REVIEW

Conventional and Alternative Management of Dysmenorrhea - A Narrative Review

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To cite this article: Nnaji AC and Ijomone OR. Conventional and Alternative Management of Dysmenorrhea - A Narrative Review. Journal of Basic and Social Pharmacy Research, 2021;2(2):45-56
ISSN: 2705-3245

ABSTRACT

Introduction: Dysmenorrhea also known as painful menstruation is a public health problem with high prevalence among adolescents. It is defined as a severe, painful, cramping sensation within the lower abdomen occurring just before, during or few days after menstruation starts. Dysmenorrhea can negatively affect a woman's quality of life and interfere with daily activities. The two categories of dysmenorrhea are primary and secondary. Dysmenorrhea occurring in the absence of any pathological condition of the pelvis is known as primary dysmenorrhea while dysmenorrhea occurring in the presence of pathological condition of the pelvis is called secondary dysmenorrhea.
Aim of review: The purpose of this review is to present a general overview of the types, epidemiology, diagnosis and available treatment options of both primary and secondary dysmenorrhea.
Methods: PubMed, Google Scholar and Medline search engines (2000 to 2021) were used to conduct searches of relevant articles on dysmenorrhea. Citation lists of publications, including studies for randomized controlled trials (RCTs) and review articles were searched.
Conclusion: Although prevalence is difficult to determine, dysmenorrhea may affect as high as 90% of menstruating women. Risk factors for dysmenorrhea may include smoking, early menarche, nulliparity, and family history. Analgesics and oral contraceptives are the mainstay of treatment for primary dysmenorrhea. Complementary and alternative treatments options such as herbal medicines, exercise and diet are also available. Addressing the underlying pathology of secondary dysmenorrhea is the main stay for its management.

Keywords: Management of Dysmenorrhea, Menstruation, Non-Steroidal Anti-inflammatory Drugs (NSAIDs), Oral contraceptives (OCS), Complementary and alternative treatment

INTRODUCTION

Dysmenorrhea is defined as a severe, painful and cramping sensation within the lower abdomen occurring just before, during or few days after menstruation[1-10]. This is often accompanied by other symptoms, such as sweating, headaches, nausea, vomiting, diarrhoea, and fatigue[1-8]. Dysmenorrhea is also known as painful menstruation. It is the most prevalent gynaecological problem affecting women of different ages and races. Data from the World Health Organization (WHO) show that dysmenorrhea is the most common cause of chronic pelvic pain[5]. Other similar but less occurring pelvic pain are

dyspareunia and noncyclical chronic pelvic pain[4-10].

Dysmenorrhea places great burden on individuals as well as to the lager society. The burden of dysmenorrhea includes medical, financial as well as social burden to the individual and the larger society[1-6]. Literature reviews show that as high as 14-90 percent of young women of reproductive age experience dysmenorrhea[2,4,6,11]. Dysmenorrhea is a leading cause of periodic short-term morbidity in adolescents. The incidence of dysmenorrhea could be so distressing to warrant reduction in daily activities leading to social withdrawal. As high as 33% of women experiencing dysmenorrhea may have severe pain that may incapacitate them for 1 to 3 days within each menstrual cycle[4,7,8,12]. This may lead to absence from school or work[4,7,8,12]. Overall, dysmenorrhea has a high impact on women's lives, resulting in lower academic performance in adolescents, poor quality of sleep, mood swings, anxiety and even depression[1-9].

Dysmenorrhea could have diverse socio-economic consequences apart from its effect on the quality of life of affected individuals[1-10]. Consequently, dysmenorrhea may lead to economic losses via costs of medications, medical care and decreased productivity[6-10].

