Clinical pharmacy I

Assist Lec. Zainab Abdul Hameed

Skin Conditions I

COLD SORES

Cold sores (herpes labialis) are caused by the herpes simplex virus (HSV). It is usually a painful, self-limiting infection of the lips, cheeks or nose or oropharyngeal mucosa (gingivostomatitis). The virus has two main subtypes. HSV type 1 is the cause of cold sores in more than 90% of cases. Rarely, infections may be caused by HSV type 2, which more commonly causes genital herpes infections.

What you need to know

- Age
- Duration
- Symptoms and appearance
  - Tingling
  - Pain
- Location (current and previous)
- Precipitating factors
  - Sunlight
  - Infection
  - Stress
- Previous history
- Medication

SIGNIFICANCE OF QUESTIONS AND ANSWERS

Age

Although the initial or 'primary' infection, which is usually subclinical and goes unnoticed, occurs in childhood, cold sores are most commonly seen in adolescents and young adults. Following the primary attack, the virus is not completely eradicated and virus particles lie dormant in nerve roots until they are reactivated at a later stage to cause 'secondary' symptoms. Although primary herpes infection is almost universal in childhood, not all those affected later experience cold sores, and the reason for this is not fully understood. Recurrent cold sores occur in up to 25% of all adults and the frequency declines with age, although cold sores can occur in patients of all ages. The incidence of cold sores is slightly higher in women than in men. Many children have minimal symptoms with their primary infection. In those with active primary herpes infection of childhood, the typical picture is of a febrile child with a painful ulcerated mouth and enlarged lymph nodes. The herpetic lesions last for 3–6 days and can involve

the outer skin surface as well as the inside of the mouth (gingivostomatitis). Such patients should be referred to the doctor.

Duration

The duration of the symptoms is important, as treatment with *aciclovir* (*acyclovir*) or *penciclovir* is of most value if started early in the course of the infection (during the prodromal phase). Usually the infection is resolved within 1–2 weeks. Any lesions that have persisted longer need medical referral.

Symptoms and appearance

The symptoms of discomfort, tingling or irritation (prodromal phase) may occur in the skin for 6–24 h before the appearance of the cold sore. The cold sore starts with the development of minute blisters on top of inflamed, red, raised skin. The blisters may be filled with white matter. They quickly break down to produce a raw area with exudation and crusting by about the fourth day after their appearance. By around 1 week, most lesions will have healed. Cold sores are extremely painful and this is one of the critical diagnostic factors.

Oral cancer can sometimes present a similar appearance to a cold sore. However, cancerous lesions are often painless, and their long duration differentiates them from cold sores. Another cause of a painless ulcer is that of a primary oral chancre of syphilis. Chancres normally occur in the genital area, but can be found on the lips. The incidence of syphilis has been increasing in the United Kingdom for several years. When a cold sore occurs for the first time, it can be confused with a small patch of impetigo. Impetigo is usually more widespread and has a honey-coloured crust. It tends to spread out to form further 'satellite' patches and does not necessarily
start close to the lips. It tends to affect children more than adults (see the section on Impetigo in Chapter 10 – Childhood Conditions). If there is doubt about the cause of the symptoms, the patient should be referred.

Location

Cold sores occur most often on the lips or face. Lesions inside the mouth or close to or affecting the eye need medical referral.

Precipitating factors

Most people with recurrent cold sores recognise things that trigger it off. Cold sores can be precipitated by sunlight, wind, fever (during infections, such as colds and flu) and menstruation, being rundown and local trauma to the skin. Physical and emotional stress can also be triggers. While it is often not possible to avoid these factors completely, advising the patient on potential triggers may be helpful for the sufferer.

Previous history

The fact that the cold sore is recurrent is helpful diagnostically. If a sore keeps on returning in the same place in a similar way, then it is likely to be a cold sore. Most sufferers experience one to three attacks each year. Cold sores occur throughout the year, with a slightly increased incidence during the winter months. Information about the frequency and severity of the cold sore is helpful when

recommending referral to the doctor, although the condition can usually be treated by the pharmacist. In patients with atopic eczema, herpes infections can become severe and widespread as the virus spreads in affected skin. This can be severe and life threatening. If this is suspected, such patients must be referred to their doctor. Immunocompromised
patients, for example, those undergoing cytotoxic chemotherapy or with HIV, are also at risk of serious infection and should always be referred to the GP surgery. Patients who are pregnant, particularly near term, should be advised to see the doctor or midwife.

Medication

It is helpful to enquire what creams and lotions have been used so far, what was used in previous episodes and what, if anything, helped last time. As stated before, patients on chemotherapy for cancer, or drugs for HIV, should be advised to seek a medical opinion. This also applies to people on oral corticosteroids, as they may be susceptible to more severe infection.

When to refer:

- Babies
- Failure of an established sore to resolve
- Severe or worsening sore
- History of frequent cold sores
- Sore lasting longer than 2 weeks
- Painless sore
- Patients with atopic eczema
- Eye affected
- Uncertain diagnosis
- Immunocompromised patient
- pregnancy

MANAGEMENT

Aciclovir and penciclovir

Aciclovir cream and *penciclovir creams* are antivirals that reduce time to healing by 0.5–1 day and reduce pain experienced from the lesion. Treatment should be started as soon as symptoms are felt and before the lesion appears. Once the lesion has appeared, evidence of effectiveness is less convincing. The treatments can therefore be helpful for patients who suffer repeated attacks and know when a cold sore is going to appear. They can be advised to use treatment as soon as they feel the tingling or itching that precedes the appearance of a cold sore.

