

A Brief Review: Dysmenorrhea Solution and Treatment

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Abstract

Every month many women are plagued by menstrual cramps, few know just what triggers them, and this is a concern in and of itself. Dysmenorrhea is the leading cause in teenage girls of chronic short-term school absence and is a common issue in women of reproductive age. In fact, it is estimated that over 600 million hours are lost from work each year due to dysmenorrhea. Many women are familiar with the experience of dysmenorrhea, which can contribute to significant physical and emotional distress and life disruption.

Keywords: Dysmenorrhea; Reproductive age; Ovulation cycles

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Introduction

However, women may not seek professional expertise in their attempt to alleviate this condition [1-5]. Dysmenorrhea is menstruation-associated pain. It is the menstrual disease most often identified in women. More than half of the women who menstruate have pain per month for 1-2 days. For women of reproductive age, it is an exceedingly common and often disabling disease. The prevalence ranges from 16% to 91% in women of reproductive age [6-9]. Usually, painful menses occur in teenage years, around 6-12 months after menarche, or when normal ovulation cycles are formed. When ovulation happens and prostaglandins are produced. The most extreme menstrual pain is encountered in women with prostaglandin levels approaching their peak amount [10]. As the discharge gets stronger during the first day or two of the cycle, pain typically occurs within hours of the onset of menstruation and peaks [5]. The related signs are a wide variety of affective and somatic problems that develop at the time of menstruation. Symptoms may last up to 72 hours which can include nausea, vomiting, diarrhoea, fever, weakness, dizziness, fatigue, syncope, as well as cramping [11]. Blakey et al. believed that primary dysmenorrhea may be caused by pelvic circumference muscle and soft tissue incompatibility [12]. However, few experiments on the interaction between primary dysmenorrhea and the musculoskeletal system have been done, and concrete and accurate research are still surprisingly deficient in considering the stability of the diameter of the pelvic cavity. Passive elements such as bones and ligaments and active elements such as muscles and tendons are synonymous with cohesion inside the pelvic cavity, allowing smooth mobility structurally and functionally

[13]. The musculoskeletal incompatibility was believed to induce structural and functional changes in the body and a change in the uterus position, increasing dysmenorrheal dysfunction [14]. Dr. Kecia Gaither said, "In preparation for pregnancy, the uterine lining builds up each month," she adds. "The thickened uterine lining is no longer required if no fertilization occurs and is shed as such; this shedding is the menstrual process." The uterus contracts to help free it as this padding disappears, and this is where cramps come in. Simply put, contractions in the uterus are responsible for menstrual cramps. "If the uterus contracts too strongly, it can push against nearby blood vessels and cut off the oxygen supply to the uterine muscle tissues," Fasula says, "When the supply of oxygen is cut off, pain results" [1].

Literature Review

Non-steroidal anti-inflammatory drugs

In most women with primary dysmenorrhea, the most effective first-line choice of therapy is NSAID. These drugs function by inhibiting the synthesis and release of nausea and diarrhea-causing prostaglandins. In general, response to NSAIDs happens within 30 to 60 minutes. Since individual reactions can differ. Since individual reactions can differ. With the use of prostaglandin antagonists, approximately 80% of affected women receive pain relief [14]. While NSAIDs without a prescription are highly efficient and readily available [15]. Prostaglandin synthetase inhibitors are used in three classes of patients with primary dysmenorrhea. Thirty-one women received indomethacin at a dosage of 2500 mg × 3-4 per day, typically one or two days before menstruation

started, and 38 women received 250 mg × 3-4 naproxen a day, usually beginning on the first day of bleeding (open studies). After indomethacin and 67 percent after naproxen, 71 percent of patients reported mild to strong pain relief. A double-blind crossover analysis using naproxen sodium salt and placebo in 26 patients in the third series found that naproxen sodium was substantially more successful than placebo ($p < 0.05$) [16].

Oral contraceptives

Oral contraceptives are the second line of therapy for most patients, unless birth control is also desired. The necessity of daily medication to prevent symptoms for one or two days a month makes them too cumbersome as a first-line choice compared with the highly effective NSAIDs. Oral contraceptives prevent menstrual pain through a different mechanism than NSAIDs. The action of oral contraceptives is twofold: reduction of menstrual fluid volume and suppression of ovulation. They are up to 90 percent effective. All oral contraceptives are very effective compared with placebo. In general, it may take up to three cycles for menstrual pain to noticeably diminish, so it is important to stress this point to patients at the time of the initial prescription and consider adding an NSAID for breakthrough pain during the interim [17].