The incidence of self-treatment by young adults experiencing dysmenorrhea is high[7-9]. Some studies among United States and Canadian adolescents revealed that only 14% to 16% sought advice from a clinician prior to self-treatment[7-9]. This could lead to several medication related problems such as wrong frequency of dosage, adverse drug reactions, over dosage/under dosing, unnecessary polypharmacy and ineffectiveness. Up to 78% of the study group reported indulging in self-medication[7-9]. Many resort to friends for advice on how to manage menstrual pain[11,12].

Given that dysmenorrhea might lead to some long-term complications especially when there is an underlying condition and may increase a woman's chances of developing other chronic condition later in life, it is critical to treat menstrual pain in order to reduce the chances of these scenerios[13,14].

METHODS

Searches were made on the following databases PubMed, Google Scholar and Medline for papers published between January 2000 to December 2021. Keywords used were dysmenorrhea, treatment, menstrual pain, period pain, herbs, alternative and complementary treatment and pelvic pain.

Inclusion Criteria: papers from randomized clinical trials (RCTS) and review articles whose topic is about dysmenorrhea were included in this review.

Exclusion Criteria: papers with non-probability sampling techniques and inadequate samples size were excluded.

RESULTS

A total of 145 relevant articles were found using PubMed, Google Scholar and Medline search engines. These articles were filtered for relevance to the aim of this review and a total of 65 articles were finally reviewed to arrive at the findings of this article

DISCUSSION AND REVIEW

Epidemiology

Dysmenorrhea has been identified as a public health concern because of its high prevalence, the degree of discomfort felt by the sufferer as well as the reduction in the quality of life of young females[14-17]. Dysmenorrhea is the most common gynaecologic complaint and the leading cause of recurrent absence from school or work among female adolescents[3-17]. The exact prevalence of dysmenorrhea is difficult to estimate, as it is variably reported[11-15]. The general prevalence ranges from 14 to 90 % especially for those aged 17–24 years[11-19]. A Mexican study found a prevalence of 48.4% among young school students[16]. In a study among older adolescent urban Swedish girls, a majority (72%) reported experiencing

dysmenorrhea, and approximately 15% of adolescents described the disorder as severe[14]. A similar study in Ethiopia reported a prevalence of 85.4% for primary dysmenorrhea[19]. A school absenteeism rate of 14–52% has been reported among U.S. adolescents with dysmenorrhea[15].

In Nigeria, a 2010 study in Enugu, Southeast Nigeria reported a 25% prevalence of dysmenorrhea, with 25% of the study group having debility severe enough to prevent them from attending school[20]. A similar study in 2014 in Osogbo, Southwest, Nigeria reported much higher prevalence at 77.8%[21]. Similarly, a 2017 study in South-West town of Ibadan, also in Nigeria, reported 83.1% prevalence of primary dysmenorrhea in adolescents attending a tertiary institution[22].

Classification of Dysmenorrhea

Dysmenorrhea is commonly divided into primary and secondary dysmenorrhea based on pathophysiology[3-10]. Primary dysmenorrhea refers to painful menstruation occurring in women without any known pelvic related issues and may begin from early adolescence[1-12]. Primary dysmenorrhea usually sets in within 6 to 12 months after menarche. This may peak during the late teens or early twenties[23-25]. The prevalence of moderate to severe primary dysmenorrhea usually decrease as a woman gets older. Childbirth is associated with a reduction in the prevalence and severity of primary dysmenorrhea. Improvements are seen in women after bearing first child but no improvement in pregnancies that ended in miscarriage or abortion[8,9,26].

Secondary dysmenorrhea on the other hand results from specific identifiable pathological condition of the pelvis. Secondary dysmenorrhea may be due to presence of myomas, adenomyosis, endometrial polyps, the use of an intrauterine contraceptive device, endometriosis, pelvic inflammatory disease or interstitial cystitis[2,4,27]. Secondary dysmenorrhea is common in older women with no previous history of dysmenorrhea[26].

