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DYSMENORRHEA- RISING ISSUE OF 21ST CENTURY

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ABSTRACT

Dysmenorrhea is the medical term used for menstrual cramps. It is the most common gynecological disorder regardless of age and nationality. Dysmenorrhea is a common adolescent problem occurring within a year of first menstrual period. Sometimes it is caused due to underlying causes like endometriosis, adenomyosis, PCOD's etc. or is caused by general uterine muscle contractions. It decreases with age and in cases of early pregnancy. When the pain is severe, it is associated with restriction of activity and absence from school or work. There are two types of dysmenorrhea; Primary and Secondary. Treatment of dysmenorrhea generally includes NSAID's, Simple analgesics, Herbal drugs and other dietary supplements. Exercise, yoga and having orgasm also tend to decrease menstrual pain.

KEYWORDS: Prostaglandins, β endorphins, progestin, Stein-Leventhal Syndrome.

INTRODUCTION

The most common menstrual disorder which occurs within a year of first menstrual period is dysmenorrhea.[1] Painful periods, menstrual cramps or pain during menstruation can be termed as dysmenorrhea. It can be literally translated as "difficult monthly flow". There are two types of dysmenorrhea. Primary and secondary dysmenorrhea are its types. It occurs in 20% to 90% women of reproductive age.[1] Symptoms last for 2-3 days after the onset of menstruation for that particular month. Primary dysmenorrhea is the pain caused when there are no underlying causes like fibroids, ovarian cysts, endometriosis etc.[2] It is the most common and general menstrual pain occurring in adolescents.[2] It eases with growing age and in cases of early pregnancy. Secondary dysmenorrhea is caused when there is any underlying gynecological disorder like fibroids, adenomyosis, PIDs, endometriosis etc. Symptoms include pain in the pelvis, lower abdomen and in the thighs. Treatment includes

usage of NSAIDs (painkillers) like ibuprofen, naproxen and acetyl salicylic acid. Other detailed causes and treatment is discussed in this article below.

TYPES

Primary and Secondary dysmenorrhea are two types of dysmenorrhea.

- **Primary dysmenorrhea**

It is the type of pain caused when there is no underlying organic or gynecological disorder and is the most common and general menstrual pain experienced by adolescents. It is a cramping pain in the lower abdomen occurring just before or during menstruation. It is often underdiagnosed and untreated. Primary dysmenorrhea forms a major cause of absenteeism from work for young women.[3] A study on college students based on their diaries kept for one year indicates that 72% of monitored periods were painful and 60% of the women reported atleast one episode of severe pain.[3] The initial onset of primary dysmenorrhea is usually 6-12 months after menarche, with the beginning of ovulatory phase. The pain lasts for about 8 to 72 hours.

- **Secondary dysmenorrhea**

It is that type of dysmenorrhea caused when there is an underlying gynecological disorder like fibroids, endometriosis, adenomysis, PID, ovarian cysts etc.[4][5] It can occur at any time after menarche but generally it occurs in the 30s and 40s. Most of the disorders causing secondary dysmenorrhea can be treated easily with surgery and other medications.

ETIOLOGY

- **Primary Dysmenorrhea**

Primary dysmenorrhea is found to be caused by the excessive levels of prostaglandins that make the uterus contract during menstruation. During menstrual cycle the uterine wall i.e. the endometrium thickens for implantation of the fertilized ovum. If the ovum is not fertilized the uterine wall is shed off. During menstruation prostaglandins are released due to the destruction of endometrial cells and resultant release of its content. [6] Prostaglandins stimulate myometrial contraction, ischemia and sensitization of nerve endings. [2] Women with severe dysmenorrhea have higher levels of prostaglandins in their menstrual fluid. Compared with other women, women with primary dysmenorrhea have increased activity of the uterine muscle with increased contractility and increased frequency of contraction. [7] Other factors that make the pain of primary dysmenorrhea even worse are tilted or retroverted

uterus, lack of exercise, smoking, drinking alcohol ,being overweight and starting menstruating before the age of 11.

