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More Than Just Cramps: A Holistic Review of Dysmenorrhea

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ABSTRACT:

Dysmenorrhea, typified by excruciating menstrual cramps originating by a prevalent condition in the lower abdomen that significantly disrupts the daily lives and quality of life for those who experience menstruation. It is mainly classified into two types; one is primarily dysmenorrhoea, which happens without any detectable pelvic disease and another one is secondary dysmenorrhoea, which is linked to underlying health issues like endometriosis or uterine tumours. This evaluation offers a thorough summary of the epidemiology, pathophysiology, diagnostic approaches and current management strategies for dysmenorrhea. The function of prostaglandins in the development of primary dysmenorrhea and the impact of chronic inflammatory conditions in secondary cases are highlighted. Current treatment options, including NSAIDs, hormonal therapies, and emerging non-pharmacological interventions such as dietary modifications and physical therapy, are critically examined. Emphasis is placed on the need for individualized treatment approaches and the importance of early diagnosis to prevent chronic pain syndromes and improve patient outcomes.

Key words : Dysmenorrhoea, Risk factors, Quality of life of adolescent and women's, treatment

Introduction :

Dysmenorrhea, often referred to as menstrual discomfort, describes uterine cramps that take place prior to or during a menstrual period. This pain is usually experienced in the lower belly and can also spread to the lower back and legs. It is frequently associated with additional symptoms such as nausea, vomiting, nervousness, headache, and others, typically persisting for one to three days(1). Dysmenorrhea is a normal experience for most women during their reproductive years. Its symptoms typically emerge before or during menstruation and include cramping or pain in the lower abdomen. These may be associated with additional symptoms such as fatigue, perspiration, head pain, queasiness, throwing up, and loose stools (2,3). Dysmenorrhea have the ability to negatively impact quality of life, cause missed days from work or school, and raise the likelihood of developing depression and anxiety (4).The World Health Organization identifies it as the leading factor associated with chronic pelvic pain(5). It is mainly classified into two types; one is primarily dysmenorrhoea and other one is secondary dysmenorrhoea.(6). Primary dysmenorrhea occurs in the absence of underlying pelvic disorder. It is due to elevated concentrations of prostaglandins and leukotrienes, which trigger inflammation, leading to uterine contractions and cramping pain(7). Secondary dysmenorrhea due to an underlying pelvic disorder or a known medical condition and represents approximately 10% of all dysmenorrhea cases (8).

Risk Factors:

The chances of primary dysmenorrhea is greater in individuals under 30 years old, those persons which have less than 20 kg/m^2 of body mass index, smokers, and those who experienced menarche before age 12. Sleep quality, nutritional status, and anemia are all contributing factors that can enhanced the risk of causing dysmenorrhea (36). Other contributing factors include having longer or heavier menstrual periods and a background of sexual assault. Furthermore, conditions such as never having given birth (nulliparity), premenstrual syndrome (PMS), and past pelvic inflammatory disease (PID) are associated to a greater likelihood of experiencing this condition. On the other hand, supportive influences include getting Elderly, Parenting, Consistent exercise, and the use of oral contraceptives (9,10). Secondary dysmenorrhea is linked to infertility, particularly when it results from endometriosis (11). When secondary dysmenorrhea occurs alongside higher numbers of pregnancies, childbirths, and a greater body mass index, it may indicate a cause other than endometriosis (12).

Manifestation of symptoms:

Dysmenorrhea is typically described as cramping discomfort in the lower abdominal area that begins with the start of menstruation and may last for 8 to 72 hours (13).It is often linked to symptoms like nausea, vomiting, loose stools, headaches, muscle spasms, lower back discomfort, tiredness, and, in more severe instances, trouble sleeping (8,14). In this study including over about 400 patients with dysmenorrhea, 47% described their pain as moderate, while 17% rated it as severe on a 0 to 10 graphical rating scale (15). Primary dysmenorrhea usually begins around six to twelve months after menstruation first starts, aligning with the initiation of ovulatory cycles, and generally returns with every menstrual cycle. Symptoms of secondary dysmenorrhea can appear right after the beginning of menstruation or develop in older age(8). or develop In older age(8). Indicators that more strongly suggest secondary dysmenorrhea include variations in pelvic discomfort or a progressive worsening of its intensity, irregular uterine bleeding, unusual vaginal secretions, and discomfort during sexual activity (dyspareunia) (8,16).