Aciclovir cream can be used by adults and children and should be applied four hourly during waking hours (approximately five times a day) to the affected area for 5 days. If healing is not complete, treatment can be continued for up to 5 more

days, after which medical advice should be sought if the cold sore has not resolved.
Penciclovir cream can be used by those aged 12 years and over and is applied two hourly during waking hours (approximately eight times a day) for 4 days. Some patients experience a transient stinging or burning sensation after applying the cream. The affected skin may become dry and flaky. If there is a poor response, the patient should seek advice. Patients with severe infection, or who are immunocompromised, are usually
prescribed oral antiviral therapy by a doctor. Some patients who get frequent, severe cold sores either take oral antivirals long term (prophylaxis) or are given a supply to start at the onset of symptoms.

Analgesia and bland creams

Paracetamol or *ibuprofen* may help with discomfort and pain. Keeping the cold sore moist (e.g. with lip balm or *white soft paraffin*) will prevent the drying and cracking, which can predispose to secondary bacterial infection. For the patient who suffers only an occasional cold sore, a simple cream, perhaps containing an antiseptic agent, can help to reduce discomfort.

Hydrocolloid gel patch

The patch is applied as soon as symptoms start and replaced as needed. The hydrocolloid is used for its wound-healing properties. There is limited evidence of efficacy in cold sores.

Complementary therapies

Balm mint extract and tea tree oil applied topically may have an effect on pain, dryness and itching, but there is insufficient evidence to assess whether they have an effect on healing, time to crusting, severity of an attack or rate of recurrence. Low-energy, non-thermal, narrow-waveband light within the infrared spectrum may have an effect on cold sores, although there is insufficient evidence that they are effective.

PRACTICAL POINTS

Preventing cross infection

HSV type 1 is contagious and transmitted by direct contact, so advise the patients to wash their hands before and after applying treatment to the cold sore. To avoid transmission to the eyes, people who use contact lenses should take particular care so as to that lenses are not contaminated, and care in applying eye make-up is also important. It is sensible not to share cutlery, towels, toothbrushes or face flannels or to kiss people until the cold sore has cleared up. Oral sex with someone who has a cold sore means a risk of genital herpes and should be avoided until the cold sore has gone. This latter advice can be imparted via a PIL.

Use of sunscreens

Sunscreen creams (with sun protection factor [SPF] 15 or above) applied to and around the lips when patients are subject to increased sun exposure (e.g. during skiing and beach holidays) can be a useful preventive measure if the patient recognises sunlight as a trigger.

Stress

Sources of stress could be looked at to see if changes are possible.

Eczema herpeticum

Patients with atopic eczema are very susceptible to herpetic infection and show an abnormal response to the virus with widespread lesions and sometimes involvement of the central nervous system. Patients with severe
eczema should avoid contact with anyone who has an active cold sore. If this severe infection is suspected, immediate referral to the doctor or out-of- hours service is required.

SUNBURN

Pharmacists frequently see patients asking for advice on managing sunburn. This is usually something that can be readily managed by using treatments to reduce symptoms while the condition heals, and with general advice. Some cases where there is swollen skin or blistering or broken skin should be referred to the GP surgery or out-of- hours service – practice nurses have a lot of experience in dressing and managing these. All babies and small children with significant sunburn should also be referred. It is also important to be aware of the signs of severe sunburn and the symptoms of heatstroke that may require more urgent referral to accident and emergency (A&E) – see Box 4.1. Treatment in hospital may occasionally be needed for people with severe burns; this is usually with burn creams and special burn dressings.

Box 4.1 Signs and symptoms of sunburn and heatstroke requiring urgent referral

Signs of severe sunburn	Symptoms/signs of heat exhaustion or heatstroke Call 999 if persist after 30 min of resting in a cool place and taking fluids	Symptoms/signs of severe heat exhaustion or heatstroke Call 999
Extensive skin blistering	High body temperature (>38 °C)	Very high body temperature (>40 °C)
Extensive skin swelling – oedema	Fatigue, weakness, dizziness, feeling faint, headache	Not sweating even while feeling too hot
Skin loss – partial or full thickness	Nausea or vomiting	Fast breathing or shortness of breath
Often associated with systemic symptoms – heat exhaustion/sunstroke	Rapid pulse	Rapid pulse
	Cramps in the arms, legs or stomach	A fit (seizure)
	Confusion	Altered behaviour – irritability, agitation, impaired judgement, confusion, disorientation, hallucinations
		Loss of consciousness

General advice for mild-to- moderate sunburn

Mild-to- moderate sunburn usually takes the form of erythema (redness) of the skin, which is tender and blanches on pressure. It is sore and may be very painful. There may be one or two small areas (a few centimetres across) of swelling with some blistering. The erythema usually occurs 2–6 h after sun exposure and peaks at 12–24 h. It resolves over 4–7 days, usually with skin scaling and peeling.

To help relieve the acute symptoms:

- Cool the skin by having a cold bath or shower, sponging it with cold water or holding a cold flannel to it
- Use after sun lotions or emollients (such as those containing aloe vera) to soothe and moisturise the skin
- Drink plenty of fluids to cool you down and prevent dehydration
- Take oral painkillers, such as *ibuprofen* or *paracetamol*, to relieve pain (do not give *aspirin* to children under 16)

Avoid sunlight, including through windows, and cover up the affected areas of skin until it is healed. *Ibuprofen* 1% with *isopropyl myristate* 10% emulsion is an OTC option available on the general sales list (GSL) for topical pain relief of mild-to- moderate sunburn, which also acts as an emollient. It is not suitable for children under the age of 12 years, or for pregnant or breastfeeding women. It is not a sunscreen/ sunblock. It is lightly applied to the affected skin and is massaged gently in. It can be applied every 2 h (no more than eight times a day). No more than 12 ml should be applied at a time, or more than 100 ml in a day. It should be used for a maximum of 2–3 days. A drawback is that it should not be used at the same time as oral *ibuprofen*.

