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## Dysmenorrhoea

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### 1. Introduction

It is about a colic pain located in the lower abdomen, it happens just before or during menstrual period and it usually comes with other symptoms: perspiration, tachycardia, sickness, vomits, diarrhea, etc and also It can cause lost of consciousness. This group of symptoms is usually called catamenial molimen.

### 2. Alternative names

Painful menstrual periods, menstrual colic. These terms are not very accepted scientifically and in general terms are more used for patients.

### 3. Frequency

It constitutes one of the main consultation reasons in young women population. Its frequency turns more significant when the gynecological and the axis hypophysis-hypothalamus-ovary maturation progresses. It is suffered by a 30 to 50% of the adolescents. Between the 10 and 15% of them are helpless of carrying out their school tasks.

### 4. Classification

The dysmenorrhoea is classified in primary and secondary. It is spoken of primary dysmenorrhoea in the cases of painful menstruations where there is not significant gynecological pathology. It appears for the first time from 6 to 12 months after having happened the menarche when the ovulatory cycles are already well established because this is a dysfunction of women that ovulate.

The secondary dysmenorrhoea is product of an existent pelvic affection and it is characterized because it begins several years after the menarche and the pain last more during the menstruation. The most frequent causes of secondary dysmenorrhoea are: endometriosis (33,5%), pelvic inflammatory illness, uterine myoma, uterine polyps, cervical stenosis, pelvic adherences, use of intra-uterine devices, congenital anomalies of the development of the genital tract (fundamentally the obstructive ones), and ovary cysts.

Membranous dysmenorrhoea as some authors denominate it -, consists on the presence of intense colic caused by the step of endometrial tissue (uterine cover) through the not distended uterine neck and it is not very common.

## 5. Etiology

Dysmenorrhoea cause was ignored during a lot of time. Pickles was the first one in suggesting that it was caused by a "menstrual stimulant" and later he discovered that it was a prostaglandin mixture (PG) E2 and F2.

There are a lot of works that link the dysmenorrhoea to the action of the prostaglandins; their levels are increased in cases of dysmenorrhoea, myomas, etc. The prostaglandins F2 and the prostaglandins E2 are so much in high concentrations in the secretor endometrium and in the menstrual fluid of women with primary dysmenorrhoea. The prostaglandins F2 is a potent oxytocic uteroconstrictor; when it is administrated inside the uterus it produces an intense pain like the one that happens in the dysmenorrhoea and occasionally, menstrual bleeding. The role of the prostaglandins E2 is less clear, but it could increase the sensibility of the nervous terminations.

The reason of the increase of the values of the prostaglandins in the primary dysmenorrhoea is not very well-known. The primary dysmenorrhoea happens almost exclusively in ovulatory cycles and it is known that the steroid hormones of the ovary affect the uterine contractility. However, the existence of any abnormality has not been demonstrated in the hormonal values of women with primary dysmenorrhoea, neither the exact relationship between progesterone and primary dysmenorrhoea.

It has also been proved that the exogenous supply of prostaglandins causes contractions of the myometrium and the increase of the dose entails associated symptoms: vomits, uneasiness, diarrhea.

Other factors related to the etiology of the primary dysmenorrhoea are the uterine synthesis of leukotriene, the increased secretion of vasopressin, the endothelin or the activator factor of the platelets.

Psychological and cervical factors were considered before as important etiopathogenic factors, they have lost a lot of value as fundamental cause of the dysmenorrhoea, being valued at the moment as preponderant factors, according to what we already pointed out; the role of the hormones and of the prostaglandins.

Nevertheless, we should not stop recognizing there are patients that somatize more than others. It has also been studied groups of adolescents and we can also observe that those with more crises in their life experimented more marked symptoms.

The emotional reaction in front of the menstrual period has aspects of cultural nature that determine different attitudes we can not obviate.

## 6. Clinical manifestations

In the primary dysmenorrhoea the pain settles -as we already pointed out-, just before or during the first moments the menstruation appears. Its time of duration varies from 2-3 hours up to 1 day and with less frequency, between 2 and 3 days. There are cases in which the pain can begin between 2 and 3 days before the menstruation, but it is uncommon, it is usually of colic type, in hypogastrium, it is irradiated to lumbar region and both thighs. Gradations of intensity exist as well as associated syndromes.