Aetiology and Pathophysiology

Risk Factors

Identifiable risk factors for dysmenorrhea are usually those related to primary dysmenorrhea. They include age younger than 20 years, nulliparity, depression, anxiety, body mass index that is less than 20, smoking, menarche occurring at age below 12 years, long menstrual cycles, heavier menstrual flow, a history of sexual assault, attempts to lose weight and a family history of dysmenorrhea. Others are disruption of social networks, premenstrual symptoms, irregular menstrual cycles, clinically suspected pelvic inflammatory disease and sterilization[1,4,8,19]. The protective factors for dysmenorrhea include regular exercise, oral contraceptive use and early childbirth[28,29].

Primary Dysmenorrhea

Several factors are at interplay in the pathophysiology of primary dysmenorrhea. The pathophysiology is most related to the inflammatory effects of endogenous prostaglandins and leukotrienes. Increased production of prostaglandins (PGs) within the uterus, particularly F2α (PGF2α), has been identified as the leading cause of primary dysmenorrhea[10,30-33]. PGF2α is a potent myometrial stimulant and vasoconstrictor found within the endometrium[30]. The release of PGF2α into the menstrual fluid results in contraction of the uterine walls and associated pelvic pain. Higher concentrations of PGF2α have been found within the endometrium of women with primary dysmenorrhea when compared with women who are eumenorrheic[2]. The relief of pain in patients with dysmenorrhea when given cyclooxygenase (COX-1 and COX-2) inhibitors supports the assertion that dysmenorrhea is prostaglandin-mediated[4-19]. Progesterone level usually drop immediately before menstruation causing increased production of PGs. The increased production of PGs' results in dysmenorrhea[12]. Primary dysmenorrhea occurs only in ovulatory cycles. Dysmenorrhea occurring in anovulatory cycles is of the secondary type[12,34]. The above assertion is supported by

the fact that primary dysmenorrhea can be readily relieved with administration of oral contraceptive pills, which inhibit ovulation[34].

Vasopressin further causes increased uterine contractility leading to ischemic pain due to vasoconstriction[28-34]. Leukotrienes are thought to increase the sensitivity of pain fibers within the uterus. Significant amounts of leukotrienes within the endometria of some women with primary dysmenorrhea has been linked to cause of poor response to treatment with prostaglandin antagonists[9,15,35].

Secondary Dysmenorrhea

A history that is inconsistent and/or physical findings of a pelvic mass, abnormal vaginal discharge, or pelvic tenderness that is not limited to the time of the menstrual period suggest a diagnosis of secondary dysmenorrhea[15,18,21,34].

Elevated prostaglandins in the presence of pelvic pathology also play a role in secondary dysmenorrhea. Any pathological condition affecting the pelvic viscera can result to pelvic pain. Several pathological conditions may be involved in the pathogenesis of secondary dysmenorrhea[2,5,8,14-34]. Some of these conditions include endometriosis, pelvic inflammatory disease (PID), ovarian cysts, uterine leiomyomata, cervical stenosis and adenomyosis. Others are fibroids, uterine polyps, intrauterine adhesions, congenital obstructive malformations, intrauterine contraceptive device (IUCD), or intrauterine device (IUD), pelvic adhesions, transverse vaginal septum, pelvic congestion syndrome and Allen-Masters syndrome[34-44]. Endometriosis and adenomyosis have been identified as the two most common causes of secondary dysmenorrhea[27,45-47].

Endometriosis

Endometriosis is a complex disorder characterized by the presence of endometrial glands and stroma outside of the uterus[4-18]. Patients with persistent, clinically significant dysmenorrhea who do not respond to conventional treatments may be evaluated for endometriosis[36-40]. Evaluation for endometriosis is crucial when no other pathological condition has been identified by history, physical examination and pelvic ultrasonography[48,49].

Risk factors for endometriosis include early age onset of dysmenorrhea, persons previously treated with oral contraceptives (OCs) over a long period and those with a family history of dysmenorrhea[48-52]. Presenting patients with a first-degree relative that previously suffered endometriosis have a 7 to 10-fold increased risk of developing endometriosis[49].