- **Secondary Dysmenorrhea**

Secondary dysmenorrhea can occur at any time after menarche but may arise as a new symptom when the women in her 30s and 40s.[8] Circumstances that may indicate secondary dysmenorrhea are dysmenorrhea occurring during the first one or two cycles of menarche, little or no response to non-steroidal anti-inflammatory drugs or oral contraceptives or both.[8] This type of dysmenorrhea includes gynecological disorders like fibroids, adenomyosis, sexually transmitted infection, endometriosis, pelvic inflammatory diseases, ovarian cysts and the use of an intrauterine device.

Fibroids - These are the most common benign tumors of woman's uterus.[9] They can develop within or on the uterine wall.[9] Uterine fibroids cause excessive menstrual bleeding, pelvic pain and frequent urination.[9] Although these are called 'fibroids' they do not contain fibrous tissue, hence the medical term for fibroid is leiomyoma.[9] Fibroids are found one in every 5 women in their reproductive years and 50% of the women is affected by the time they reach 50 years of age. Fibroids may be classified on the basis of their location in the uterus. Myometrial (in the uterine wall), submucosal (under the surface lining of the uterus), suberosal (just under the outside covering of the uterus) and pedunculated (either inside or outside of the uterus on a long stalk) are some of its types.[9] Symptoms of fibroids include menorrhagia, pelvic cramping/painful periods, bleeding between periods and painful intercourse.[10]

Adenomyosis[11] - It is a condition in which the inner lining of the uterus (endometrium) breaks through the muscle wall (myometrium) of the uterus. It is accompanied by severe menstrual cramps, lower abdominal pressure and bloating before menstruation. During menstruation it causes heavy periods. Adenomyosis may be localized in one spot or throughout the entire uterus.

Ovarian Cyst - It is a fluid filled sac developing on the ovaries.[12] These are of various types like dermoid cysts and endometrioma cysts; however functional cysts are most common type.[12] Follicle cyst and corpus luteum cysts are the types of functional cysts present.[12] During a woman's menstrual cycle an egg grows in the follicle of the ovary. If somehow the egg is not released during the ovulatory phase and the follicle is not broken then the fluid

inside the follicle forms a cyst on the ovary.[12] This is called the Follicle cysts. Now the follicle sacs generally dissolve after releasing the egg but if the sac does not dissolve and opening of the follicle is sealed, accumulation of more fluid inside the sacs causes the formation of a cyst.[12] This is called the corpus luteum cysts. Functional ovarian cysts are not the same as ovarian tumors or hormone related conditions like Polycystic Ovarian Syndrome (PCOS). PCOS (also called Stein-Leventhal Syndrome) is a condition that develops due to an imbalance in the female sex hormones like estrogen, progesterone and androgens.[13] This may lead to changes in the menstrual cycle, ovarian cysts, trouble getting pregnant and problems in releasing a fully matured egg during the ovulatory phase of the menstrual cycle. The incapability of releasing matured egg causes infertility though not all women with PCOS will develop such condition. Ovarian cyst causes bloating in the abdomen, breast tenderness, pain during bowel movements, before or during menstrual phase and during intercourse. Sudden severe pain may be caused due to torsion of the ovary on its blood supply or rupture of the cyst.

TREATMENT

➢ Management of Primary Dysmenorrhea

Primary Dysmenorrhea can be treated with various medications like non-steroidal anti-inflammatory drugs, oral contraceptives, Herbal drugs, simple analgesics and other alternative therapies.

- **Non-Steroidal Anti-inflammatory Drugs[2]**

NSAID's are the most important and effective first line of medication for most of the women with primary dysmenorrhea. They work by inhibition of production and release of prostaglandins. Since prostaglandin causes uterine contractions and associated systemic symptoms of primary dysmenorrhea, its inhibition of production and release proves to be effective. Use of NSAID's can have side effects like nausea diarrhea, dyspepsia and peptic ulcer. People who are incapable to take common NSAID's may be prescribed a COX-2 inhibitor. Response to NSAID's occurs within 30-60 minutes.

