Women’s Health

Cystitis

Dysmenorrhoea

Cystitis

- Cystitis is a term used to describe a collection of urinary symptoms including dysuria, frequency and urgency.
- The urine may be cloudy and strong smelling; these may be signs of bacterial infection.
- In 50% of cases, no bacterial cause is found.
- When infection is present, the common bacteria are *Escherichia coli* or *Staphylococcus saprophyticus,* and the source is often the gastrointestinal (GI) tract.

- About half of the cases will resolve within 3 days even without treatment.
- Cystitis is common in women but rare in men; it has been estimated that more than one in two women will experience an episode of cystitis during their lives.
- The pharmacist should be aware of the signs that indicate more serious conditions.
- Over-the-counter (OTC) products are available for the treatment of cystitis, but are recommended only when symptoms are mild, or for use until the patient can consult her doctor or nurse.

What you need to know

- Age
  - Adult, child
- Male or female
- Symptoms
  - Urethral irritation
  - Urinary urgency, frequency
  - Dysuria (pain on passing urine)
  - Haematuria (blood in the urine)
  - Vaginal discharge
- Associated symptoms
  - Back pain
  - Lower abdominal (suprapubic) pain
  - Fever, chills
  - Nausea/vomiting
- Duration
- Previous history
- Medication

Age

- Any child with the symptoms of cystitis should always be referred to the doctor for further investigation and treatment.

- Urinary tract infections (UTIs) occur in children, and damage to the kidney or bladder may result, particularly after recurrent infections.

Gender

- Cystitis is much more common in women than in men for two reasons:

1. Cystitis occurs when bacteria pass up along the urethra and enter and multiply within the bladder. As the urethra is much shorter in females than in males, the passage of the bacteria is much easier. In addition, the process is facilitated by sexual intercourse.

2. There is evidence that prostatic fluid has antibacterial properties, providing an additional defense against bacterial infection in males.

Referral

- Any man who presents with the symptoms of cystitis requires medical referral because of the possibility of more serious conditions such as
  - kidney or bladder stones
  - prostate problems.

- *Pregnancy*
- If a pregnant woman presents with symptoms of cystitis, referral to the doctor is the best option, because bacteriuria (presence of bacteria in the urine) in pregnancy can lead to kidney infection and other problems.

Symptoms

- Cystitis sufferers often report that the first sign of an impending attack is an itching or pricking sensation in the urethra.

- The desire to pass urine becomes frequent and women with cystitis may feel the need to pass urine urgently, but pass only a few burning, painful drops.

- This frequency of urine occurs throughout the day and night.

- Dysuria (pain on passing urine) is a classical symptom of cystitis.
- After urination, the bladder may not feel completely empty, but even straining produces no further flow.
- The urine may be cloudy and strong smelling; these may be signs of bacterial infection.

Chlamydial infection

- Chlamydia is a sexually transmitted infection and is most commonly seen in women aged 16–24 years.
- About 1 in 10 women under the age of 25 years have it.
- Unfortunately, most women with it (about 80%) do not have any symptoms.
- Those that do can have
  - symptoms of cystitis,
  - an alteration in vaginal discharge
  - lower abdominal pain.

- Chlamydia can cause pelvic inflammatory disease (PID) and infertility.
- It is important that the infection be detected and treated.
- Screening programmes for chlamydia are now widespread.
- Women under 25 years attending health clinics (contraceptive clinics, general practice, young people's services, antenatal clinics, etc.) for any reason are offered screening and in some areas community pharmacies offer a screening (and sometimes treatment) service.
- Each woman is offered a urine test and given a vulvovaginal swab to self-collect. Women can choose how to receive their results, for example, phone, post, etc. Those with positive results are offered treatment with *azithromycin* and advised about informing their sexual partner(s).
- The use of condoms can prevent the infection from being spread.

Blood in urine

- Haematuria (presence of blood in the urine) is an indication for referral.
- It often occurs in cystitis when there is so much inflammation of the lining of the bladder and urethra that bleeding occurs.
- This is not serious and responds quickly to antibiotic treatment.
- Sometimes blood in the urine may indicate other problems such as a kidney stone.
- When this occurs, pain in the loin or between the loin and groin is the predominant symptom.
- When blood in the urine develops without any pain, specialist referral is required to exclude the possibility of a tumour in the bladder or kidney.