There are some differences in the clinical manifestations between the primary and secondary dysmenorrhoea, for example, in secondary dysmenorrhoea, the beginning of the sintomatology is after the first two years of having happened the menarche and the symptoms can appear days before the menstruation and after having happened this one, its duration is usually longer, contrary to the primary one in which we already pointed out, its beginning is in the first two years of having happened the menarche, the symptoms are presented almost with the menstruation and its duration is briefer.

Besides the presence of some discoveries like inflammatory processes, endometriosis, etc., will differentiate the secondary dysmenorrhoea of the primary one.

CHARACTERISTICS	PRIMARY	SECONDARY
Moment of the cycle	Lightly before or during the menstruation. There is more pain during the menstruation.	It doesn't usually limit to the menstruation. The pain is not always more intense with the menstruation.
Relationship with menstrual bleeding.	The pain is related with the first day of having bled.	The pain is not related with the first day of having bled.
Characteristic of the pain.	it is the same in all menstruations.	It tends to get worst with the time.
Duration of the pain.	24 to 72 hours	4 to 6 days
Age of beginning.	Adolescence (Generally 1 to 2 years after the menarche)	Women older than 20 years (among 20 -30 years in endometriosis), among 30-40 years in adenomyosis.
Associated symptoms	Sickness, vomits, diarrhea, migraine, depression.	Infertility, metrorrhagia, dyspareunia
Gynecological antecedents	There are not antecedents.	Some antecedent exists.
Gynecological exam.	Negative.	Discovery of: Palpable Tumoration Fixed uterine retroversion. Old painful. Painful Uterosacros. Presence of uterine dispositive

Table 1. Comparison between the primary and secondary dysmenorrhoea

## 7. Differential diagnosis

It is very important to differentiate the primary dysmenorrhoea of the secondary one. A good questioning should be carried out; it allows us to discard the presence or not of causes related to the physiological menstrual cycle or causes unaware to this cycle. Later a meticulous and correct gynecological physical exam will supplement the elements to make the differentiation.

Among the most frequent causes of secondary dysmenorrhoea -as we pointed out-, is the one caused by endometriosis, that represents 33,5% of the causes of secondary dysmenorrhoea. It is suspected when:

- a. We find painful nodules in the uterosacral ligaments in the pelvic exam.
- b. When the pain becomes progressive in each menstruation.
- c. When there is poor answer to the treatment.

Other important causes are the intra-uterine devices, which are sometimes ignored by patients, those that unchain reactions mediated by the prostaglandins and the uterine myomas.

## 8. Treatment: General considerations

The dysmenorrhoea has been treated from the symptomatic, endocrine and surgical point of view; we will analyze these treatments.

It is very important to offer to the patient an explanation of her affection and its possible causes after being defined if the affection is type primary or secondary one. In not few cases, mainly in those that the dysmenorrhoea process is manifested with light pain, just the information of the natural phenomena of the menstruation -psychotherapy - is enough to make the patients feel better.

As we already pointed out, it is very important to carry out a good questioning not only to establish the diagnosis and to specify if it is a primary or secondary dysmenorrhoea, but also to know some characteristics of the patient's personality, if she has received previous treatments and in this case, to be able to specify which ones have been indicated and by whom.

The treatment of the dysmenorrhoea crisis depends on its seriousness. Once initiated the pain it is necessary to assist to its natural evolution. Generally intense dysmenorrhoea responds to the local application of heat and light analgesic, sedative or antispasmodics. Physical exercise is usually a benefit.

The rehabilitative treatment of the dysmenorrhoea has been recommended Independently of the classical treatment based on anti-inflammatory non steroid, inhibitors of prostaglandins, norms of intestinal hygiene, to prevent the constipation and local heat, It will be summarized at the end of this work.

A practical focus for the initial handling of the treatment is presented in figure I.

As we can see in figure 1, the main strategy to establish the treatment consists on defining pretty well if it is a primary or secondary dysmenorrhoea.