Adenomyosis

Adenomyosis involves the invasion of endometrial glands and stroma into the myometrium[22,44]. The primary clinical manifestations of adenomyosis are uterine bleeding and secondary dysmenorrhea[36,37]. It is suggested that the pathophysiology of adenomyosis associated dysmenorrhea involves oxytocin, inflammatory factors, and prostaglandin F2α which causes the induction of uterine smooth muscle contractions[22]. The diagnosis of adenomyosis is confirmed through transvaginal ultrasonography and magnetic resonance imaging[25,36].

Clinical Presentation and Diagnosis

There are no specific tests for diagnosis of primary dysmenorrhea. Diagnosis is achieved through history and physical examination. The most common clinical symptoms of primary dysmenorrhea are cramping in the lower abdomen, pain in the lower abdomen, low back pain, pain radiating down the legs, nausea, vomiting, diarrhoea, fatigue, weakness, fainting and headaches[2,4,8,48].

History taking involves assessing the onset, duration, type and severity of pain. Other relevant history includes confirming age at menarche, cycle regularity, cycle length, last menstrual period, including duration and amount of menstrual flow[7-9]. Other aspects of history taking include; noting the patient's

sexual history, including the choice of contraceptive methods. Effectiveness or otherwise of oral contraceptives should be ascertained. Clinicians should determine factors that worsen or reduce the symptoms and assess the degree of disruption to academics as well as the social life of the patient. Questions pertaining to sexual abuse are relevant because it is reportedly associated with dysmenorrhea and chronic pelvic pain[1-15].

Pattern of pelvic pain from secondary dysmenorrhea may be different from the ongoing discussion. Such pain is usually not limited to the onset of menstruation but may be associated with abdominal bloating, pelvic heaviness, and back pain. In such cases, the resulting pain increases gradually during the luteal phase of menstrual cycle until it peaks around the onset of menstruation[43].

Physical Examination

An abdominal examination is sufficient in young adolescents with history suggestive of dysmenorrhea but are not yet sexually active. A pelvic examination is recommended in females who are already sexually active. This will help to screen for sexually transmitted diseases and any other underlying pathology[12-14]. For primary dysmenorrhea, normal findings are observed upon pelvic examination. A physical examination revealing a normal-sized, mobile, nontender uterus and the absence of mucopurulent discharge, uterosacral nodularity, or an adnexal mass is consistent with primary dysmenorrhea[2].

Those with secondary dysmenorrhea may reveal the following; a fixed uterus or reduced uterine mobility, adnexal masses or tenderness, presence of whitish to coloured foul smelling vagina exudates, infertility, and uterosacral nodularity especially in patients with endometriosis; mucopurulent cervical discharge in those with PID; and abnormal bleeding, uterine enlargement or asymmetry in patients with adenomyosis[39-41]. When secondary dysmenorrhea is suspected, laboratory investigation may be carried out. Some of the laboratory finding that may be utilized include abdominal and transvaginal ultrasonography or laparoscopy. Others are hysterosalpingography and rarely hysteroscopy[34-38].

Treatment of Dysmenorrhea

Treatment for dysmenorrhea aims to relieve pain or symptoms either by affecting the physiological mechanisms behind menstrual pain (such as prostaglandin production) or by relieving symptoms that typically accompany or immediately precede the onset of menstrual flow. Pharmacological options have remained the most reliable and effective treatment for dysmenorrhea. The use of nonsteroidal anti-inflammatory drugs (NSAIDs) and combination oral contraceptives (OCs) are the commonly recommended therapeutic options for the management of primary dysmenorrhea[14,16,20,34].