Vaginal discharge

- The presence of a vaginal discharge would indicate local fungal or bacterial infection and would require referral.

Associated symptoms

- When dealing with symptoms involving the urinary system, it is best to think of it as divided into two parts:
  - the upper (kidneys and ureters) and
  - the lower (bladder and urethra).

- The pharmacist should be aware of the symptoms that accompany minor lower UTI and those that suggest more serious problems higher in the urinary tract, so that referral for medical advice can be made where appropriate.

Upper UTI symptoms

- Systemic involvement, demonstrated by fever, nausea, vomiting, loin pain and tenderness are indicative of more serious infection such as pyelitis or pyelonephritis, and patients with such symptoms require referral.

Other symptoms

- Cystitis may be accompanied by suprapubic (lower abdominal) pain and tenderness.

Duration

- Treatment with OTC preparations is reasonable for mild cystitis of
- short duration (less than 2 days).

Previous history

- Women with recurrent cystitis should see their doctor.
- One in two episodes of cystitis is not caused by infection and the urethral syndrome is thought to be responsible for these non-infective cases.
- The anxiety produced by repeated occurrences of cystitis is itself thought to be a contributory factor.
- An estimated one in ten cases of UTI is followed by relapse (the same bacterium being responsible) or reinfection (where a different organism may be involved).
- The remaining nine cases clear up without recurrence.

Diabetes

- Recurrent cystitis can sometimes occur in diabetic patients and therefore anyone describing a history of increasing thirst, weight loss and a higher frequency of passing urine than normal should be referred.

Honeymoon cystitis

- Sexual intercourse may precipitate an attack (honeymoon cystitis) due to minor trauma or resulting infection when bacteria are pushed along the urethra.

Other precipitating factors

- Other precipitating factors may include
  - the irritant effects of toiletries (e.g. bubble baths and vaginal deodorants)
  - other chemicals (e.g. spermicides and disinfectants).

- Lack of personal hygiene is not thought to be responsible, except in extreme cases.

Postmenopausal women

- Oestrogen deficiency in postmenopausal women leads to thinning of the lining of the vagina.
- Lack of lubrication can mean the vagina and urethra are vulnerable to trauma and irritation and attacks of cystitis can occur.
- For such women, painful intercourse can also be a problem and this can be treated with OTC lubricants or prescribed products (e.g. oestrogen creams).

Medication

- Cystitis can be caused by cytotoxic drugs such as *cyclophosphamide*.
- The identity of any preparations already taken to treat the symptoms is therefore important.
- The pharmacist may then decide whether an appropriate remedy has been used. Failed medication would be a reason for referral to the doctor.

Treatment timescale

- If symptoms have not subsided within 2 days of beginning the treatment,
- the patient should see her doctor.

When to refer

All men, children

- Fever, nausea/vomiting
- Loin pain or tenderness
- Haematuria
- Vaginal discharge
- Duration of longer than 2 days
- Pregnancy
- Recurrent cystitis
- Failed medication

Management

- For pain relief, offer *paracetamol* or *ibuprofen* for up to 2 days.
- A high temperature will also be reduced, bearing in mind that a level above 38.5◦C is more characteristic of pyelonephritis.
- The pharmacist can also recommend a product that will alkalinise the urine and provide symptomatic relief, although there is no good evidence of effectiveness.
- Other OTC preparations are of doubtful value.
- In addition to treatment, it is important for the pharmacist to offer advice about fluid intake.
- For women in whom cystitis is a recurrent problem, self-help measures can sometimes prevent recurrence. Signposting to relevant information is useful.

Potassium and sodium citrate

- Potassium and sodium citrate work by making the urine alkaline.
- The acidic urine produced as a result of bacterial infection is thought to be responsible for dysuria; alkalinisation of the urine can therefore provide symptomatic relief.
- While easing discomfort, alkalinising the urine will not produce an antibacterial effect, and it is important to tell patients that if symptoms have not improved within 2 days, they should see their doctor.
- Proprietary sachets are more palatable than *potassium citrate mixture.*

- *Contraindications*
- For *potassium citrate,* these would include anyone taking potassium-sparing diuretics, aldosterone antagonists or angiotensin converting enzyme inhibitors, in whom hyperkalaemia may result.