Now-a-days, different approaches, such as local sun, medication, thiamine, vitamin E, fish oil supplementation, acupuncture and transcutaneous nerve stimulation, are used to relieve and regulate pain and symptoms. Among the most effective of these approaches, prostaglandin synthesis inhibitors are remarkable by about 80% [18]. As other chemical drugs, the side effects of these medications, such as mefenamic acid and ibuprofen, are various. The side effects are evident, especially in synthetic medications, oral contraceptives that are administered for a long time [18]. Owing to the adverse effects of these medications [19], particular consideration has been given to the use of herbal treatments such as plants or supplements in the treatment of primary dysmenorrhea or other complications. The alternative medicine used clinically or historically in the treatment of menstrual pain is as follow:

Vitamin B1

B1 is considered an important nutrient in humans, which means we can't produce it on our own, so we have to get it from diet or supplements [20,21]. Vitamin B1 and Period pain research is young, but promising. While the mechanism behind how it works is not yet understood, research indicates that it does [22], it actually seems to work. There are currently several studies concerning and evaluating vitamin B1 and menstrual cramps. Although the studies are few in number, they all concluded that vitamin B1 is an effective treatment, even in extreme cases, for menstrual cramps. Based on several study results, the state of science for vitamin B1 and period cramp indicate that 100 mg of vitamin B1 daily for 3 months alleviated period pain [23].

Vitamin C

It is an essential vitamin for the body; it has been associated with improving menstrual pain. It is widely recommended to

get vitamin C from food, many individuals turn to supplements to meet their needs, but to get even quicker results, and it can also get an IV treatment with vitamin C. Blood, which contains iron, gets lost during menstruation. If the amount of iron we consume in our diet does not equal the amount of iron we lose over a period of time, iron deficiency may occur. By enhancing iron absorption, vitamin C can help prevent iron deficiency. It's a strong antioxidant and improves immunity by having white blood cells function better [24].

Vitamin D

Traditionally, vitamin D has been used to minimize dysmenorrhea. It is possible to relate the association between calcium intake and dysmenorrhea to the role of calcium in minimizing contractions. Low calcium levels make uterine spasticity and contractions more intensive. The level of vitamin D affects calcium homeostasis and can therefore be beneficial in improving dysmenorrhea [25].

Vitamin E

It is also used for the reduction of dysmenorrhea symptoms. Enzyme lysis, phospholipid peroxidation, and arachidonic acid production can be caused by decreases in the progesterone level in the luteal phase of the menstrual cycle. All these changes contribute to increased prostaglandin production, which would also stimulate uterine cramps and contractions. Vitamin E decreases phospholipid peroxidation with its antioxidant properties and prevents the release of arachidonic acid and its conversion to prostaglandins. It may also play a major role in alleviating the seriousness of dysmenorrheal disease [15].

Magnesium

Prostaglandin F₂ alpha (PGF₂ alpha) results were assessed every second month to track the procedure. A reduction of PGF₂ alpha in menstrual blood to 45 percent of the value before treatment began was achieved by Mg-therapy researchers. The particular therapeutic effect of Mg is possibly based on the inhibition of PGF₂ alpha biosynthesis, but also on its direct muscle relaxant and vasodilatory effects. The use of magnesium, in addition to PG-synthesis and ovulation inhibitors, is a possible natural ability to treat primary dysmenorrhoea. In a double-blind study, 50 patients with primary dysmenorrhoea were treated with Magnesium (Mg 5-longoral, Artesan GmbH). 21 out of 25 women showed a reduction in symptoms after a six-month period, but only 4 reported no therapeutic effects [26].

Omega-3 fatty acids

In fish oil, omega-3 fatty acids have anti-inflammatory activities that could be used to alleviate primary dysmenorrhea, probably by affecting prostaglandin metabolism and other factors involved in pain and inflammation [27]. Studies have shown that omega-3 can obtain a blood concentration of this substance for two months to cause anti-inflammatory and analgesic effects provided [28]. Most studies have shown that most people tolerate omega-3 fatty acids well and seldom have adverse side effects at a high dose (more than 6 grams per day). It has anti-inflammatory effects leading to the synthesis of vasodilator eicosanoids such as PGE₃

and PGF3 and production inhibition of omega-6-vasoconstrictor prostaglandin PGE2 and PGF2 [29].

Fish and fish oil

In dysmenorrhea, the form of fat ingested can also make a difference. High in omega-3 fatty acids, fish oil modulates the development of prostaglandin and could have an impact on menstrual cramps. A Danish study of 181 women aged 20-45 used food consumption diaries and found that menstrual discomfort was linked strongly with a low intake of animal and fish products and a low dietary ratio of in dysmenorrhea, the form of fat ingested can also make a difference. High in omega-3 fatty acids, fish oil modulates the development of prostaglandin

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Conclusion

In a placebo-controlled, crossover trial, 42 dysmenorrhea teenagers were randomized to take placebo or fish oil supplements (containing 1,080 mg of eicosapentaenoic acid, 720 mg of docosahexaenoic acid, and 1,5 mg of vitamin E); the groups were crossed after two months.

