# Dysmenorrhea

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Dysmenorrhea afflicts a large percentage of women in their reproductive years. But it is especially traumatic for adolescent girls. What is supposedly a "natural" event becomes a time of pain. The prospect of undergoing the pain may make it difficult for a teen to accept her other bodily changes. This condition has a negative effective on the quality of the patient's life and the lives of their families. It is also responsible for a huge economic loss as a result of the cost of medications, medical care and decreased productivity.

Dysmenorrhea is defined as a severe painful cramping sensation in the lower abdomen often accompanied by other biological symptoms including sweating, tachycardia, headaches, nausea, vomiting, diarrhoea, and tremulousness, all occurring just before or during the menses. In the past the definition has been subdivided into primary and secondary dysmenorrhea. The term primary dysmenorrhea was reserved for women who had no obvious pathologic condition. It is the current trend of thought that these patients probably have a disturbance in prostaglandin balance. Secondary dysmenorrhea on the other hand is associated with pelvic conditions or pathology that causes pelvic pain in conjunction with menses.

This article will deal in the main with primary dysmenorrhea, which is the common form found in adolescent girls.

## Incidence

A number of studies have attempted to determine the prevalence of dysmenorrhea; a wide range (3% to 90%) has been reported. These studies have been performed on students, teenagers & their mothers & individuals from various specific populations such as industrial workers or college students. The best estimate of the prevalence of primary dysmenorrhea is about 75%.

Andersch & Milsom (1982) surveyed all the 19-year-old women in the city of Gothenburg, Sweden. A total of 90.9% of such women responded to a randomly distributed questionnaire & 72.4% of these stated that they suffered from dysmenorrhea. In addition, 34.3% of the total population reported mild menstrual symptoms 22.7% cited moderate symptoms that required analgesia & 15.4% stated that they had severe dysmenorrhea that clearly inhibited their working ability and that could not be adequately assuaged by general analgesia. The authors also demonstrated a significant positive correlation between the severity of dysmenorrhea & the duration of menstrual flow, amount of menstrual flow and early menarche but they could not establish a relationship with the actual duration of the menstrual cycle.

In their series 38.3% of the patients reported that they had experienced dysmenorrhea for the first time during the first year after menarche and 20.8% reported that dysmenorrhea had not occurred until 4 years after menarche.

## Family History

Dysmenorrhea has been reported to be of significantly increased amount in mothers & sisters of women with dysmenorrhea.

## Pathogenesis of Primary Dysmenorrhea

The pathogenesis of Primary dysmenorrhea is still unknown. It has been shown that there is a close association between an elevated prostaglandin F2 alpha level in the secretory endometrium & the symptoms of dysmenorrhea including uterine hypercontractility, complaints of severe cramping and other prostaglandin-induced symptoms. This has led to the theory that prostaglandin F2 alpha is associated with the pathogenesis of dysmenorrhea.

## Treatment

Before the drug treatment for this condition is described

it should be emphasized that counseling the adolescent girl regarding the problem is the most important aspect of the entire spectrum of treatment available.

It has been widely claimed that exercise is beneficial to dysmenorrhea, yet solid evidence is lacking. Studies investigating this relationship were reviewed by Golomb et al (1998). Most showed decreased prevalence and/or improved symptomatology with exercise. However, controlled longitudinal studies involving women with confirmed primary dysmenorrhea who are sufficiently blinded to the study objectives are necessary before a definite relationship between exercise and dysmenorrhea can be established.

There have been various types of studies regarding the use of self-administration of over-the-counter medication for pain among adolescents. In a study by Chambers et al (1997) many adolescents (58.7%-95.9%) reported taking OTC medications for pain. Self-administration was widespread; 58.3% to 75.9% of adolescents reported taking an OTC medication for pain without first checking with an adult in the previous 3 months. Self-administration of medication without the knowledge of adults increased significantly from grades 7 to 9 for all types of pain. Girls tended to self-administer medication more than boys. Adolescents reported that they began to self-administer medication between the ages of 11 and 12 years, highlighting the importance of providing adolescents with correct information about these medications.

