Dysmenorrhoea

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Abstract

Dysmenorrhoea is a very common condition in women of reproductive age and is the main cause of absent days from school and the workplace in under 30's. In younger women this is more often primary dysmenorrhoea with no underlying cause. The mainstays of treatment are NSAIDs and ovarian suppression using the COCP. In older women there can be an underlying pathology causing secondary dysmenorrhoea, commonly endometriosis or adenomyosis. The treatment for this is of the underlying condition and can involve surgical treatment ranging from laparoscopic treatment of endometriosis to hysterectomy. For women who wish to retain to option to conceive GnRH analogues can be used for endometriosis and uterine artery embolisation can be used for adenomyosis. Conservative treatments such as heat packs, TENs and vitamin B1 may be of benefit.

Keywords adenomyosis; COCP; dysmenorrhoea; endometriosis; NSAIDs

Introduction

Dysmenorrhoea is one of the most common gynaecological problems for women in their reproductive years. It is typically painful pelvic and lower back cramping during menstruation and occasionally starting before menstruation. Nausea, vomiting and headache are associated features. It is the most common cause of short term school absence in adolescents and of work absence in women under thirty years old. It consists of painful cramps accompanying menstruation. In the absence of any underlying abnormality is known as primary dysmenorrhoea and when it is part of an underlying disease process, for example endometriosis or adenomyosis, it is termed secondary dysmenorrhoea.

Primary dysmenorrhoea

Primary dysmenorrhoea occurs in younger women from the age of menarche, often 6–12 months after. The pain starts shortly before menstruation as eases after approximately 72 hours as menses progress. Other gynaecological symptoms are absent but it can be associated with nausea, vomiting and headache. It is thought to be caused by degenerating endometrial cells releasing prostaglandin F2α, a myometrial stimulant and vasoconstrictor. This mediates prolonged uterine contractions and reduced blood flow and likely to cause pain though ischaemia. Elevated prostaglandin levels have been found in the endometrial fluid of women with dysmenorrhoea and correlate with the degree of pain.

Secondary causes for dysmenorrhoea must be excluded before considering a diagnosis of primary dysmenorrhoea. All women should be, except in an adolescent who has never been sexually active and has a typical history of mild to moderate pain. Physical examination has normal findings and investigations such as vaginal swabs, pelvic USS and laparoscopy are usually normal. Treatment is based on reassurance, analgesia and cycle control; this can usually be commenced in primary care.

Secondary dysmenorrhoea

Secondary dysmenorrhoea is caused by an underlying disease process and is more common in women aged 30–45 years after a period of pain free menses. The most common causes are endometriosis, as well as adenomyosis. Other causes of secondary dysmenorrhoea are intrauterine device related dysmenorrhoea, Mullerian abnormalities or imperforate hymen.

Symptoms that may suggest secondary dysmenorrhoea are dyspareunia, vaginal discharge, menorrhagia, intermenstrual bleeding, and postcoital bleeding. Non-gynaecological symptoms such as rectal pain or bleeding may also suggest secondary dysmenorrhoea due to endometriosis. In adolescents experiencing dysmenorrhoea in the first 6 months from the start of menarche, and when an amenorrhoeic patient complains of dysmenorrhoea, the diagnosis of obstructing malformation of the genital tract should be considered.

Undertake an abdominal examination in all women, to assess for large fibroids and other masses. If the woman has not responded to first line therapy, also include a pelvic examination including speculum and swabs, unless the woman is an adolescent with a typical history of mild to moderate dysmenorrhoea who has never been sexually active. Physical examination findings that would point towards endometriosis would be a fixed uterus or palpable pelvic nodules. Women with adenomyosis typically have a tender enlarged uterus.

Investigations for secondary dysmenorrhoea should include a pelvic USS which may reveal endometrioma, fibroids or an enlarged uterus with features of adenomyosis. Women suffering from suspected secondary dysmenorrhoea or those with abnormal examination or USS findings would be most appropriately managed by gynaecologists. Treatment is based on tackling the underlying pathogenesis.

Differential diagnoses of dysmenorrhoea

Primary dysmenorrhoea

- A diagnosis of exclusion

Secondary dysmenorrhoea

- Endometriosis
- Adenomyosis
- Fibroids — lower abdominal pain, frequently accompanied by menorrhagia; a pelvic mass may be identified on examination
- Endometrial polyps
- Cervical stenosis
- Obstructive malformations of the genital tract
- Intrauterine device (IUD) insertion

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- Chronic pelvic inflammatory disease
- Pelvic adhesions

Non-gynaecological causes of dysmenorrhoea

- Irritable bowel syndrome
- Inflammatory bowel disease
- Interstitial cystitis

Red flags on investigation

- An abnormal cervix on examination – cervical cancer
- Persistent intermenstrual or postcoital bleeding in absence of infection – cervical cancer, endometrial cancer
- Palpable mass which is not obviously uterine fibroids
- USS suggestive of cancer

Case 1: Teenager with dysmenorrhoea – COCP and NSAIDS

"A 15 year old girl presents to her GP with painful menses. The pain starts the day before her period starts and lasts for a couple of days. She has had regular periods for one year but they have been becoming more painful for the last four months. She is otherwise fit and well and not sexually active."