Advice for heat exhaustion or heatstroke

Many patients will get better with four simple first-aid measures:

1. Move to a cool place.
2. Lie down and raise their feet slightly.
3. Drink plenty of water, or sports or rehydration drinks.
4. Cool the skin – spray or sponge with cool water and use a fan. Cold packs around the armpits or neck are good, too. Do not put ice or cold packs directly on sunburn. If the patient does not respond to these measures in 30 min, then urgent medical help should be obtained.

WARTS AND VERRUCAE

Cutaneous warts are small, rough growths that are caused by infection of skin cells with certain strains of the human papillomavirus (HPV). They can appear anywhere on the skin, but are most commonly seen on the hands and feet. A verruca (also known as a plantar wart) is a wart on the sole of the foot. They have a high

incidence in children. Once immunity to the infecting virus is sufficiently high, the lesions will disappear, but many patients and parents prefer active treatment. Preparations are available OTC, and correct use is required to break down hard skin while preventing damage to healthy surrounding skin.

What you need to know

Age
Adult or child
Appearance and number of lesions
Location
Duration and history
Medication

SIGNIFICANCE OF QUESTIONS AND ANSWERS

Age

Warts can occur in children and adults; they are more common in children, and the peak incidence is found between the ages of 12 and 16 years. The peak incidence is thought to be due to higher exposure to the virus in schools and sports facilities. Warts and verrucae are caused by the same virus, but the appearance of the infection is altered by the location.

Appearance

Warts appear as raised fleshy lesions on the skin with a roughened surface (Figure 4.11); the most common type is said to resemble a cauliflower. The appearance can vary, mostly related to where they occur on the body. Verrucae occur on the weight-bearing areas of the sole and heel and have a different appearance from warts because the pressure from the body's weight pushes the lesion inwards, sometimes producing pain when weight is applied during walking. Warts have a network of capillaries, and, if pared, thrombosed, blackened capillaries or bleeding points will be seen. The presence of these capillaries provides a useful distinguishing feature between calluses and verrucae on the feet: if a corn or callus is pared, only layers of white keratin will be present. The thrombosed capillaries are sometimes thought, incorrectly, to be the root of the verruca by the patient. The pharmacist can correct this misconception when explaining the purpose and method of treatment (discussed in the following text).

FIGURE 4.11 Typical appearance of common warts on the fingers.

Multiple warts

Warts may occur singly or as several lesions. If they are multiple, they can be quite unsightly and cause distress. Molluscum contagiosum is a condition in which the lesions may resemble warts, but another type of virus is the cause (a poxvirus). They are mostly seen in infants and preschool children. The lesions are pinkish or pearly white papules with a central dimple and are up to 5 mm in diameter (see Figure 4.12). They are said to resemble small sea shells stuck on the skin, and the infection easily passes from child to child – contagious (hence the name). The location of molluscum tends to differ from that of warts – the eyelids, face, armpits and trunk may be involved. The lesions are harmless and usually resolve in a few months without scarring. They are best left untreated, but if parents are concerned, they should be referred to the GP surgery for reassurance (and to be dissuaded from treatment). Very rarely molluscum can be a severe problem in people with HIV or who are immunosuppressed.

Location

The palms or backs of the hands are common sites for warts, as is the area around the fingernails. People who bite or pick their nails are more susceptible to warts around them, as this causes inoculation of the skin with the virus. Warts sometimes occur on the face and referral to the doctor is the best option in such cases. Since
treatment with OTC products is destructive in nature, self-treatment of facial warts can lead to scarring and should never be attempted. Parts of the skin that are subject to regular trauma or friction are more likely to be affected, since damage to the skin facilitates entry of the virus. Verrucae on the sole of the foot may be present singly or as several lesions. Sometime pain on bearing weight draws attention to the lesion.

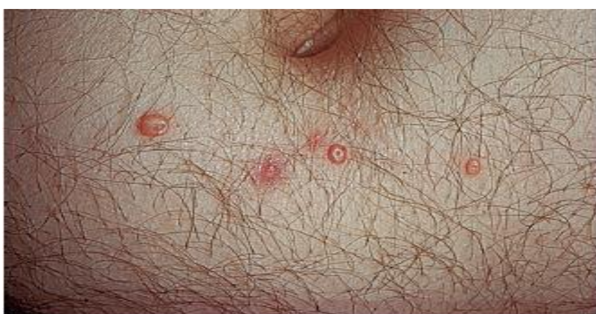

FIGURE 4.12 An umbilicus surrounded by umbilicated papules of molluscum contagiosum.

Anogenital

Anogenital warts are caused by a different type of HPV and require medical referral for examination, diagnosis and treatment. They are sexually transmitted and patients can self-refer to their local sexual health clinic. Anogenital warts in

children raise concerns about sexual abuse and all cases must be referred to the GP surgery.

Duration and history

It is known that most warts will disappear spontaneously within a period of 6 months to 2 years. The younger the patient, the more quickly the lesions are likely to remit, as immunity to the virus develops more rapidly.

Any unusual change in the appearance of a wart should be treated with suspicion and referral to the doctor is advised. Skin cancers are sometimes mistakenly thought to be warts by patients, and the pharmacist can establish how long the lesion has been present and any changes that have occurred. Signs related to skin cancer are described in the section 'Practical points' in the following text.