References

- 1 <https://www.organicauthority.com/>
- 2 Speer L (2005) Dysmenorrhea. *Am Fam Physician* 71: 285-291.
- 3 Coco AS (1999) Primary dysmenorrhea. *Am Fam Physician* 60: 489.
- 4 Conney SC, Kretchy IA, Asiedu-Danso M, Allotey-Babington GL (2019) Complementary and alternative medicine use for primary dysmenorrhea among senior high school students in the Western region of Ghana. *Obstet Gynaecol Int*, 2019.
- 5 Nag U, Kodali M (2013) Meditation and yoga as alternative therapy for primary dysmenorrhea. *Int J Med Pharm Sci* 3: 39-44.
- 6 Doty E, Attaran M (2006) Managing primary dysmenorrhea. *J Pediatr Adolesc Gynecol* 19: 341-344.
- 7 Durain D (2004) Primary dysmenorrhea: assessment and management update. *J Midwifery Womens Health* 49: 520-528.
- 8 Azagew AW, Kassie DG, Walle TA (2020) Prevalence of primary dysmenorrhea, its intensity, impact and associated factors among female students' at Gondar town preparatory school, Northwest Ethiopia. *BMC Womens Health* 20: 1-7.
- 9 Wang YJ, Hsu CC, Yeh ML, Lin JG (2013) Auricular acupressure to improve menstrual pain and menstrual distress and heart rate variability for primary dysmenorrhea in youth with stress. *Evid Based Complement Alternat Med* 2013.
- 10 Bakhtshirin F, Abedi S, Yusefzoi P, Razmjooee D (2015) The effect of aromatherapy massage with lavender oil on severity of primary dysmenorrhea in Arsanjan students. *Iran J Nurs Midwifery Res* 20: 156.
- 11 <https://www.medicalnewstoday.com/articles/324484>
- 12 Blakey H, Chisholm C, Dear F, Harris B, Hartwell R, et al. (2010) Is exercise associated with primary dysmenorrhea in young women? *BJOG* 117: 222-224.
- 13 Fisher C, Sibbritt D, Hickman L, Adams J (2016) A critical review of complementary and alternative medicine use by women with cyclic peri-menstrual pain and discomfort: A focus upon prevalence, patterns and applications of use and users' motivations, information seeking and self-perceived efficacy. *Acta Obstet Gynecol Scand* 95: 861-871.
- 14 Sousa FFD, Sousa Júnior JFMD, Ventura PL (2020) Efeito da auriculoterapia na dor e função sexual de mulheres com dismenorrea primária. *Br JP* 3: 127-130.
- 15 Pakniat H, Chegini V, Ranjkesh F, Hosseini MA (2019) Comparison of the effect of vitamin E, vitamin D and ginger on the severity of primary dysmenorrhea: A single-blind clinical trial. *Obstet Gynecol Sci* 62: 462.
- 16 Lundstrom V (1978) Treatment of primary dysmenorrhea with prostaglandin synthetase inhibitors-a promising therapeutic alternative. *Acta Obstet Gynecol Scand* 57: 421-428.
- 17 <https://www.mayoclinic.org/patient-care-and-health-information>
- 18 Bahmani M, Eftekhari Z, Jelodari M, Saki K, Abdollahi R, et al. (2015) Effect of Iranian herbal medicines in dysmenorrhea phytotherapy. *JOCPR* 7: 519-526.
- 19 <https://cam.cochrane.org/>
- 20 <https://www.delune.co/blogs/blog/vitamin-b1-period-cramps-naturally>
- 21 Seifert B, Wagler P, Dartsch S, Schmidt U, Nieder J (1989) Magnesium-a new therapeutic alternative in primary dysmenorrhea. *Zentralbl Gynako* 111: 755-760.
- 22 Diandra DL, Siregar HS, Aboet A, Aldiansyah D, Adenin I, et al. (2019) Thiamine Supplementation for Primary Dysmenorrhea. *IOSR* 18: 34-37.
- 23 <https://www.remedydrip.com/blog/best-remedy-for-menstrual-pain>
- 24 Alexandrovich I, Rakovitskaya O, Kolmo E, Sidorova T, Shushunov S (2003) The effect of fennel (*Foeniculum vulgare*) seed oil emulsion in infantile colic: A randomized, placebo-controlled study. *Altern Ther Health Med* 9: 58.
- 25 <https://www.reliasmedia.com/articles/68134-alternative-treatments-for-dysmenorrhea>
- 26 Kooshk A, Tofighiyani T, Rakhshani MH (2013) Comparison of the effects of marine omega-3 fatty acids and ibuprofen on primary dysmenorrhea. *Life Sci J* 10: 1-3.
- 27 Friedman A, Moe S (2006) Review of the effects of omega-3 supplementation in dialysis patients. *Clin J Am Soc Nephrol* 1: 182-192.
- 28 <https://www.verywellhealth.com/what-is-chasteberry-2721967>
- 29 Raket D (2017) Integrative medicine-E-book. (4th edn) Elsevier Health Sciences.