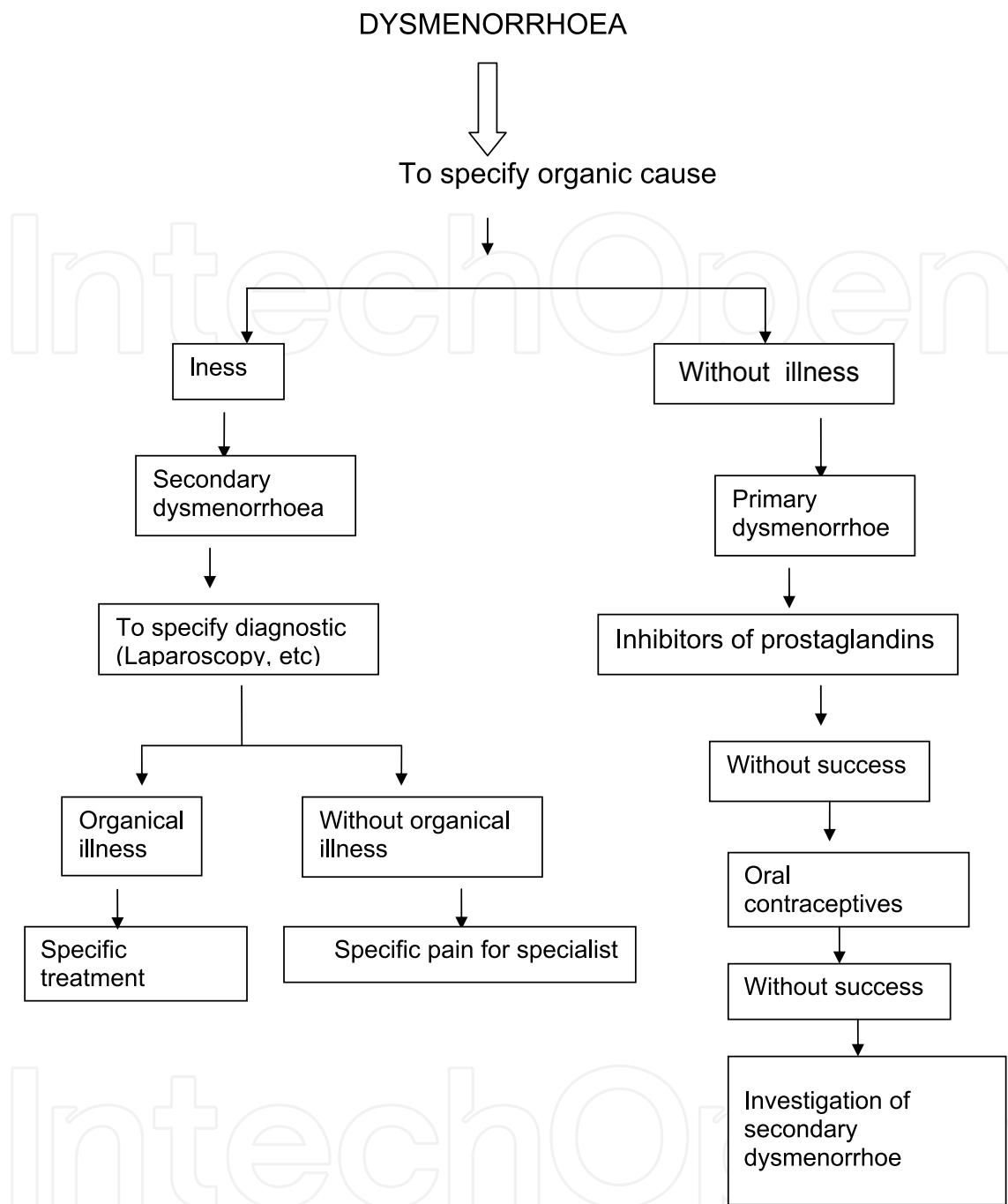


Fig. 1. Approach for the treatment of the dysmenorrhoea.

**9. Considerations of treatment**

a. Symptomatic treatment

We already pointed out that the observation of the intensity of the pain, its limitations and the presence or not of associated syndromes will give us the guidelines to establish, when classifying the dysmenorrhoea according to its grade. It is always convenient to keep in mind a group of general measures- already distinguished- like sedative ones, antispasmodics, physical exercises, etc.

### b. Hormonal treatment

Oral contraceptives are very effective and they constitute the chosen treatment in women that require contraception and they don't have contraindications. The explanation of the observed benefits with oral contraceptives is the decrease of the prostaglandins synthesis associated to an atrophic endometrium; it diminishes the menstrual flow and therefore the prostaglandins. Oral contraceptives are a good choice: It is combined the contraception with a beneficial effect on the dysmenorrhoea, menstrual flow and menstrual irregularities.

When inhibiting the ovulation, the prostaglandin content in the menstrual liquid diminishes below the normal figures and decreases its contractile effect on the uterine musculature.

The effectiveness of the synthetic progestogens is smaller than oral contraceptives. The possibility to carry out a hormonal treatment with progesterone derivatives (medroxyprogesterone or dydrogesterone 5-10 mg/days) can be considered during the last 10-12 days of the cycle. At the present time most of the progestational drugs are used in form of oral contraceptives and we should remember that the use of the pill during 21 days to control one or two days of dysmenorrhoea is not recommended if contraception is not required.