- Sodium citrate should not be recommended for hypertensive patients, anyone with heart disease or pregnant women.

- *Warning*
- Patients should be reminded not to exceed the stated dose of products containing *potassium citrate:* several cases of hyperkalaemia have been reported in patients taking *potassium citrate mixture* for relief from urinary symptoms.

Complementary therapies

- *Cranberry juice* has been recommended as a folk remedy for years as a preventive measure to reduce UTI.
- A systematic review of evidence showed that drinking *cranberry juice* on a regular basis (300 mL per day) has a bacteriostatic effect.
- The mechanism for this is unknown and the full clinical implications have not been elucidated.
- Capsules containing 200 mg *cranberry extract* are available.
- *Cranberry juice* or capsules are unlikely to be effective in the treatment of acute cystitis.
- Patients taking *warfarin* should not take cranberry products.

Azithromycin and chlamydial infection

- it has been proposed that the antibiotic azithromycin should be deregulated from prescription-only medicine control for the treatment of asymptomatic chlamydial infection following a positive test result (nucleic acid amplification test (NAAT)).

- Two 500 mg tablets of azithromycin would be given as a single-dose treatment.

- Symptomatic cases of *Chlamydia* would be referred since they have an increased risk of complications.

Practical points

- **1** There is little evidence to support much of the traditional advice that has been given to women with cystitis, and the list below can be discussed with the woman to consider acceptability.
- (i) Drinking large quantities of fluids should theoretically help in cystitis because the bladder is emptied more frequently and completely as a result of the diuresis produced; this is thought to help flush the infecting bacteria out of the bladder. However, this may cause more discomfort where dysuria is severe and may be better as advice to prevent recurrence rather than to use during treatment. Drinking the normally recommended amount of fluids may be preferred.
- (ii) During urination the bladder should be emptied completely by waiting for 20 seconds after passing urine and then straining to empty the final drops. Leaning backwards is said to help to achieve a complete emptying of the bladder than the usual sitting posture.
- (iii) After a bowel motion wiping toilet paper from front to back may minimise transfer of bacteria from the bowel into the vagina and urethra.
- (iv) Urination immediately after sexual intercourse will theoretically flush out most bacteria from the urethra but there is no evidence to support this.
- **2** Reduced intake of coffee and alcohol may help because these substances seem to act as bladder irritants in some people.

Case 1

- Mrs Anne Lawson, a young woman in her 20s, asks to have a quiet
- word with you. She tells you that she thinks she has cystitis. On questioning,
- you find that she is not passing urine more frequently than
- normal, but that her urine looks dark and smells unpleasant. Mrs
- Lawson has back pain and has been feeling feverish today. She is not
- taking any medicine from the doctor and has not tried anything to
- treat her symptoms.

Case 2

- A youngman asks if you can recommend a good treatment for cystitis.
- In response to your questions, he tells you that the medicine is for
- him: he has been having pain when passing urine since yesterday.
- He otherwise feels well and does not have any other symptoms. No
- treatments have been tried already and he is not currently taking any
- medicines.

Case 3

- It is Saturday afternoon and a young woman whom you do not recognize as a regular customer asks for something to treat cystitis. On questioning, you find out that she has had the problem several times
- before and that her symptoms are frequency and pain on passing urine.
- She is otherwise well and tells you that her doctor has occasionally prescribed
- antibiotics to treat the problem in the past. She is not taking
- any medicines.

- **Dysmenorrhoea**

Dysmenorrhoea

- It has been estimated that as many as one in two women suffers from dysmenorrhoea (period pains).

- Up to one in ten of those affected will have severe symptoms, which necessitate time off school or work.

- Pharmacists should remain aware that discussing menstrual problems is potentially embarrassing for the patient and should therefore try to create an atmosphere of privacy.

What you need to know

- Age
- Previous history
- Regularity and timing of cycle
- Timing and nature of pains
- Relationship with menstruation
- Other symptoms
  - Headache, backache
  - Nausea, vomiting, constipation
  - Faintness, dizziness, fatigue
  - Premenstrual syndrome (PMS)
- Medication

Age

- The peak incidence of primary dysmenorrhoea occurs in women between the ages of 17 and 25 years.