Medication

People with diabetes should not use OTC products to treat warts or verrucae without advice from a nurse or doctor, since impaired circulation, if present, can lead to delayed healing, ulceration or even gangrene. Also, peripheral neuropathy, a complication of diabetes, may mean that even extensive damage to the skin will not provoke a sensation of pain. Warts can be a major problem if the immune system is suppressed by either disease (e.g. HIV infection and lymphoma) or drugs (e.g. *ciclosporin* to prevent rejection of a transplant).

The pharmacist should ask whether any treatment has been attempted already and, if so, its identity and the method of use. A common problem is that treatments are not used for a sufficiently long period of time because patients tend to expect a fast cure.

When to refer:

- Changed appearance of lesions: size and colour
- Bleeding
- Itching
- Genital warts
- Facial warts
- Immunocompromised patients

Treatment timescale

Treatment with OTC preparations should produce a successful outcome within 3 months; if not, referral to the GP surgery (or podiatrist/ chiropodists for verrucae) may be necessary.

MANAGEMENT

Many warts can be simply left alone and go away without treatment. If a patient is distressed or embarrassed by the appearance of a wart or is getting pain from a verruca, it is reasonable to attempt treatment. Many patients wish to try OTC treatments; *salicylic acid* and *cryotherapy* are available. Treatment of warts and verrucae aims to reduce the size of the lesion by gradual destruction of the skin. Continuous application of the selected preparation for several weeks or months may be needed, and it is important to explain this to the patient. Surrounding healthy skin may need to be protected during treatment (see the section 'Practical points' in the following text). OTC wart products should not be used on the face, on skinfolds (such as the groin or axillae), on moles or birthmarks, or lesions with red edges, or an unusual colour. They must not be used on open wounds, on irritated or reddened skin or any area that appears to be infected.

Salicylic acid

Salicylic acid softens and destroys the lesion by chemically burning it, thus mechanically removing affected tissue. Preparations are available in a variety of strengths and formulations, including gels, plasters and paints. *Lactic acid* is included in some preparations with the aim of enhancing availability of the *salicylic acid*. Preparations should be kept well away from the eyes and applied with an applicator, not with the fingers.

Cryotherapy

Dimethyl ether and *propane* can be used to freeze warts and are available in several preparations for home use for adults and children. The minimum age for use is 4 years for most preparations. There is little evidence from which to judge their effectiveness in home use rather than when applied by a doctor. The treatment should not be used by people with diabetes or by pregnant women. These should not be used on warts that are adjacent to finger nails (periungual). The wart should fall off about 10 days after application. A second application can be made 14 days after the first if needed.

PRACTICAL POINTS

Application of treatments

Treatments containing *salicylic acid* should be applied once a day, usually at night. The treatment is helped by prior soaking of the affected hand or foot in warm water for 5–10 min to soften and hydrate the skin, increasing the action of the *salicylic acid*. The main reason for using it on a verruca is to soften and remove the hard overgrowth of keratin that causes symptoms by digging into the foot when bearing weight. Removal of the dead skin from the surface of the wart by gentle rubbing with a pumice stone or emery board after it has been applied helps to achieve this and also helps the next application work on the layer underneath. Occlusion of the wart using an adhesive plaster helps to keep the skin soft, maximising the effectiveness of *salicylic acid*.

The main risk with *salicylic acid* preparations is in causing chemical burns and irritation of the unaffected skin. Protection of the healthy surrounding skin can be achieved by applying a layer of petroleum jelly.
Podiatrists (chiropodists) frequently see patients with verrucae and can give advice to patients and provide treatment, if indicated.
Length of treatment required
Continuous treatment with *salicylic acid* is usually needed for up to 3 months for both warts and verrucae. Patients need to know not to expect instant or rapid success. An invitation to come back and report progress can help the pharmacist monitor the treatment. The patient can easily take a digital photo to monitor progress, if they wish. If treatment has not been successful after 3 months and the wart is causing symptoms or upset, referral for consideration of removal using cautery, curetting or liquid nitrogen may be required. Some podiatrists/chiropodists provide these treatments for verrucae, but the patient may have to pay. Not all GP surgeries will treat warts or provide cryotherapy.
Verrucae and swimming pools
Viruses can penetrate moist skin more easily than dry skin. Theoretically, walking barefoot on abrasive surfaces beside swimming pools or in changing areas can lead to infected material from the verruca being rubbed into the flooring. The Amateur Swimming Association gives guidance regarding this at www.swimming.org/ learntoswim/swimming-and- verrucas-the-facts. They advise against the use of plastic socks and say the use of a waterproof plaster is sufficient to cover the verruca during swimming. Flip flops or other appropriate footwear should be worn in communal showers.

Warts and skin cancer

Premalignant and malignant lesions can sometimes be thought to be warts by the patient. There are different types of skin cancer. All cases of suspected cancer should be referred to the GP surgery. They can be divided into two categories: non-pigmented (i.e. skin-coloured) and pigmented (i.e. darker than normal skin colour).
Non-pigmented:
In this group, which is more likely to occur in the elderly, the signs might include a persisting small ulcer or sore that slowly enlarges but never seems to heal. Sometimes a crust forms, but when it falls off, the lesion is still present. The main type, squamous cell carcinoma, usually appears on the head and neck or the back of the hand, and is related to long-term sun damage. In the case of a basal cell carcinoma (rodent ulcer), the lesion typically starts off as a nodule that ulcerates and then has a circular, raised and rolled edge.
Pigmented: Pigmented lesions or moles can turn malignant. These can occur in patients of a much younger age than the first group. They can be difficult to differentiate from benign moles, which are common. A National Institute for Health and Care Excellence (NICE) guideline (NG12, 2015) – *Suspected cancer:*

recognition and referral – gives guidance on the nature or appearance of pigmented skin lesions that warrant referral for further urgent investigation using a seven-point checklist score of three or more.

