

Dysmenorrhoea

Clinical Definition

Dysmenorrhoea describes the presence of painful lower abdominal cramps, often accompanied by lower back and upper thigh pain which occurs monthly with menstruation¹. It is one of the most common complaints in women of reproductive age² and is the most common gynaecologic complaint amongst adolescents/young women³.

Epidemiology

It is estimated up to 30–50% of menstruating women are affected by dysmenorrhoea on a regular monthly basis⁴. A sometimes disabling condition, dysmenorrhoea is one of the most common reasons for non-attendance at school or work among young women and while not life-threatening, can have a considerable impact on the patient's quality of life⁵.

Classification

Dysmenorrhoea may be classified according to its pathology. Primary dysmenorrhoea is idiopathic and occurs in women where no pelvic cause is found, whereas secondary dysmenorrhoea is usually due to some form of pelvic pathology⁶.

Primary Dysmenorrhoea

Menstrual pain in the absence of pelvic pathology is known as primary dysmenorrhoea. It usually begins within two years of menarche⁴. Pain is often the most severe on the first day of the menstrual cycle or the day preceding it, and can last up to 72 hours.

Aetiology:

The cause of primary dysmenorrhoea is thought to be due to an increase in prostaglandin release, leading to increased uterine contractility⁷. There is good evidence to suggest that prostaglandins such as PGE₂ and PGF_{2α} are involved, as higher concentrations of these prostaglandins were found in the menstrual fluid of women with dysmenorrhoea⁷. In addition to being potent myometrial stimulants, these prostaglandins act as vasoconstrictors, causing

endometrial blood vessels to contract. The reduction in blood supply to the endometrium eventually leads to necrosis and shedding of the endometrial layer at the onset of menstruation⁸. Research has shown that leukotrienes may have a role in dysmenorrhoea by intensifying the sensitivity of the pain fibres in the uterus. Substantial amounts have been in the endometrium of women with severe dysmenorrhoea who do not respond to anti-prostaglandin treatment⁹.

Secondary Dysmenorrhoea

Secondary dysmenorrhoea usually presents many years after menarche and by definition, is due to pelvic pathology⁴. There are many conditions which are associated with secondary dysmenorrhoea including:

- Endometriosis
- Adenomyosis
- Fibroids
- Pelvic Inflammatory Disease

Symptoms

In addition to spasmodic lower abdominal pain that may radiate to the back and legs, patients often complain of⁴:

- Nausea or vomiting
- Headache
- Fatigue
- Diarrhoea/Gastrointestinal upset
- Dyspareunia (pain on intercourse– usually deep dyspareunia)

Management

It is important to distinguish whether a patient has symptoms of primary or secondary dysmenorrhoea. Therefore a thorough history should be taken along with the appropriate examination and investigations.

History:

The important questions to ask a patient presenting with painful periods are as follows⁷:

- Menstrual history: age of menarche, frequency and length of periods, estimation of menstrual flow, post-coital or inter-menstrual bleeding
- Severity of pain of periods and frequency of dysmenorrhoea including timing of pain in relation to period
- Impact of pain on everyday life
- Associated symptoms (e.g. dyspareunia, vaginal discharge)
- Sexual history
- Obstetric history
- Contraceptive history

Examination:

Examination of the patient is determined by the history taking. For example, pelvic examination is not appropriate for a patient with primary dysmenorrhoea as the findings may be completely normal. There may be findings on examination in patients with secondary dysmenorrhoea however, depending on the particular aetiology. For example in a patient with endometriosis, cervical excitation may be elicited¹⁰.

Investigations:

In a patient with suspected primary dysmenorrhoea investigations such as a trans-abdominal ultrasound scan will most likely reveal normal pelvic organs but can provide reassurance to the patient⁴. In the case of secondary dysmenorrhoea – ultrasound scanning may reveal the presence of fibroids or ‘chocolate cysts’ (endometriotic cysts filled with old blood, usually present on the ovary and signify severe disease). Other investigations that may be carried out include:

- Genital tract swabs to rule out sexually transmitted infections as a cause of acute pelvic infection⁷

- Laparoscopy is the gold standard investigation at diagnosing endometriosis. It is usually performed once initial treatment has commenced and subsequently been unsuccessful³ or if the woman is having difficulty in conceiving. It is important to note that findings at laparoscopy do not correlate well with symptoms.

Treatment

For secondary dysmenorrhoea, the treatment will be dependent upon the underlying pathology; however analgesia should be advised during menstruation until the diagnosis is found.

Primary dysmenorrhoea can be managed conservatively or pharmacologically. Pharmacological treatment is as follows:

1. Non-steroidal anti-inflammatory medication¹¹ (NSAIDs)

Mefenamic Acid and Ibuprofen are favoured among this category due to their safety; however patients should be aware of the adverse effects of NSAIDs including gastrointestinal upset (e.g. nausea and vomiting). NSAIDs are thought to provide effective relief from dysmenorrhoea by suppressing endometrial prostaglandins, enabling uterine activity to return to normal¹².

2. Combined Oral Contraceptive Pill (COC)

Suppression of ovulation can directly reduce prostaglandin levels as well as lengthen cycles, hence help to reduce the severity of dysmenorrhoea¹³. It is suggested that patients should be started on NSAIDs for a short period of time (three months) and if this is unsuccessful, the COC should be started for a further three months³. In patients who also require contraception, this is especially useful. Packets are tri-cycled, which means taking 3 packets back to back to minimise the symptoms of endometriosis. Side effects of hormonal contraception such as nausea, weight gain and increased risk of thrombosis should be considered and explained adequately to the patient¹³. If symptoms have not improved after this, it is important to consider further investigation by laparoscopy.