- Primary dysmenorrhoea is defined as pain in the absence of pelvic disease,

- whereas secondary dysmenorrhoea refers to pain, which may be due to underlying disease.

- Secondary dysmenorrhoea is most common in women aged over 30 years and is rare in women aged under 25 years.

- Common causes of secondary dysmenorrhoea include
  - endometriosis or
  - PID.

- Primary dysmenorrhoea is uncommon after having children.

Previous history

- Dysmenorrhoea is often not associated with the start of menstruation (menarche).
- This is because during the early months (and sometimes years) of menstruation, ovulation does not occur.
- These anovulatory cycles are usually, but not always, pain free and therefore women sometimes describe period pain that begins after several months or years of pain-free menstruation.
- The pharmacist should establish whether the menstrual cycle is regular and the length of the cycle.
- Further questioning should then focus on the timing of pains in relation to menstruation.

Timing and nature of pains

- *Primary dysmenorrhoea*
- Primary dysmenorrhoea classically presents as a cramping lower abdominal pain that often begins during the day before bleeding starts.

- The pain gradually eases after the start of menstruation and is often gone by the end of the first day of bleeding.

- *Mittelschmerz is ovulation pain which occurs midcycle,* at the time of ovulation. The abdominal pain usually lasts for a few hours, but can last for several days and may be accompanied by some bleeding.

Secondary dysmenorrhoea

- The pain of secondary or acquired dysmenorrhoea may occur during other parts of the menstrual cycle and can be relieved or worsened by menstruation.

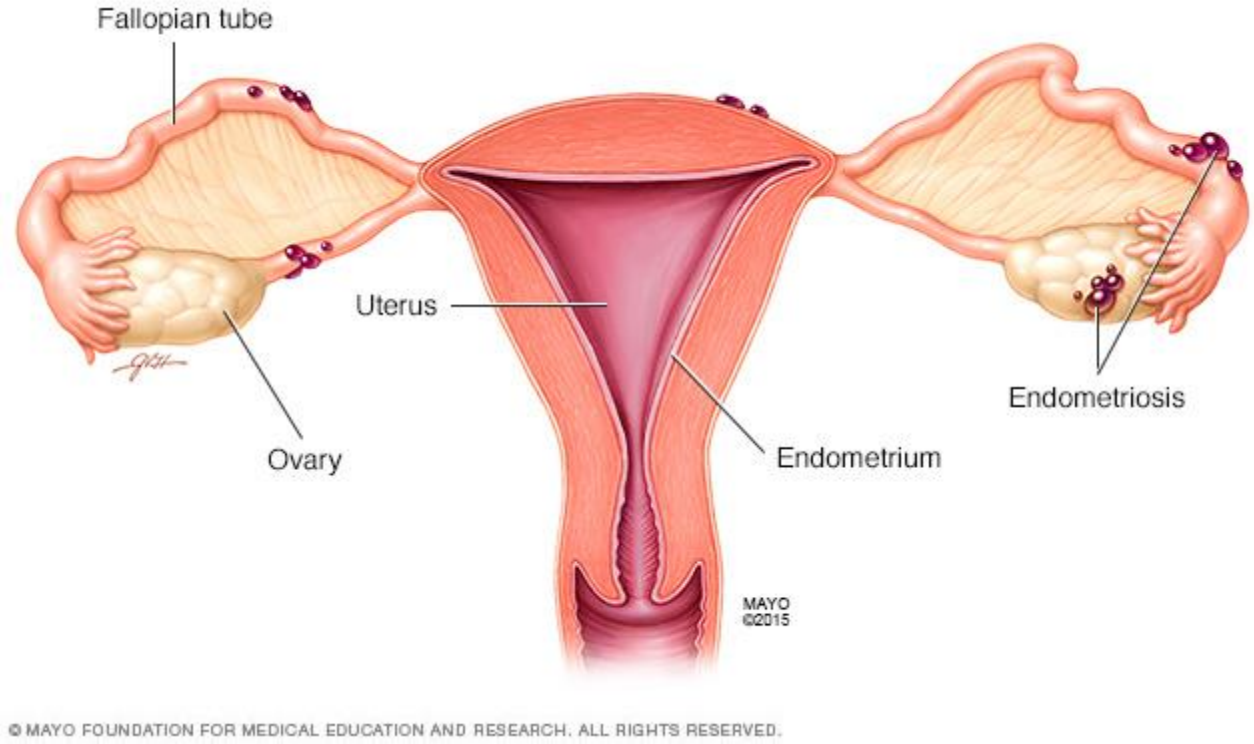
- Such pain is often described as a dull, aching pain rather than being spasmodic or cramping in nature.