Major features of the lesions (scoring two points each) are:
Change in size
Irregular shape
Irregular colour

Minor features of the lesions (scoring one point each) are:
Largest diameter 7 mm or more
Inflammation
Oozing
Change in sensation

Another useful way to recall 'danger signs' is using the mnemonic ABCDE:
A: Asymmetrical moles – irregular in shape
B: Border of a mole – blurred or has jagged edges
C: Colour of a mole – if a mole has more than one colour
D: Diameter (width) – irregular moles are usually larger than 7 mm
E: Evolving – melanoma moles often change (evolve)

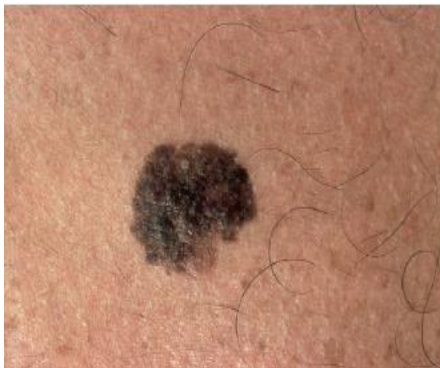

FIGURE 4.13 Malignant melanoma.

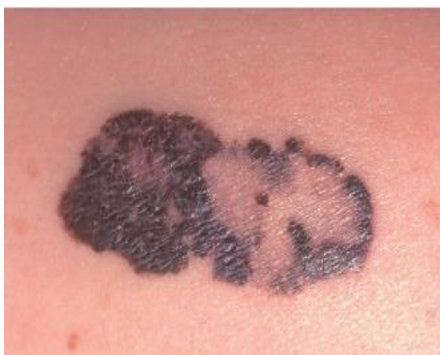

FIGURE 4.14 Superficial spreading melanoma

SCABIES

Scabies is an intensely itchy skin infestation caused by the human parasite *Sarcoptes scabiei* and is more common during the winter months. The itch can be severe, particularly at night, and scratching can lead to changes in the appearance of the skin, so a careful history is needed. Scabies goes through peaks and troughs of prevalence, with a peak occurring every 15–20 years, and pharmacists need to be aware when a peak is occurring.

What you need to know

Age
Infant, child or adult
Symptoms
Itching, rash
Presence of burrows
History
Signs of infection
Medication

SIGNIFICANCE OF QUESTIONS AND ANSWERS

Age

Scabies infestation can occur at any age from infancy onwards; it is most common between ages 10 and 19 and more often found in women than men. Recently, scabies has become more frequent in the elderly in residential and nursing-home environments. Refer infants and young children to the doctor if scabies is suspected. If a school or nursing-home outbreak is suspected, the pharmacist should inform local GP surgeries or the public health/health protection department.

Symptoms

The scabies mite burrows down into the skin and lives under the surface, and a typical infestation involves 10–20 mites. Their presence sets up an allergic reaction, thought to be due to the insect's coat and exudates, resulting in intense itching. A characteristic feature of scabies is that itching is worse at night and can lead to loss of sleep. Burrows can sometimes be seen as small threadlike grey lines. The lines are raised, wavy and about 5–10 mm long. Commonly infested sites include the web space of the fingers and toes, wrists, armpits, around nipples, buttocks and the genital area. The presence of itchy papules and nodules on the penis and scrotum is usually indicative of sexually acquired scabies. Patients may have a rash that does not always correspond to the areas of infestation. The rash may be patchy and diffuse or dense and erythematous. It is more commonly found around the midriff, underarms, buttocks, inside the thighs and around the ankles.

In adults, scabies rarely affects the scalp and face, but in children aged 2 years or under and in the elderly, involvement of the head is more common, especially in the area behind the ear (postauricular fold).

Burrows may be indistinct or may have been disguised by scratching that has broken and excoriated the skin. Scabies can mimic other skin conditions and may not present with the classic features. The itch tends to be generalised rather than in specific areas. In immunocompromised or debilitated patients, and in the elderly,
scabies presents differently. The affected skin can become thickened and crusted and resembles psoriasis; this is called crusted or Norwegian scabies. It is a 'hyperinfestation' with millions of mites, thought to be due to the poor immune response. Mites survive under the crust and any sections that become dislodged are infectious to others because of the many living creatures they contain.

History

The itch of scabies can take several (6–8) weeks to develop in someone who has not been infested previously. The scabies mite is transmitted by close personal contact, so patients can be asked whether anyone else they know is affected by the same symptoms, for example, other family members, boyfriends and girlfriends.

If the scabies has been caught from a sexual contact, or this is suspected because of genital lesions, it is usually advisable for the person to be directed to a sexual health clinic for treatment so that other sexually transmitted diseases can be excluded.

Signs of infection

Scratching can lead to excoriation, so secondary infections, such as impetigo, can occur. The presence of a weeping yellow discharge or yellow crusts would be indications for referral to the GP surgery for treatment.

Medication

It is important for the pharmacist to establish whether any treatment has been tried already and, if so, its identity. The patient should be asked about how any treatment has been used, since incorrect use can result in treatment failure. The itch of scabies may continue for several days or even weeks after successful treatment, so the fact that itching has not subsided does not necessarily mean that treatment has been unsuccessful.