To effectively manage secondary dysmenorrhea, correction of the underlying pathology is required. Medical and surgical procedures exist to treat pelvic pathology and consequently ameliorate manifesting symptoms of secondary dysmenorrhea[15]. Analgesics may be used adjunctively in the management of secondary dysmenorrhea. The major presenting differences between primary and secondary dysmenorrhea are presented in Table 1 below.

Pharmacological Treatment

Non-steroidal anti-inflammatory drugs (NSAIDS)

The most common treatment for dysmenorrhea is use of NSAIDs. They act by blocking cyclooxygenase-1 (COX-1) or cyclooxygenase-2 (COX-2) enzyme substrates[4-8]. They are also involved in decreasing intrauterine pressure and lowering prostaglandin F2α (PGF2α) levels in menstrual fluid and consequently reducing menstrual pain[3,6,10]. COX-2 NSAIDs in addition to specifically blocking COX-2 enzymes pathway also alleviate symptoms

by further decreasing endometrial prostaglandin concentrations[9-11].

NSAIDS treatment are recommended to be initiated two to three days prior to the commencement of menses[19]. NSAIDS are generally well tolerated[18-20]. Some patients may experience gastrointestinal (GI) upset. Others may experience serious adverse effects such as upper gastrointestinal bleeding and renal dysfunction[34].

NSAIDs are contraindicated in patients with renal insufficiency, peptic ulcer disease, gastritis, bleeding diatheses, or aspirin hypersensitivity[40]. Where necessary, gastroprotective agents may be used concomitantly with NSAIDS to minimize the risk of GI side effects. Examples of NSAIDS in clinical use are Diclofenac, Ibuprofen, Ketoprofen, Mefenamic acid and Naproxen.

Table 1: Differential Diagnosis of Primary and Secondary Dysmenorrhea[2-25].

	PRIMARY DYSMENORRHEA	SECONDARY DYSMENORRHEA
1	Onset shortly after menarche	Onset can occur at any time after menarche
2	Presence of back and thigh pain, headache, diarrhea, nausea, and vomiting	Presence of other gynecological symptoms; dyspareunia, menorrhagia.
3	Lower pelvic or abdominal pain within menstruation lasting 48-72 hours	Change in time of pain onset during menstrual cycle or in intensity of pain
4	Cramping pain often start several hours before or just after the menstrual flow	Pain may not be related to onset of menses and may continue for loner period after menses.
5	Often unremarkable pelvic exams finding	Pelvic abnormality on physical examination

Opioids and other analgesics

The use of narcotics as an alternative for pain management in dysmenorrhea may be useful in certain emergency conditions. However, patients whose symptoms are refractory to normal NSAIDS may have an existing underlying pelvic condition[21-28].

A 2010 study found that montelukast may be effective in alleviating pain associated with dysmenorrhea in women. Montelukast is seen as safe and does not influence hormonal levels. Therefore, montelukast is a clinically reasonable management option to consider before prescribing a hormonal agent[53]. Simple analgesics, such as acetaminophen, may also be useful, especially when NSAIDs are contraindicated.

Contraceptives

Oral, intravaginal, and intrauterine hormonal contraceptives are variously recommended treatment of primary dysmenorrhea. Oral contraceptives (OCs) act by blocking monthly ovulation leading to reduction in menstrual flow and relieve of pain. Combination OCs (COCs) act by suppressing the hypothalamic-pituitary-ovarian axis causing the inhibition of ovulatory process and terminating the production of PGF2a in the late luteal phase[4-12]. This results in the reduction in quantity of menstrual flow and consequently relieves symptoms. Oral contraceptives can effectively prevent dysmenorrhea completely even though this indication is off label.

Patients who do not desire to get pregnant but normally experience dysmenorrhea may be best candidate for the use of OCs. Examples of COCs in clinical use are Norgestimate/ethinyl estradiol 0.25mg/0.035 mg, Norethindrone/ethinyl estradiol 1mg/0.035 mg and Levonorgestrel/ethinyl estradiol 90mcg/20 mcg. Other examples of contraceptives are levonorgestrel intrauterine device, and depot medroxyprogesterone acetate, Etonogestrel/ethinyl estradiol 0.1mg/ 0.015mg vaginal ring and Etonogestrel implant[6-19].