### c. Inhibitors of prostaglandins

The coming of the inhibitors of synthetase of PG constitutes a new dimension and with success in its treatment. It has been studied 5 main groups of inhibitors of the synthetase of prostaglandins and clinical studies show that these drugs relieve the symptomatology of dysmenorrhoea. The compounds that inhibit the biosynthesis of the PG can act in 2 different places in the cascade of the arachidonic acid through the inhibition of the enzymatic system. The inhibitors are divided into 2 different types:

Type I. Acts inhibiting the recurrent synthesis from the endoperoxide to the cyclooxygenase level. Some examples of inhibitors of type I are the indomethacin and the mefenamic acid. Among the anti-inflammatory non steroids families we can find the group of acetic acid, one example of this one is the indomethacin, this group is associated to a lot of collateral effects and they are not drugs for choice for dysmenorrhoea treatment. The drugs (mefenamic acid, flufenamic acid) are extremely effective. Fenemates act as inhibitors of the synthetase and they have an antagonistic action on the receivers of the prostaglandins. Also Ibuprofen, ketoprofen, naproxen belong to this group, are very effective.

Type II. They act on the enzymes that disintegrate the recurrent endoperoxides. Type II are the p-cloromercuribenzoate and the butyrophenone phenylbutazone, these don't inhibit the cyclooxygenase and they allow the production of recurrent endoperoxides, which are potent uterotonic.

In general terms, the different inhibitors of the synthetase prostaglandins are similar and there are not studies that compare them in an effective way. All these drugs are useful and they cause relief of the dysmenorrhoea symptoms in most of sick people.

The collateral effects of the inhibitors and antagonistic of the prostaglandins are relatively light and quite passable. Migraine, digestive symptoms, blurred vision, vertigo and erythema are pointed out. Women with antecedents of gastrointestinal ulcer should not take these drugs. Sometimes, the patients describe a disorientation sensation and others of sleepiness, sickness and edginess. We can not forget the nephrotoxicity potential of these drugs.



Initially, it was thought that the best effects in the inhibitors of the prostaglandins were achieved with the administration 2-3 days before the menstruation, to reduce the prostaglandin levels in tissues before the endometrial collapse. Fortunately the studies have proved that the effectiveness of the treatment is the same when the bled begins, therefore, the possibility of ingestion of these agent decreases in the first stage of the pregnancy. Another benefit of the inhibition of prostaglandins is the decrease of the lost of blood during the menstruation.

d. Presacral neurectomy

The presacral neurectomy or sympathectomy constitutes a rational and effective procedure in patients that suffer intense dysmenorrhoea and don't respond to the treatment. Since, although it alleviates totally or almost the pain is a bigger surgical intervention--with non despicable risks--, and there is not guarantee of a beneficent answer, it is a method in disuse. The resection of the uterosacral ligaments and the lumbar and ovarian sympathectomy are abandoned technics.

e. Hysterectomy

In some patients with secondary dysmenorrhoea- due to very extensive endometriosis and rebellious to treatments, tumorous like uterine myomas, etc- will be suitable the total abdominal hysterectomy.

Grade	Clinical Manifestation	Treatment
I	Light dysmenorrhoea. Without systemic symptoms. Without interference in the activities	Education Menstrual calendar. Analgesic. Oral contraceptives
II	Moderate dysmenorrhoea. Without systemic or scarce symptoms. It interferes the activities, partially.	Education. Menstrual calendar Ibuprofen 400 mg every 8 hours or sour mefenamic 500 beginning mg and then 250 mg every 6 hours.
III	Intense dysmenorrhoea. There are systemic symptoms. It interferes the activities	Sodium naproxen in suppositories 500 beginning mg and then 250 mg every 6 hours.

Table 2. Behavior according to the grade of intensity of the dysmenorrhoea

**Light dysmenorrhoea**

The treatment is based on the patient's education, the use of menstrual calendar, analgesic and oral contraceptives.

**Moderate dysmenorrhoea**

Education is also important. It is allowed to increase the aspirin dose to 500 mg every 6 hours. Antispasmodic and muscle relaxants are useful. Progestogens has demonstrated their effectiveness in the second half of the cycle. It is insisted a lot in the effectiveness of the ibuprofen in this stage.



### Severe dysmenorrhoea

Maintain the general educational measures, the use of the calendar, etc, we pointed out in the previous square.