When to refer

- Babies and young children
- Crusted scabies
- Scabies outbreak in institutions (school, nursing homes)
- Acquired through sexual contact
- Infected skin
- Treatment failure
- Unclear diagnosis

MANAGEMENT

There is evidence from a systematic review of clinical trials of scabies treatments that *permethrin* is highly effective. The evidence for *malathion* is less robust. *Permethrin*
cream is used first line and *malathion* can be used where *permethrin* is not suitable.

The treatments are applied to the entire body, including the neck, face, scalp and ears in adults. Particular attention should be paid to the webs of fingers, toes and soles of the feet and under the ends of the fingernails and toenails. *Permethrin* is usually applied in the evening and left on overnight (*malathion* is left on for 24 h). Two treatments are recommended, 7 days apart. Treat all members of the household, close contacts and sexual contacts with the topical insecticide/acaricide (even in the absence of symptoms). Machine-wash (at 60 °C or above) all clothes, towels and bed linen on the day of application of the first treatment.

Permethrin

The cream formulation is used in the treatment of scabies. For a single application in an adult, 30–60 g of cream (one to two 30-g tubes) is needed. The cream is applied to the whole body and left on for 8–12 h before being washed off. If the hands are washed with soap and water within 8 h of application, cream should be reapplied to the hands. Medical supervision is required for its use in children under 2 years and in elderly patients (aged 70 years and over). *Permethrin* can itself cause itching and reddening of the skin. Patients who are allergic to chrysanthemum plants may be allergic to *permethrin* and *malathion* should be used.

Malathion

Malathion is effective for the treatment of scabies and pediculosis (head lice). For one application in an adult, 100 ml of lotion should be sufficient. The aqueous lotion should be used in scabies. The lotion is applied to the whole body. It can be poured into a bowl and then applied on cool, dry skin using a clean, broad

paintbrush or cotton wool. The lotion should be left on for 24 h, without bathing, after which it is washed off. If the hands are washed with soap and water during the 24 h, *malathion* should be reapplied to the hands. Skin irritation may sometimes occur. Medical supervision is needed for children under 6 months of age.

PRACTICAL POINTS

1. The itch will continue and may become worse in the first few days after treatment. The reason for this is thought to be the release of allergen from dead mites. Patients need to be told that the itch will not stop straight away after treatment. *Crotamiton* cream or lotion can be used to relieve the symptoms, provided the skin is not badly excoriated. A sedating oral antihistamine may be considered if the itch is severe. Itching generally subsides by about 2 weeks after successful treatment, and if it continues for longer than 2–4 weeks, referral may be needed.
2. In the past, treatment was applied after a hot bath. This is not necessary and there is even evidence that a hot bath may increase absorption into the blood, removing treatment from its site of action on the skin. The treatment should be applied to cool, dry skin immediately before bedtime and allowing time for the cream to be absorbed or the lotion to dry. Because the hands are likely to be affected by scabies, it is important not to wash the hands after application of the treatment and to reapply the preparation if the hands are washed within the treatment period.
3. All members of the family or household should be treated, preferably on the same day, whether they have symptoms or not. Because the itch of scabies may take up to 8 weeks to develop, people may be infested but symptomless. The incubation period of the scabies mite is 3 weeks, so reinfestation may occur from other family or household members.
4. The scabies mite can live only for around 1 day after leaving its host and transmission is almost always caused by close personal contact. However, it is possible that reinfestation could occur from bedclothes or clothing and this can be prevented by washing them at a minimum temperature of 60 °C after the first treatment.

Fleas

Another cause of possible infestation is fleas from pets. Patients may present with small, reddened swellings, often on the lower legs and around the ankles where the flea jumps on, usually from the floor or carpets. Questioning may reveal that a pet cat or dog has recently been acquired or that a pet has not been treated with insecticide for some time. Regular checks of pets for fleas and use of insecticides will prevent the problem occurring in the future. A range of proprietary products is available to treat either the pet or bedding and carpets. Vets can give useful advice on fleas in the house and on pets. A second treatment should be applied 2 weeks

after the first to eradicate any fleas that have hatched since the first application. The itch of flea bites can be treated with *topical hydrocortisone* in people over 10 years. Alternatively, an antipruritic, such as *crotamiton* (with or without *hydrocortisone*) or *calamine* cream, can be recommended.

DANDRUFF

Dandruff is a chronic relapsing condition of the scalp, which responds to treatment, but often returns when treatment is stopped. The condition usually appears during puberty and reaches a peak in early adulthood. Dandruff has been estimated to affect one in two people aged between 20 and 30 years and up to four in ten of those aged between 30 and 40 years. It is considered to be a mild form of seborrhoeic dermatitis, associated with an overgrowth of *Malassezia* yeasts. Diagnosis is usually straightforward and effective treatments are available OTC.

What you need to know

Appearance
Presence of scales
Colour and texture of scales
Location: scalp, eyebrows, paranasal clefts and others
Severity
Previous history
Psoriasis
Seborrhoeic dermatitis
Aggravating factors
Medication

SIGNIFICANCE OF QUESTIONS AND ANSWERS

Appearance

Dandruff is characterised by greyish-white flakes or scales on the scalp and an itchy scalp as a result of excessive scaling. It may also affect beards. In dandruff, the epidermal cell turnover is at twice the rate of those without the condition. A differential diagnosis for severe dandruff could be psoriasis where there is also rapid cell turnover. In the latter condition, both the appearance and the location are usually different. In more severe cases of seborrhoeic dermatitis, the scales are yellowish and greasy-looking, and there is usually some inflammation with reddening and crusting of the affected skin (Figure 4.15). In psoriasis, the scales are silvery white and associated with red, patchy plaques and inflammation (Figure 4.16).