Prostaglandin – synthetase inhibitors (PGSIs) have been demonstrated to alleviate these symptoms. These substances are nonsteroidal and antimflammatory. They have been used as analgesics for a number of conditions including arthritis and generally are divided into two chemical groups- the arylear boxylic acids which include acetylsalicylid acid (aspirin) & fenamates and the aryllalknoic acids including the arylpropionic acids (ibuprofen, naproxen and ketoprofen) as well as the indoleaacetic acids (indomethacin). The specific effect of these agents on the uterine musculature is reduction of contractility as measured by reduction of intrauterine pressure.

In 1984 Owen reviewed the effectiveness of PGSIs in the treatment of primary dysmenorrhea (1984). She reviewed 51 trials carried out in 1,649 women. More than 72% of the women suffering from dysmenorrhea reported significant pain relief with PGSIs, 18% reported minimal or no pain relief and 15% showed a placebo response. Owen (1984) concluded that PGSI compounds were effective & safe for the majority of women with primary dysmenorrhea. The fenamates seemed to be more effective in providing pain relief than ibuprofen, indomethacin or naproxen. All the compounds demostrated minimal PGSI associated side effects with the exception of indomethacin. In trials with indomethacin the drop out rate was higher, primarily because of symptoms involving the central nervous system & gastrointestinal tract.

Smith has demonstrated that the effectiveness of PGSIs is related to tissue concentration. Using meclofenamate in 18 subjects who participated in a double-blind, placebo-controlled, cross-over study, he was able to show a parallel in time response curves between the plasma levels of the drug & decrease in uterine contractility. Intrauterine pressure declined 20% to 56% in these patients during meclofenamate therapy.

Zhang et al (1998) tried to quantify the efficacy and safely of naproxen, iburprofen, mefenamic acid, aspirin and acetaminophen (paracetamol) in the treatment of primary dysmenorrhoea through a systematic overview of randomised controlled trials. Fifty-six trials describing 55 comparisons of analgesics with placebo and 12 direct comparisons with other analgesics met the inclusion criteria. Women taking naproxen were over three times more likely to have at least moderate pain relief than those taking placebo. Ibuprofen, mefenamic acid and aspirin were also superior to placebo but acetaminophen was not. The requirement for rescue analgesics, restriction of daily life and absence from work or schools were less frequent with naproxen and ibuprofen than placebo but not with aspirin or acetaminophen. Direct comparisons did not show any difference between naproxen and ibuprofen. Side effects occurred more frequently only with naproxen when compared with placebo.

PGSIs should not be given to patients who have shown previous hypersensitivity to such drugs it is also contra indicated for individuals who have had nasal polyps, angioedema and bronchospasm related to aspirin or nonsteroidal anti inflammatory agents. In addition these agents are contraindicated for individuals with a history of chronic ulceration or inflammatory reaction of the upper or lower gastrointestinal tract and for those with preexisting chronic renal disease. During the use of such agents autoimmune hemoytic anaemia, rash, edema & fluid retention and central nervous system symptoms such as dizziness, headache, nervousness & blurred vision can occur, albeit not very commonly. In up to 15% of the user sight elevation of hepatic enzymes may also be found.

Oral contraceptives will relieve the symptoms of primary dysmenorrhea in about 90% of patients treated. This may be because of either a modulating effect on the hypothalamus or a direct reduction in the amount of endometrium present in women on oral contraceptive therapy. If the patient also requires contraception, oral contraceptive therapy may prove to be the treatment of choice. In fact Andersch and Milsom (1982) have shown that oral contraceptive use was noted to reduce the prevalance & severity of dysmenorrhea significantly.

Other analgesics may be necessary in treating patients with primary dysmenorrhea but should be used as back-up drug when the desired therapeutic effect is not achieved with PGSI medication or oral contraceptives.

The role of surgical procedures for a diagnosis in this condition is extremely limited. More so as primary dysmenorrhea occurs at an early age when the patient is unmarried. It should be used only in very extreme cases and that too after trial of medical treatment.

**Etiology & Management of Secondary Dysmenorrhea**

A variety of other conditions cause or are associated with dysmenorrhea. In most cases the pain experienced is either secondary to the pathologic process of the condition or a specific result of the condition. These constitute the so called secondary dysmenorrhea group of problems and include cervical stenosis, ectopic endometrial tissue, pelvic inflammation pelvic congestion, conditioned behavior and stress and tension. The treatment would obviously depend on the cause

**References**


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