Complementary and Alternative Therapies

Interventions such as herbal preparations, transcutaneous nerve stimulation, acupuncture, and heat therapy have been

reported to lessen dysmenorrhea in some studies.

Herbal medicines

Several randomized controlled trials (RCTs) as well as systematic reviews of herbal and dietary supplements have shown that they are of great benefit in managing pain of dysmenorrhea. A 2014 RCT by Shirvani *et al.* concluded that ginger was as effective as mefenamic acid in the relief of primary dysmenorrhea[47]. An extensive review of 25 RCTs by Mirabia *et al*. (2014) led to the conclusion that there was promising evidence for treatment of primary dysmenorrhea and that using herbal medicine could be an alternative for pharmacological management. Some of the herbs identified by this review include Fennel vulgare, ginger (*Zingiber officinale*), sage (*Salvia ivandulifolia*), chamomile (*Matricaria chamomilla*) and valerian (*Valeriana officinalis*)[46].

Another systematic review by Gholami (2015) analyzed 24 studies on effects of herbs on dysmenorrhea and found the following herbs to be useful in alleviating pain of dysmenorrhea: thyme (*Thymus vulgaris*), chamomile tea (*Matricaria chamomilla*), St. John's wort (*Hypericum perforatum*), fennel (*Foeniculum vulgare*) and cinnamon (*Cinnamomum*). Other identified natural products are dill (*Anethum graveolens*), saffron (*Colchicum*), celery (*Apium graveolens*), anise (*Pimpinella anisum*), balm (*Balsamum*), valerian (*Valeriana officinalis*), mint extract (*Menthe longifolia*) and organic honey[45].

Dietary Supplements

A low-fat vegetable rich diet was found to be associated with a decrease in duration and intensity of dysmenorrhea in adolescents[48]. In a systematic review of Cochrane database to determine the efficacy and safety of dietary supplements for treating dysmenorrhea, Pattanittum and colleagues concluded that for several supplements there was low quality evidence of effectiveness, and more research is needed[49]. Increased consumption of fruits, vegetables, fish and dairy can have a positive association with less menstrual pain[50,51]. A 2018 study concluded that food rich in cereals, egg, fish, lean animal protein, vegetables and fruits was associated with decreased menstrual pain[48].

Aerobic Exercise

Regular exercise is known to have several health benefits. A 2018 study found that moderate intensity regular exercise could reduce the incidence of certain menstrual disorders including dysmenorrhea. The study recommended the use of aerobic exercise as a preventive or therapeutic approach to the management of dysmenorrhea and similar menstrual disorders. Exercise improves pelvic blood flow thereby helping to alleviate menstrual symptoms[52,53]. Literature reviews show some evidence from non-randomized studies supporting the application of exercise for alleviating symptoms of dysmenorrhea[22]. However, available evidence is limited in volume and quality[53,54]. Consequently, further research is required in this area before any definitive conclusions can be made.

Transcutaneous electrical nerve stimulation

Transcutaneous electrical nerve stimulation (TENS) involves the use of electrical currents at various frequencies and intensities to stimulate the skin so as to relief pain[2,55]. TENS is a non-invasive, inexpensive, portable method of managing dysmenorrhea with minimal risks and a few contraindications. TENS is postulated to stimulate the release of endogenous endorphins, which are known to cause reduction in pain[2]. TENS Could be used effectively to achieve pain reduction in primary dysmenorrhea. Several studies have investigated the effectiveness of TENS in reducing pain, decreasing the use of analgesics, and improving the quality of life in primary dysmenorrhea[55,56].

However, further studies are required to substantiate these claims. TENS could also

lead to reduction of the need for other forms of pharmacotherapy.