Diagnosis :

The patient's history should clarify if the pain occurs with menstruation and note any over-the-counter treatments they've used. A family history of similar symptoms could indicate endometriosis, while a past pelvic surgery might point to adhesions (8). It's important to thoroughly explore symptoms, as many patients believe that pain is a normal aspect of menstruation (17,18). In a study involving over 4,300 patients seeking treatment for dysmenorrhea symptoms, almost two-thirds were told there was nothing wrong—an outcome that was even more common when symptoms started during adolescence. There is often a significant delay between the start of symptoms and receiving a diagnosis, averaging 5.4 years for adolescents and 1.9 years for adults (19). In cases of secondary dysmenorrhea, it can take anywhere from four to eleven years from the onset of symptoms to receive a confirmed diagnosis through surgery (20).

A pelvic exam is not required for patients who present with symptoms typical of primary dysmenorrhea. Pregnancy should be excluded in sexually active patients. If symptoms suggestive of secondary dysmenorrhea are present, a pelvic examination should be conducted, and ultrasonography should be performed to check for anatomical issues or other underlying conditions (8).

Treatments:

If a patient's history aligns with primary dysmenorrhea or suggests secondary dysmenorrhea caused by endometriosis, empiric treatment should be started (8,21).

Nonsteroidal anti-inflammatory drugs (NSAIDs):

Nonsteroidal anti-inflammatory drugs (NSAIDs), proven to be more effective than both placebo and acetaminophen, are the preferred initial treatment for primary dysmenorrhea.NSAIDs work by inhibiting the production of prostaglandin (22,23). Frequently prescribed NSAIDs include ibuprofen, given at an initial dose of 800 mg, then 400 to 800 mg every eight hours, and naproxen, starting with 500 mg, followed by 250 to 500 mg every 12 hours, Both drugs are available without a prescription (23). NSAIDs may also help decrease heavy menstrual bleeding as an added benefit (22). Between 25% and 50% of patients fail to take the correct dosage needed for effective relief (7). Irregular menstrual cycles can make it difficult to time treatment properly. Additionally, NSAIDs can cause side effects such as indigestion, headaches, and drowsiness, which may restrict their use (24).

Hormonal Therapy :

Hormonal therapy is also regarded as a primary treatment option for dysmenorrhea and may be used alone or alongside NSAIDs in patients who do not intend to become pregnant (7,8). Hormonal therapies alleviate dysmenorrhea symptoms by thinning the endometrial lining and decreasing the production of cyclooxygenase-2 and prostaglandins (7). Hormonal therapies can also offer additional benefits, such as reducing heavy menstrual bleeding (25), premenstrual emotional changes(26), Acne or excessive hair growth, bone mineral density, and a reduced risk of developing endometrial, ovarian, and colorectal cancers (27). Combined estrogen-progestin oral contraceptives are effective in treating primary dysmenorrhea in both adolescents and adults, resulting in notable pain relief and a reduced need for analgesics in terms of both frequency and dosage (28,29). Frequently reported side effects of combined oral contraceptives include nausea, headaches, and weight gain (29). Daily continuous norethindrone (5 mg) is equally effective as cyclic combined oral contraceptives in managing dysmenorrhea (30), However, this dosage has not yet been approved by the U.S. Food and Drug Administration for use as a contraceptive (8). Other hormonal contraceptive methods can also be used to manage dysmenorrhea, such as transdermal patches, vaginal rings, progestin implants, intramuscular or subcutaneous injections of medroxyprogesterone (Depo-Provera), and the levonorgestrel-releasing intrauterine device (Mirena) (8,27).

Non-pharmacologic therapies :

Exercise helps lessen both the severity and length of pain experienced during primary dysmenorrhea (31). According to a Cochrane review, engaging in exercise—regardless of its intensity—for 45 to 60 minutes at least three times a week may significantly alleviate menstrual pain linked to moderate to severe dysmenorrhea. While exercise might not decrease overall menstrual flow or pain intensity as effectively as NSAIDs, it offers numerous

additional health benefits and should be discussed with patients as a potential treatment option (32). High-frequency transcutaneous electrical nerve stimulation (TENS) has been shown to effectively reduce pain in primary dysmenorrhea, leading to lower reported pain levels, longer-lasting relief, and reduced need for pain medication compared to sham TENS treatments.(33,34). A small randomized controlled trial found that heat therapy effectively alleviates menstrual pain (35).

Conclusion:

Dysmenorrhoea is a prevalent and often debilitating condition that significantly impacts the physical, emotional, and social well-being of individuals, particularly adolescents and young women. Despite its high prevalence, it is frequently underdiagnosed and undertreated. A thorough understanding of its types, risk factors, clinical presentation, and diagnostic approaches is essential for timely intervention and effective management. Increased awareness, early diagnosis, and individualized treatment strategies—including lifestyle modifications, pharmacological therapies, and addressing underlying causes—can greatly improve quality of life. Further research and education are needed to reduce stigma and promote proactive menstrual health care.

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