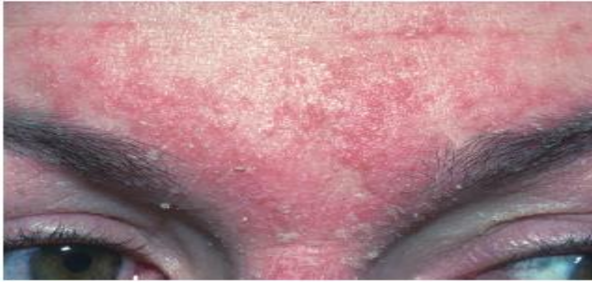

FIGURE 4.15 Seborrhoeic dermatitis.

Location

In dandruff, the scalp (and sometimes beard) is the only area affected. More widespread seborrhoeic dermatitis affects the areas where there is greatest sebaceous gland activity, so it can affect eyebrows, eyelashes, beard and moustache, paranasal clefts, behind the ears, nape of neck, forehead and chest. In infants seborrhoeic dermatitis is common and occurs as cradle cap, appearing in the first 12 weeks of life.

Psoriasis can affect the scalp, but other areas are also usually involved. The knees and elbows are common sites, but the face is rarely affected. This latter point distinguishes psoriasis from seborrhoeic dermatitis, where the face is often affected. Another condition that may look similar to dandruff is dermatitis of the scalp caused by things such as allergy to a shampoo constituent or to hair dye.

Severity

Dandruff is generally a mild condition. However, the itching scalp may lead to scratching, which may break the skin, causing soreness and the possibility of infection. If the scalp is very sore or there are signs of infection (crusting or weeping), referral would be indicated.

Previous history

Since dandruff is a chronic relapsing condition, there will usually be a previous history of fluctuating symptoms. There is a seasonal variation in symptoms, which generally improve in summer in response to ultraviolet B (UVB) light. *Malassezia* yeasts are unaffected by ultraviolet A (UVA) light.

Aggravating factors

Hair dyes and perms can irritate the scalp. Inadequate rinsing after shampooing the hair can leave traces of shampoo, causing irritation and itching.

Medication

Various treatments may already have been tried. It is important to identify what has been tried and how it was used. Most dandruff treatments need to be applied to the scalp and be left for 5 min for full effect. However, if an appropriate treatment has been correctly used with no improvement, referral should be considered.

When to refer

- Suspected psoriasis
- Severe cases: seborrhoeic dermatitis
- Signs of infection
- Unresponsive to appropriate treatment

Treatment timescale

Dandruff should start to improve within 1-2 weeks of beginning treatment

MANAGEMENT

The aim of the treatment is to reduce the level of *Malassezia* yeasts on the scalp; therefore, agents with antifungal action are effective. *Ketoconazole*, *selenium sulphide*, *zinc pyrithione* and *coal tar* are all effective. The results from studies on seborrhoeic dermatitis suggest that *ketoconazole* is the most effective and *coal tar* is the least effective of these choices. Most treatments need to be left on the scalp (and beard where relevant) for 5 min for full effect (see instructions with individual products).

Ketoconazole

Ketoconazole 2% shampoo is used twice a week for 2–4 weeks, after which usage should reduce to weekly or fortnightly as needed to prevent recurrence. It is considered first line in moderate-to- severe dandruff.

The shampoo can also be used for other areas affected by seborrhoeic dermatitis. While shampooing, the lather can be applied to the other affected areas and left before rinsing.

Ketoconazole is not absorbed through the scalp and side effects are extremely rare. There have been occasional reports of allergic reactions.

Zinc pyrithione

Zinc pyrithione is an active ingredient in several 'antidandruff shampoos' and is effective against dandruff. It should be used twice weekly for the first 2 weeks and then once weekly as required.

Selenium sulphide 2.5%

Selenium sulphide has been shown to be effective. Twice-weekly use for the first 2 weeks is followed by weekly use for the next 2 weeks; then it can be used as needed. It is advised to massage it into the scalp and leave on for 2–3 min. It can cause a burning sensation (and rarely, blistering) if left on for longer. Jewellery should be removed, as this can be discoloured by selenium. The hair and scalp should be thoroughly rinsed after using *selenium sulphide* shampoo; otherwise,

discolouration of blond, grey or dyed hair can result. Products containing *selenium sulphide* should not be used within 48 h of colouring or perming the hair. Contact dermatitis has occasionally been reported. *Selenium sulphide* should not be applied to inflamed or broken skin.

Coal tar

Findings from research studies indicate that *coal tar* is the least effective of the agents for seborrhoeic dermatitis. It may be useful in dandruff, which is a less severe condition, and individual response and preference may determine if patients choose to use it. Modern formulations are more pleasant than the traditional ones, but some people still find the smell of *coal tar* unacceptable. *Coal tar* can cause skin sensitisation and is a photosensitiser.

PRACTICAL POINTS

Continuing treatment

Patients need to understand that the treatment is unlikely to cure their dandruff permanently and that it will be sensible to use the treatment on an intermittent basis in the longer term to prevent their dandruff from coming back.

Treating the scalp

It is the scalp that needs to be treated rather than the hair. The treatment should be applied to the scalp and massaged gently. Simple measures, such as softening of scales with emollient, gentle brushing to loosen scales and washing of the scalp with baby shampoo, may also help.