Non-steroidal anti-inflammatory drugs

On a history of typical cyclical menstrual pain consistent with primary dysmenorrhoea empirical treatment can be started with NSAIDs. NSAIDs are a very effective treatment for dysmenorrhoea and would be first line treatment for a girl who has mild dysmenorrhoea. The recommendation to offer NSAIDS is based on expert opinion from guidelines published by the Royal College of Obstetricians and Gynaecologists (The initial management of chronic pelvic pain, 2012) and evidence from a Cochrane systematic review.

Research has shown that women with dysmenorrhoea have high levels of prostaglandins, hormones known to cause cramping abdominal pain. Non-steroidal anti-inflammatory drugs (NSAIDs) are drugs that act by blocking prostaglandin production. They inhibit the action of cyclooxygenase (COX), an enzyme responsible for the formation of prostaglandins. The COX enzyme exists in two forms, COX-1 and COX-2. Traditional NSAIDs are considered 'nonselective' because they inhibit both COX-1 and COX-2 enzymes.

There is no evidence of superiority of a certain NSAID for dysmenorrhoea, aside from aspirin which performs less well. One has to be aware of the side effects of treatment, most commonly indigestion, gastritis, headaches and drowsiness. Ibuprofen is considered to have a lower risk of gastrointestinal adverse effects than other NSAIDs. It is licensed for use in the management of dysmenorrhoea in girls and women of all ages. Naproxen is associated with an intermediate risk of gastrointestinal adverse effects and is licensed for use in dysmenorrhoea from 16 years of age onwards. The recommendation regarding mefenamic acid is based on expert opinion from external reviewers and the fact that there is no evidence that it is more effective than other NSAIDs. Although it is licensed for the treatment of dysmenorrhoea, there are concerns that it is more likely to cause seizures in overdose and it has a low therapeutic window which increases the risk of accidental overdose. The National Poisons Information Service considers an ingestion of 40 mg/kg or more to be potentially toxic [NPIS, 2013]. This means that, a woman who weighs 50 kg would only need to ingest one extra dose of 500 mg of mefenamic acid in 24 hours (total of 2000 mg) to be considered to be at risk of toxicity.

Paracetamol is beneficial as a simple analgesic for mild pain and would be suitable if a patient suffered from GI side effects. Weak opioids are not recommended for the treatment of dysmenorrhoea as there is no evidence for this and they are potentially addictive.

Hormonal suppression

Combined oral contraceptive pills have been shown to be effective in relieving primary dysmenorrhoea by high quality evidence in a Cochrane review as well as being recommended by RCOG and SOGC (Society of Obstetricians and Gynaecologists of Canada). They also have the benefit of acting as contraception for those who need it. There is no benefit in one generation or higher dose pills so the low dose preparations of OCP with doses less than 35 mcg should be the preparation of choice. COCs containing 20 μg of ethinylestradiol are less preferred because they are more likely to cause unscheduled bleeding. Ovarian suppression induces endometrial thinning and hence reduces menstrual fluid volume and the level of prostaglandins. This result reduces myometrial contractions during menses. Ovarian suppression to treat dysmenorrhoea can be trialled for 3–6 months in women with cyclical pain.

Hormonal suppression can also be achieved with progesterones such as the progesterone only pill Desogestrel 75 mcg, Depo Provera, Nexplanon subdermal implant or Levonorgestrel-releasing intrauterine system (LNG-IUS, Mirena®). Desogestrel 75 mcg can induce amenorrhoea in 10% of its users, more than other progesterone only pills, and can reduce dysmenorrhoea. Depo Provera is associated amenorrhoea which comes with the benefit of reduced dysmenorrhoea. However, there are concerns regarding reduced bone mineral density because of the resultant low levels of oestradiol and oestrone. This does recover after cessation of use but the advice from Faculty of Sexual and Reproductive Health is only to use it if other methods have been considered. The LNG-IUS is not licensed for use in dysmenorrhoea but is for contraception and menorrhagia. It has been shown to be effective for relieving pain associated with menstruation and is recommended by RCOG guideline 'The initial management of chronic pelvic pain, 2012' for non-endometriosis related cyclical pelvic pain. Although it does not suppress ovulation, the LNG-IUS has a local effect on the endometrium, which becomes atrophic and inactive. The effect of this is to reduce blood loss by 71–95%, after 6 months with 17% developing amenorrhoea after 1 year of use. Evidence from one observational study suggests that the levonorgestrel-releasing intrauterine system (LNG-IUS), Mirena® may be effective for relieving pain associated with menstruation. The Mirena® is particularly suited to women who have had vaginal deliveries and have menorrhagia.

The doctor patient relationship is also important in addressing and managing the patients pain as evidence suggests that patients who feel that their doctor involves them in decisions about their healthcare are more satisfied with their management. Lifestyle factors should also be addressed as there is evidence that smoking worsens menstrual pain. There is equivocal evidence

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