- **Oral Contraceptives**

Oral Contraceptives form the second line of treatment against primary dysmenorrhea if birth control is also desired. [2] Oral contraceptives prevent menstrual pain through a different mechanism than NSAID's. [2] The necessity of taking daily medication to prevent symptoms

makes it a cumbersome method when compared to NSAID's. Oral contraceptive causes reduction of menstrual volume and suppresses ovulation.[14] In general it may take three cycles of menstrual cycle to diminish pain, so it is important to stress this point during initial prescription and consider adding an NSAID to relieve the pain during interim.[2] Many adolescents are not aware that oral contraceptive reduces menstrual pain.[15] Norplant and Depo-Provera are effective since they induce amenorrhea.[16] As with NSAID's, it is important to inquire about contraindications like cardiovascular disease, cerebrovascular disease, hepatic disease or current pregnancy.[2]

- **Simple Analgesics[8]**

Simple Analgesics like aspirin and paracetamol are effective in reducing pain when NSAID's are contraindicated.

- **Calcium Channel Blockers[17]**

Calcium antagonists can reduce myometrial activity by controlling cytoplasmic concentrations of free calcium and thereby controlling uterine contraction; this may reduce the period pain.

➢ **Management of Secondary Dysmenorrhea**

- **In case of Uterine Fibroids**

There are various ways to treat uterine fibroids. We can use IUD's that release progestin that reduces bleeding and pain; iron supplements to treat or prevent iron deficiency in blood when bleeding is heaving; NSAID's to treat cramping and pain. Surgical procedures are also used to treat uterine fibroids.

- **In case of Adenomyosis[18]**

Treatment of Adenomyosis depends on the severity of pain, symptoms and whether childbearing is completed or not. NSAID's are used to get relieve from pain; Hormonal therapies like levonorgestrel-releasing IUD's implanted in the uterus, aromatase inhibitors are used in heavy and painful periods; Uterine artery embolization, where tiny particles guided by a tube through the vagina is used to block the blood vessels to the adenomyosis.

- **In case of Ovarian Cysts[12]**

Ovarian cyst treatment involves a number of methods like usage of birth control pills if the cysts are recurrent and the patient does not want to get pregnant; Laparoscopy, in which a

small incision is made near the navel and the instrument is inserted into the abdomen to remove the cyst; Laparotomy (used when the cyst is large), in which a large incision is made near the navel and immediate biopsy is done to determine whether the cyst is cancerous or not, if found cancerous then hysterectomy or complete removal of uterus and ovary is performed.

- **Progestogens and anti-progestogens**[19,20]

Progestogens like medroxyprogesterone acetate and gestrinone has shown to induce amenorrhea and thus can successfully treat dysmenorrhea in patients with endometriosis.

➢ **Alternative methods**

There are a few alternative methods other than using NSAID's, birth control pills, hormonal therapies, IUD's that helps in reducing the pain and sufferings of period pain. Some of these are TENS unit, laparoscopic presacral neuronectomy, acupuncture, omega 3 fatty acids, transdermal nitroglycerin, thiamine and magnesium supplements.[2]

- **Transcutaneous Electrical Nerve Stimulation**[21]

It involves stimulation of skin using current at various pulse rate and intensities to provide pain relief.

- **Exercise**[8]

Physical exercise reduces dysmenorrhea by increasing blood supply to the pelvic level and helps in releasing β endorphins which acts as nonspecific analgesics.

- **Herbal products and other dietary supplements**[22]

There is insufficient evidence to recommend the use of any herbal product or other dietary supplement for treating dysmenorrhea including melatonin, Vitamin E, fennel, dill, chamomile, cinnamon, damask, rose, rhubarb, guava and uzara. One review found that vitamin E and thiamine to be likely effective.

- **Heat**[23]

It is the most traditional method of reducing the menstrual pain. Heating pad (39^0C) used for 12 hours a day was found out to be as effective as ibuprofen (400mg three times a day) and more effective than placebo in reducing pain. Woman using both ibuprofen and heating pad experience the pain relief.

➢ **Non-Medicinal Treatment**

Non-medicinal treatments for getting relief from dysmenorrhea are:-

- Lying on the back, supporting the knees with a pillow
- Holding a hot water bottle on the abdomen or lower back
- Taking a warm bath
- Gently massaging the abdomen
- Doing mild exercise like walking, stretching, cycling and biking.
- Yoga
- Having an Orgasm.

CONCLUSION

Women and girls in their puberty should come up and treat the menstrual pain in a serious manner rather than treating it just a pain. Not always primary but secondary dysmenorrhea happens to be in a very early age due to presence of a gynecological disorder, which should be treated as soon as possible. Society must be more liberal towards women during their painful periods and consider absenteeism from work a genuine cause.

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