3. Depot Progestogens

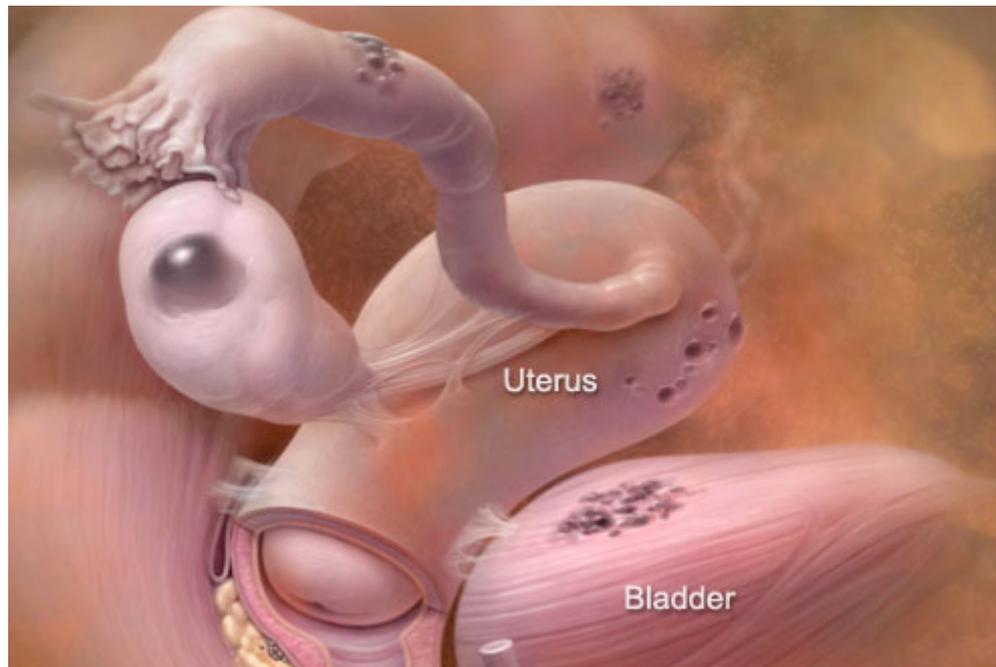
Injectable progestogen-only contraceptives may be used in women unable to tolerate the COC and also work by suppressing ovulation⁷. They have a similar side effect profile to the COC.

4. Levonorgestrel Intrauterine System

Commonly used for heavy menstrual bleeding, the hormonal intrauterine system can help to relieve pain by reducing heavy blood flow¹¹. Side effects include irregular bleeding and problems with insertion e.g. in nulliparous women.

5. Laparoscopy

Can be used as both a diagnostic procedure and for direct treatment of endometritic deposits found (which look like gun powder blue to brown spots – consider inserting a picture). Direct cauterisation ‘burns’ away the deposit in the hope of reducing pain in future. This procedure comes with the risks of general anaesthetic and laparoscopic surgery.



(This picture shows the endometrial deposit on pelvic organs & peritoneal deposits)

Conservative management includes the direct application of **heat patches**, which can significantly reduce pain and has been comparable to the use of NSAIDs in effectively relieving dysmenorrhoea⁸. Many women also state that **exercise** is particularly useful as it releases beta-endorphins that work as natural analgesic agents. They also help by relieving stress and improving the mood of the patient¹.

References

1. Brown J, Brown S. Exercise for dysmenorrhoea. Cochrane Database Systematic Review. 2010 Feb 17 ;(2):CD004142.
2. Roberts SC, Hodgkiss C. Managing dysmenorrhea in young women. *The Nurse Practitioner*. 2012 Jul 10;37(7):47-52.
3. Harel Z. Dysmenorrhea in adolescents and young adults: an update on pharmacological treatments and management strategies. *Expert Opinion on Pharmacotherapy*. 2012 Oct;13(15):2157-70.
4. Magowan B, Owen P, Drife J. *Clinical Obstetrics & Gynaecology*. Second Edition. China. Saunders Elsevier. 2009.
5. Nur Azurah AG et al. The Quality of Life of Adolescents with Menstrual Problems. *Journal of Pediatric and Adolescent Gynaecology*. 2013 Jan 18. pii: S1083-3188(12)00239-2
6. Patient UK. Dysmenorrhoea. (Online). Available from: <http://www.patient.co.uk /doctor/Dysmenorrhoea.htm>. (Accessed 13/02/13).
7. Kalis K. Medscape Reference. Dysmenorrhea. (Online). Available from: <http://emedicine.medscape.com/article/253812-overview>. (Accessed 13/02/13).
8. Shahindokht N et al. Comparing the analgesic effect of heat patch containing iron chip and ibuprofen for primary dysmenorrhea: a randomized controlled trial. *BMC Women's Health*. 2012 Aug 22;12:25.
9. Sundell G, Milsom I, Andersch B. Factors influencing the prevalence and severity of dysmenorrhoea in young women. *Br J Obstet Gynaecol*. 1990;97(7):588-94.

10. Barbieri RL, Propst AM. Physical examination findings in women with endometriosis: uterosacral ligament abnormalities, lateral cervical displacement and cervical stenosis. *J Gynecol Tech.* 1999;135:102.
11. National Institute for Health and Clinical Excellence. Heavy Menstrual Bleeding Guideline. January 2007. (Online). Available from: <http://www.nice.org.uk/nicemedia/live/11002/30403/30403.pdf>. (Accessed 13/02/13).
12. Majoribanks J et al. Nonsteroidal anti-inflammatory drugs for dysmenorrhoea. *Cochrane Database Systematic Review.* 2010 Jan 20;(1):CD001751.
13. Wong CL. Oral contraceptive pill for primary dysmenorrhoea. *Cochrane Database Systematic Review.* 2009 Oct 7;(4):CD002120.