Acupuncture

Acupuncture is originally a Chinese practice that involves inserting fine needles through the skin at specific points specially to cure disease or relieve pain[2,22,57]. Acupuncture might be used as a potential alternative that is safe and effective in the treatment of females with primary dysmenorrhea[2,57-59]. This is particularly important when combination oral contraceptives or NSAIDS are not a favourable option. Acupunctural procedures activate receptors and certain nerve fibre through a complex of interactions with serotonin and endorphins thereby blocking pain impulses[57-59].

Heat Therapy

Several systematic review and meta-analysis suggest that heat therapy was associated with a decrease in menstrual pain in women with primary dysmenorrhea. Heat can also increase pelvic blood flow thereby enabling a reduction in pain caused by pelvic nerve ischaemia[2,60-63]. For women with dysmenorrhea, the application of local heat can reduce muscle tension and relax abdominal muscles to reduce pain caused by muscle spasms.

Heat therapy can be administered with a heating pad, hot-water bottle, or commercially available adhesive pads which generate heat by a chemical reaction. The heat patch (39°C) used for 12 hours a day can be as effective as Ibuprofen 400mg taken three times a day. An RCT found that a heat wrap was better than paracetamol for pain relief over an eight-hour period[4]. These results are consistent with the recommendation of local heat as a complementary treatment for dysmenorrhea[60].

Spinal manipulation

One of the non-drug options for dysmenorrhea is spinal manipulation. This involves the use of hands to put pressure on the lumbosacral spine and other parts of the back bone[63,64]. This could be supported with moderate exercise[64]. This procedure is sometimes offered by physiotherapists, osteopaths or chiropractors. As dysmenorrhea may be caused by restricted blood flow, manipulating the lower spine could improve blood flow to the pelvic area and lower pain. However, there is low quality evidence supporting the use of this process for primary dysmenorrhea[4].

Surgery

Surgical procedures are not recommended for primary dysmenorrhea. Although the effectiveness of surgical obstruction of the pelvic nerve pathways has not been established, surgical options such as hysterectomy are reserved for the most difficult refractory cases of secondary dysmenorrhea. The option of surgery is used when other treatment fails to give desired patient outcome. Some of the conditions that may require surgical procedures include uterine fibroids, adenomyomas and endometriosis. Laparoscopy is common for endometriosis while as a last resort, hysterectomy may be used as a last resort.

CONCLUSION

The prevalence of dysmenorrhea is high, and its consequences are extensive. While some women experience relatively minimal symptoms, others are affected in a way that their daily activities may be limited during menses. The mainstay of diagnosis for primary dysmenorrhea remains history and physical examination. While pain and symptom reduction are the main goals of management of primary dysmenorrhea, all patients should be properly investigated as chronic pathological conditions of the pelvis may be implicated in the secondary type.

Treatment of dysmenorrhea may involve pharmacologic or alternative methods. Empirical treatment using NSAIDs or combination oral contraceptives is recommended in primary dysmenorrhea. Alternative therapies including acupuncture,

heat therapy, spinal manipulation, transcutaneous nerve stimulation, dietary options and aerobic exercise may be exploited. These options are available to those patients where NSAIDS are contraindicated, those who do not desire contraception or where other options have failed. Pelvic ultrasonography and laparoscopy may be considered if dysmenorrhea cannot be managed with the above approaches to rule out secondary causes of dysmenorrhea. Since the effectiveness of surgical obstruction of the pelvic nerve pathways has not been established; surgical options such as hysterectomy should be used only for the most difficult and refractory cases of secondary dysmenorrhea. However, many of the alternative management approaches discussed in this narrative review need more empirical evidence to confirm their utility.

ACKNOWLEDGEMENTS

The authors are grateful to staff of Department of Clinical Pharmacy and Biopharmacy, University of Lagos. The article received no funding, and the authors declare that there is no conflict of interest.

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