- Often occurring up to 1 week before menstruation, the pain may get worse once bleeding starts.

- The pain may occur during sexual intercourse.
- Secondary dysmenorrhoea is more common in older women, especially in those who have had children.
- In pelvic infection, a vaginal discharge may be present in addition to pain.
- If, from questioning, the pharmacist suspects secondary dysmenorrhoea, the patient should be referred to her doctor for further investigation.

Endometriosis

- Endometriosis mainly occurs in women aged between 30 and 45 years, but can occur in women in their 20s.
- In endometriosis, pieces of endometrium are also found in places outside the uterus.
- These isolated pieces of endometrium may lie on the outside of the uterus or ovaries, or elsewhere in the pelvis.



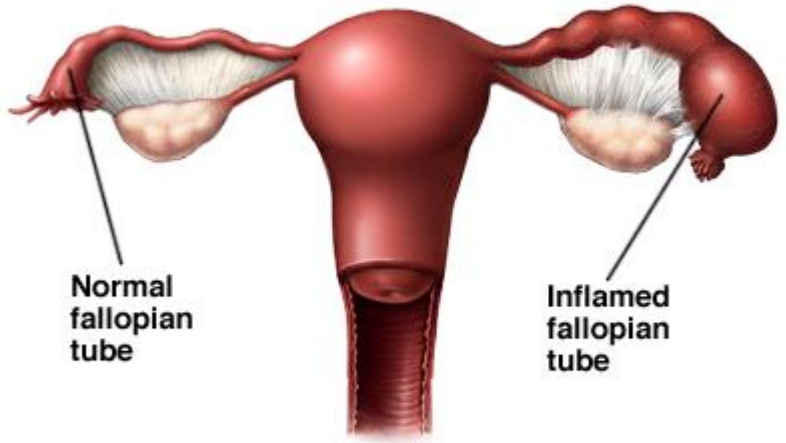
- Each section of endometrium is sensitive to hormonal changes occurring during the menstrual cycle and goes through the monthly changes of thickening, shedding and bleeding.

- This causes pain wherever the endometrial cells are found.

- The pain usually begins up to 1 week before menstruation and both lower abdominal and lower back pain may occur.

- The pain may also be non-cyclical and may occur with sexual intercourse (dyspareunia). Endometriosis may cause subfertility.

Pelvic inflammatory disease



- Pelvic infection can occur and may be acute or chronic in nature.
- It is important to know whether or not an intrauterine contraceptive device (coil) is used.
- The coil can cause increased discomfort and heavier periods, but also may predispose to infection.

- Acute pelvic infection occurs when a bacterial infection develops within the fallopian tubes.
- There is usually severe pain, fever and vaginal discharge.
- The pain is in the lower abdomen and may be unrelated to menstruation.
- It may be confused with appendicitis.

- Chronic PID may follow on from an acute infection.

- The pain tends to be less severe, associated with periods and may be experienced during intercourse.

Other symptoms

- Women who experience dysmenorrhoea will often describe other associated symptoms.
  - nausea,
  - vomiting,
  - general GI discomfort,
  - constipation,
  - headache, backache,
  - fatigue,
  - feeling faint and dizziness.

Premenstrual syndrome(PMS)

- a collection of symptoms, both physical and mental, whose incidence is related to the menstrual cycle.
- Symptoms are experienced cyclically, usually from 2 to 14 days before the start of menstruation.
- Relief from symptoms generally occurs once menstrual bleeding begins.
- The cyclical nature, timing and reduction in symptoms are all important in identifying PMS.
- Some women experience such severe symptoms that their working and home lives are affected.