Many authors insist in the advantage of the sodium naproxen in suppositories 500 mg. at the beginning and then 250 mg every 6 hours.

### Secondary dysmenorrhoea

In general terms, this type of dysmenorrhoea gets better with the specific treatment of the underlying cause.

### 9.1 Rehabilitation

It is another alternative form of treatment that some authors recommend independently that it is carried out previously the signal therapy.

### 9.2 Kinesitherapy

Its objective is to get relaxation of the back musculature, and to strengthen the different muscular groups with the purpose of avoiding antalgic postures that could cause, secondarily, contractions in adductors muscles and in the lumbar region. It is proposed the following guide of exercises following Beare and Myers:

1. Balance of the back. It seeks to stretch the paravertebral muscles, of the back and neck, as well as those of the buttocks. To get this, the patient in supine position and relaxed, will take the knees to the chest placing her hands intertwined in the hollow popliteal. In that position, she will practice from five to 10 slow swinging movements toward before and behind, from the buttocks until the neck.
2. Sit down partially. Its purpose is to strengthen the abdominal muscles. The patient in supine position with bent knees and leaning feet on the floor will contract the abdominal musculature and bend slowly the trunk until being held to their knees with extended arms. She will stay in that position for five seconds, returning then, slowly, to the departure position. She will repeat the exercise from five to 10 times.
3. Basculation of the pelvis. Its objective is to strengthen the abdominal and lumbar musculature. The departure position is the one of supine with bent knees and feet on the floor with crisscross hands behind the nape. Then, she will contract, firmly the muscles of the buttocks and abdomen, pressing the low part of the back against the support plane. She will maintain the contraction during five seconds and she will relax later. She will repeat the exercise from five to 10 times.
4. Kegel's exercises. They are good to strengthen the muscles of the floor of the pelvis. The patient can start from sitting or upright position. She is asked to contract the musculature of the floor of the pelvis strongly (like to interrupt the urinal flow) during five seconds, relaxing next and repeating the exercise 10 times. This exercise will be carried out several times a day. Then, the patient in supine position with a pillow under the hollow popliteal and crossed legs, will be requested to press the buttocks and contract the anus (like to avoid the defecation). The knees should remain firmly pressed during 5 seconds; then the patient should relax them and repeat that at least 10 times.

### 9.3 Microwaves

It is well-known that electromagnetic waves of high frequency produce heat in deep tissues, especially in those that have high content of water. The muscle, the interstitial liquid and the blood warm in a more selective way. This has a favorable effect on the dysmenorrhoea when improving the flow of blood through the myometrium, being eliminated in this way, the prostaglandins producers of the pain. Nevertheless, and to assure a bigger penetration, you could opt for a therapy with pulsatile microwaves with irradiator of round field R, inserting cushions of sand so that the field, homogeneously concentrated, can act with more intensity and more deeply.

An intermediate level of power of 45 watts will be used. The application will be made at abdominal level and with the patient in supine or lateral position. The number of sessions will be in function of the intensity of the pain. It will be enough, in general, with one or two days for menstrual cycle, being carried out the application in the moment of appearance of the symptoms. The treatment will be continued during 6-7 cycles, been proved that in the following menstrual cycles after the application of the treatment the obtained improvement is the same. As the existence of metallic objects in the place of the treatment is a formal contraindication for the application of microwaves, it will be contraindicated in carriers of intra-uterine devices or others metallic implants.

### 9.4 TENS

The electric transcutaneous nervous stimulation has been described as an effective and innocuous method for the relief of pain in primary dysmenorrhoea. It is used Impulses between 0, 2 and 1 ms and a frequency of 70-100 Hz (11). The intensity will be adapted to the patient's sensibility, trying to arrive to 40-50 MA. The application will be carried out on inferior abdominal region, sacroiliac region and the last two lumbar levels.

### 9.5 Relaxation techniques

The most used technique is the progressive relaxation of Jacobson, it considers that emotional experiences can represent a predisposing factor in the appearance of dysmenorrhoea, due to the existent nexus between personal experience and muscular tensions (uterine, abdominal, lumbar and adductors, in this case). The relaxation session will last one hour, it starts taking a progressive and continuous conscience of the different areas of the body, until the patient gets to the so called differential relaxation, looking for the minimum of necessary tension to carry out an act.

## 10. Comments

It won't always be necessary to make use of all the therapeutic methods described previously. Everything will depend on the severity of the manifestation and on the acceptance of the patient to some of the signalled methods.

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