea discomfort is alleviated by Nifedipine (20–40 mg), most likely by lessening uterine contractions. In a mouse model, Nifedipine was also demonstrated to reduce uterine PG production. Increased heart rate and temporary flushing were among the side effects.
- The treatment of primary dysmenorrhea may benefit from vitamin E. Vitamin E (200–400 international units) was found to considerably alleviate dysmenorrhea in a number of modest investigations. However, a Cochrane Review found no high-quality data supporting its effectiveness and came to the conclusion that more research is required, on the effectiveness of vitamin E in mice indicate that it increases the synthesis of prostanoid vasodilators and inhibits cyclooxygenase activity, which in turn reduces the formation of PG, enhanced oxygen supply to myometrial cells is the outcome of both decreased PG synthesis and enhanced vasodilator production. The improvement in menstrual discomfort is thought to be caused by this enhanced oxygenation.
- Ginger has been used for 2,500 years to treat a variety of illnesses and suppresses the activities of both lipoxygenase and cyclooxygenase. Fifty When 50 women with moderate to severe primary dysmenorrhea received 500 mg of ginger once day in addition to their usual 250 mg dosage of Mefenamic acid twice daily, their pain ratings improved even more. Fifty 750–2,000 mg daily dosages of ginger were utilised in other trials assessing the supplement alone, and the results demonstrated menstrual pain relief comparable to that of NSAIDs. Forty Because ginger also has antiemetic properties, it would help women with related gastrointestinal symptoms by acting centrally by changing neurotransmitter release and peripherally by affecting stomach emptying.

- Dysmenorrhea has been treated with a range of herbal and non-pharmacological treatments, such as rose tea, sweet fennel seed extract, fish oil, krill oil, increased dairy consumption, and a paleo diet. 1, 35 Omega-3 fatty acids, which are included in fish and krill oil, have been linked to a decreased requirement for ibuprofen and have demonstrated some relief from primary dysmenorrhea discomfort. Although there is not enough evidence to support the use of these medications, there are few adverse effects, and if patients find these therapies beneficial, we do not think they should be discouraged from taking them. More excellent research is required. There was no high-quality data for any dietary supplement in a Cochrane Review that looked into using them to treat dysmenorrhea. However, the evidence supporting the possible benefits of fenugreek, valerian, zataria, zinc sulphate, fish oil, and vitamin B1 for treating dysmenorrhea was sparse and of poor quality. Although there is not enough evidence to support the use of these medications, there are few adverse effects, so if patients find these therapies beneficial, we do not think they should be discouraged from taking them. We need more high-quality research.

NSAIDs are Utilized in the treatment of primary dysmenorrhea principally because of their capacity to inhibit cyclooxygenase enzymes which in turn reduce the peripheral synthesis of prostaglandins. This mode of action is essential since the pain experienced in dysmenorrhea is considered to arise as a result of the existence of prostaglandin overproduction. (cyclooxygenase-2 (COX-2) activity) in the endometrium. As a result, NSAIDs are a dependable option for managing dysmenorrhea discomfort. There is little data on which NSAIDs are the safest and most effective for treating dysmenorrhea.

Ibuprofen (400 mg every four hours as prescribed), **Naproxen** (500 mg initially, then 250 mg every six to eight hours as needed), and **Ketoprofen** (25–50 mg every six to eight hours as needed) are the most often used NSAIDs. **Diclofenac sodium** (40-75 mg TDS, then BD oral, 75 mg deep I.M.), **Aceclofenac** (100 mg BD), **Piroxicam** (20 mg BD for two days, followed by 20 mg OD), **Flurbiprofen** (50-100 mg and **Mefenamic acid** (500 mg initially, then 250 mg every six hours as required), and others. However, the negative effects on the gastrointestinal tract are the main cause for concern when it comes to NSAID usage.

Combine hormonal contraceptives:

About 70–80% of women find that combined hormonal contraceptives work well for treating dysmenorrhea. PG, progesterone, and vasopressin production will all decline if ovulation is suppressed and endometrial growth is prevented. Contraceptive intravaginal rings, patches, and the combination oral contraceptive pill (OCP) have all been shown to reduce dysmenorrhea. It's possible that long-term

OCP usage is more beneficial than cyclic use. Deep vein thrombosis (DVT) is the main danger associated with OCPs.

Combining OCPs increases the risk of DVT by one per 1,000 women, with increased risk seen in the first six to twelve months of usage and in users over 40. On a personal level, quitting smoking can help the patient reduce this minimal risk.

Apart from the well-established thrombotic effects of oestrogen, the type of progestin may also influence the risk of DVT, however there is conflicting and little research on this topic. From 22 to 26 A second-generation progestin, such as norgestrel or levonorgestrel, may carry a lesser risk than a third-generation progestin. Although the evidence is conflicting, the danger with drospirenone may be significantly greater.