- Sufferers often complain of a bloated abdomen, increase in weight, swelling of ankles and fingers, breast tenderness and headaches.

- Women who experience PMS describe a variety of mental symptoms that may include any or all of irritability, tension, depression, difficulty in concentrating and tiredness.

- Treatment of the symptoms of PMS is a matter for debate and there is a high placebo response to therapy of mood changes, breast discomfort and headaches when taken from 2 weeks before the period starts or throughout the cycle.

- There is some evidence that *pyridoxine* may reduce symptoms but the quality of clinical trials was poor and the evidence thus not definitive.

- The mechanism of action of *pyridoxine* in PMS is unknown.

- However, women should be advised to stick to the recommended dose; higher doses of *pyridoxine* are reported to have led to neuropathy.

- The *British National Formulary* states that ‘prolonged use of pyridoxine in a dose of 10 mg daily is considered safe but the long-term use of pyridoxine in a dose of 200 mg or more daily has been associated with neuropathy. The safety of long-term pyridoxine supplementation with doses above 10 mg daily has not been established’.

- *Evening primrose oil* has been used to treat breast tenderness associated with PMS. However, there are no good-quality trials to support its use and therefore is of unknown effectiveness.

- The mechanism of action of *evening primrose oil* in such cases is thought to be linked to effects on prostaglandins, particularly in increasing the level of prostaglandin E, which appears to be depleted in some women with PMS.

Medication

- The pain of dysmenorrhoea is thought to be linked to increased prostaglandin activity, and raised prostaglandin levels have been found in the menstrual fluids and circulating blood of women who suffer from dysmenorrhoea.

- Therefore, the use of analgesics that inhibit the synthesis of prostaglandins is logical.

- It is important, however, for the pharmacist to make sure that the patient is not already taking a non-steroidal anti-inflammatory drug (NSAID).

- Women taking oral contraceptives usually find that the symptoms of dysmenorrhoea are reduced or eliminated altogether and so any woman presenting with the symptoms of dysmenorrhoea and who is taking the pill is probably best referred to the doctor for further investigation.

When to refer

Presence of abnormal vaginal discharge

- Abnormal bleeding
- Symptoms suggest secondary dysmenorrhoea
- Severe intermenstrual pain (mittelschmerz) and bleeding
- Failure of medication
- Pain with a late period (possibility of an ectopic pregnancy)
- Presence of fever

Treatment timescale

- If the pain of primary dysmenorrhoea is not improved after two cycles of treatment, referral to the doctor would be advisable.

Management

- Simple explanation about why period pains occur, together with sympathy and reassurance, is important.

- Treatment with simple analgesics is often very effective in dysmenorrhoea.

NSAIDs (Ibuprofen, *diclofenac* and *naproxen)*

- NSAIDs can be considered the treatment of choice for dysmenorrhoea provided they are appropriate for the patient (i.e. the pharmacist has questioned the patient about previous use of *aspirin,* and history of GI problems and asthma).

- NSAIDs inhibit the synthesis of prostaglandins and thus have a rationale for use.

- Most trials have studied the use of NSAIDs at the onset of pain.
- One small study compared treatment started premenstrually against treatment from onset of pain: both strategies were equally effective.
- Sustained-release formulations of *ibuprofen* are also available.

- Diclofenac is contra-indicated in patients with cardiovascular disease.
- When responding to a request to buy OTC oral diclofenac or considering recommending it, pharmacists and their staff need to ask suitable questions to identify whether the patient has cardiovascular disease.
- *Naproxen* 250 mg tablets can be used by women aged between 15 and 50 years for primary dysmenorrhoea only.
- Two tablets are taken initially, then one tablet 6–8 h later if needed.
- Maximum daily dose is 750 mg and maximum treatment time is 3 days.

Contraindications

- Care should be taken when recommending NSAIDs which can cause GI irritation and should not be taken by anyone who has or has had a peptic ulcer.
- All patients should take NSAIDs with or after food to minimise GI problems
- NSAIDs should not be taken by anyone who is sensitive to *aspirin* and should be used with caution in anyone who is asthmatic, because such patients are more likely to be sensitive to NSAIDs.
- The pharmacist can check if a person with asthma has used an NSAID before. If they have done so without problems, they can continue.