Primary dysmenorrhea also seems to respond well to progesterone-only contraceptive regimens. According to 85% of users reported that their dysmenorrhea improved after using an etonogestrel (68 mg) contraceptive implant. Although there isn't much information available for alternative progesterone-only contraceptives, they are nevertheless available since they stop menstrual periods and prevent ovulation. Medroxyprogesterone acetate depot

This process is probably how progesterone-only birth control tablets and the levonorgestrel intrauterine device (IUD) reduce symptoms.

While progesterone-only treatments frequently result in irregular bleeding, individuals with primary dysmenorrhea usually do not have menstrual pain in conjunction with irregular bleeding since it is not linked to ovulatory cycles.
Depot medroxyprogesterone acetate has been linked to bone mineral density loss, which seems to go away after treatment is stopped. It is uncertain how likely fractures will occur in people who use DMPA in their teens. Although discussing this result should be part of shared decision making, its application is not prohibited if a patient's requirements are better served by the advantages for primary dysmenorrhea and maybe contraception.

About 20% of women using levonorgestrel IUDs and 50% of DMPA users experience amenorrhoea after a year of usage. While DMPA frequently causes additional adverse effects including weight gain, long-term investigations have not demonstrated that the etonogestrel contraceptive implant causes

weight changes. Additionally, the incidence of DVT is lower with progesterone-only contraceptives than with combination hormonal contraceptives.

The combined hormonal contraceptives work by decreasing the endometrial lining, which also produces prostaglandins, which in turn reduces menstrual blood volume and prostaglandin secretion, which in turn reduces intrauterine pressure and uterine cramping. Combined oral contraceptives (COCs) are typically used for patients who do not respond to NSAID treatment. COCs are effective in lowering the prevalence of dysmenorrhea through the inhibition of ovulation and endometrial proliferation.

Since the use of combined oral contraceptives is vital in circumstances that induce secondary dysmenorrhea, it is necessary to initiate medical therapy for all women complaining of dysmenorrhea without waiting for the results of additional examinations, even if organic pathology is suspected.

Progestin

As an alternative to COCs, depot medroxyprogesterone acetate (DMPA) suppresses ovulation and provides similar pain relief with fewer adverse effects.
In women, DMPA usage has been linked to a decreased incidence of dysmenorrhea.
Menstrual flow is decreased with the progesterone-only tablet, and amenorrhea may occur in as many as 10% of users.

Non-pharmacological treatment:

Females with primary dysmenorrhea frequently use self-care techniques and non-pharmacological therapy to reduce mild to moderate pain or discomfort.
Applying heat to the lower abdomen and consuming hot liquids might provide relief.
Pain alleviation may also be aided by relaxing or sleeping, reducing stress, and eating breakfast.
Both **acupressure and acupuncture** are techniques used to stimulate specific anatomical points to reduce pain.
Transcutaneous electrical nerve stimulation and acupressure/acupuncture physical activity provide adequate pain alleviation.

Acupressure and acupuncture are two techniques for pain relief that involve stimulating specific anatomical sites. Menstrual pain may benefit from a number of locations on the auricle and along the medial calf, particularly three thumb breadths above the medial malleolus posterior to the tibia's border

(SP6 point) and three thumb breadths below the tibia's medial condyle along the line that connects the medial condyle to the medial malleolus (SP9 point). At these locations, acupressure applies a forceful massage, whereas acupuncture employs thin needles. Changes in pain modulation, an increase in uterine blood flow due to the ovarian sympathetic nerve reflex, and a drop in PG levels are all potential pain relief mechanisms.

Some women report pain alleviation by continuous heat given to the suprapubic area, but further high-quality studies are required to verify its effectiveness. Local heat has a dilution impact on intravascular PGs, improves tissue oxygenation, and increases blood flow. Heat may be delivered in a number of ways, but Their Care Heat Wraps use a unique technique that uses iron's interaction with oxygen and water to emit heat over the course of eight hours. When applied to the quadriceps muscle, There Care Heat Wrap increased blood flow to the skin by over 100% and to the underlying muscle by almost 150%. Heat patches are readily available, reasonably priced, thin enough to wear under clothing, and versatile enough to be used with various forms of therapy.

Yoga and exercise may also help with dysmenorrhea symptoms in a number of ways, such as by promoting endorphin production and blood flow, as well as by reducing tension and anxiety. A review examining the impact of exercise on primary dysmenorrhea only discovered one poorly conducted randomised controlled study. According to this study, exercise did reduce dysmenorrhea symptoms, and the effects persisted for the three menstrual cycles that were monitored.

CONCLUSION:

The treatments remain the primary and most effective approach for managing primary dysmenorrhea, providing rapid relief from menstrual pain through pharmacological interventions. NSAIDs are widely used due to their ability to reduce prostaglandin production, while hormonal contraceptives offer long-term symptom control by regulating the menstrual cycle. Other analgesics and antispasmodics serve as supportive treatments. However, prolonged use of these medications may result in side effects, necessitating careful consideration of patient-specific factors. Future research should focus on developing safer and more targeted therapies to enhance treatment efficacy while minimizing adverse effects, ensuring better long-term management of PD.

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