Paracetamol

- *Paracetamol* has little or no effect on the levels of prostaglandins involved in pain and inflammation and so it is theoretically less effective for the treatment of dysmenorrhoea than either NSAIDs or *aspirin.*

- However, *paracetamol* is a useful treatment when the patient cannot take NSAIDs or *aspirin* because of stomach problems or potential sensitivity.

- *Paracetamol* is also useful when the patient is suffering with nausea and vomiting as well as pain, since it does not irritate the stomach.

Hyoscine

- *Hyoscine,* a smooth muscle relaxant, is marketed for the treatment of dysmenorrhoea on the theoretical basis that the antispasmodic action will reduce cramping.

- In fact, the dose is so low (0.1-mg *hyoscine)* that such an effect is unlikely.

- The anticholinergic effects of *hyoscine* mean that it is contraindicated in women with closed-angle glaucoma.

- Additive anticholinergic effects (dry mouth, constipation and blurred vision) mean that *hyoscine* is best avoided if any other drug with anticholinergic effects (e.g. tricyclic antidepressants) is being taken.

Caffeine

- There is some evidence (from a trial comparing combined *ibuprofen* and *caffeine* with *ibuprofen* alone and *caffeine* alone) that *caffeine* may enhance analgesic effect.

- OTC products contain 15–65 mg of *caffeine* per tablet.

- A similar effect could be achieved through drinking tea, coffee or cola.

- A cup of instant coffee usually contains about 80 mg of *caffeine*; a cup of freshly brewed coffee, about 130 mg; a cup of tea, 50 mg and a can of cola drink, about 40–60 mg.

Non-drug treatments

- A systematic review of evidence found that high-frequency transcutaneous electrical nerve stimulation (TENS) may be of benefit.
- Acupuncture may be helpful
- Locally applied low-level heat may also help pain r

- Fish oil (omega-3 fatty acids) compared with placebo in one study showed the use of additional pain relief to be significantly lower in the treatment group.

- *Pyridoxine* alone and combined with magnesium showed some benefit in reducing pain, compared with placebo.

Practical points

- **1** Exercise during menstruation is not harmful and may well be beneficial, since it raises endorphin levels, reducing pain and promoting a feeling of well-being. There is some evidence that moderate aerobic exercise can improve symptoms of PMS.

- **2** There is some evidence that a low-fat, high-carbohydrate diet reduces breast pain and tenderness.

- **3** Advice for women taking analgesics for dysmenorrhoea is as follows.

- (i) Take the first dose as soon as your pain begins or as soon as the bleeding starts, whichever comes first. Some doctors advise to start taking the tablets on the day before your period is due. This may prevent the pain from building up.

- (ii) Take the tablets regularly, for 2–3 days each period, rather than ‘now and then’ when pain builds up.

- (iii) Take a strong enough dose. If your pains are not eased, ask your doctor or pharmacist whether the dose that you are taking is the maximum allowed. An increase in dose may be all that you need.

- (iv) Side-effects are uncommon if you take an anti-inflammatory for just a few days at a time, during each period.

Case 1

- Linda Bailey is a young woman aged about 26 years, who asks your
- advice about painful periods. From your questioning, you find that
- Linda has lower abdominal pain and sometimes backache, which starts
- several days before her period begins. Her menstrual cycle used to be
- very regular, but now tends to vary; sometimes she has only 3 weeks
- between periods. The pain continues throughout menstruation and is
- quite severe. She has tried taking *aspirin,* which did not have much
- effect.

Case 2

- Jenny Simmonds is a young woman aged about 18 years who looks
- rather embarrassed and asks you what would be the best thing for
- period pains. Jenny tells you that she started her periods about 5 years ago and has never had any problem with period pains until recently.
- Her periods are regular – every 4 weeks. They have not become heavier,
- but she now gets pain, which starts a few hours before her period.
- The pain is usually gone by the end of the first day of menstruation
- and Jenny has never had any pain during other parts of the
- cycle. She says she has not tried any medicine yet, is not taking any
- medicines from the doctor and can normally take *aspirin* without any
- problems.