Standard shampoos

There is debate among experts as to whether dandruff is caused or aggravated by infrequent hair-washing. However, it is generally agreed that frequent washing (at least three times a week) is an important part of managing dandruff. Between applications of their treatment, the patients can continue to use their normal shampoo. Some may wish to wash their hair with their normal shampoo before using the dandruff-treatment shampoo.

Hair products

Gel, mousse and hairspray can still be used and will not adversely affect treatment for dandruff.

PSORIASIS

Psoriasis is a chronic inflammatory disease with predominantly skin manifestations. It is characterised by scaly skin lesions, which can be in the form of patches, papules or plaques. Arthritis is also sometimes seen with the disease and may be under-recognised. Itch is often a feature. Psoriasis occurs worldwide with variation in incidence between different ethnic groups. The incidence for White Europeans is about 2%. Although there is a genetic influence, environmental factors are also thought to be important. People with psoriasis usually present to the doctor rather than the pharmacist. At the time of first presentation, the doctor is the most appropriate first line of help, and pharmacists

should always refer cases of suspected but undiagnosed psoriasis or suspected related arthritis. The diagnosis is not always easy and needs confirming. In the situation of a confirmed diagnosis in a relatively chronic situation, the pharmacist can offer continuation of the treatment where products are available OTC. Many patients learn to manage their psoriasis themselves, but will seek help from time to time. In this situation, continued support and monitoring by the pharmacist are reasonable, with referral back to the doctor or specialist nurse when there is an exacerbation, or for periodic review. Jointly agreed guidelines between pharmacist and doctors are valuable here.

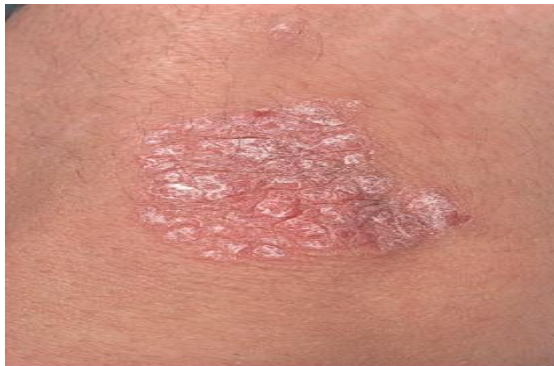

FIGURE 4.16 Typical ‘plaque’ appearance of psoriasis vulgaris.

What you need to know

- ✓ Appearance
- ✓ Psychological factors
- ✓ Diagnosis
- ✓ Arthritis
- ✓ Medication

SIGNIFICANCE OF QUESTIONS AND ANSWERS

Appearance

In its most common form, there are raised, large, red, scaly plaques over the extensor surfaces of the elbow and knee (Figure 4.16). Silvery scales usually cover the plaques. The plaques are usually symmetrical, and sometimes there is a patch present over the lower back area. The scalp is often involved (see Figure 4.17). Psoriasis can affect the soles of the feet and the palms of the hand. Nail changes with pitting and lifting are also frequently seen.

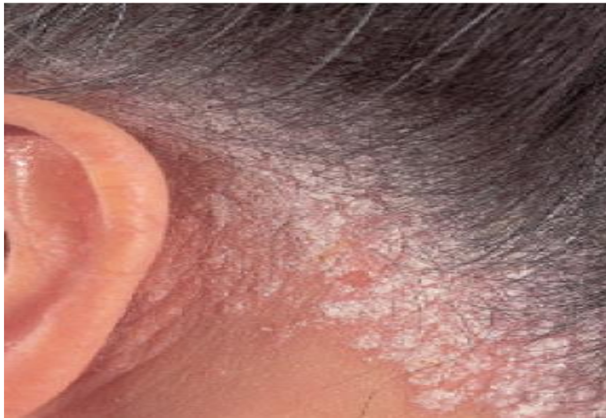

FIGURE 4.17 Scalp psoriasis

Psychological factors

In some people, the plaques are very long-standing and show little change, and in some, they come and go. With others, the skin changes worsen and spread to other parts of the body, sometimes in response to a stressful event. This is particularly distressing for the person involved who then has to cope with the stress of having a relapse of psoriasis as well as the precipitating event. The psychological impact of having a chronic skin disorder, such as psoriasis, must not be underestimated. There is a significant stigma connected with all skin diseases. There can be a mistaken belief that the rash is contagious. People with psoriasis are reluctant to go to the gym, swim or sunbathe. There is a cultural pressure to have a perfect body as defined by the fashion industry and media. Dealing with the shedding skin scales and their appearance on clothing can also be embarrassing and stigmatising. In these ways, psoriasis can cause loss of self-esteem, embarrassment and depression. However, each person will react differently, with some being psychologically affected by relatively minor patches, while others are untroubled by a more widespread rash.

Diagnosis

The diagnosis of psoriasis can be confusing. In the typical situation described in the earlier text, it is straightforward. In addition to affecting the extensor surfaces, psoriasis typically involves the scalp (also see the section 'Dandruff' in the earlier text of this chapter). Often the fingernails show signs of pitting, which can be a useful diagnostic sign. However, psoriasis can present with differing patterns that can be confused with other skin disorders. In guttate psoriasis, a widespread rash of small, scaly patches develops abruptly, affecting large areas of the body. This most typically occurs in children or young adults and may be triggered by a streptococcal sore throat. In general practice, the most common differential diagnosis to guttate psoriasis is pityriasis rosea.

This latter condition is self-limiting and usually settles down within 8 weeks. Psoriasis can sometimes also involve the flexor surfaces, the groin area, palms, soles and nails. The most common alternative diagnostic possibilities in these

situations include eczema or fungal infections. Psoriasis of the flexural creases can be very difficult to treat and often requires input from a dermatologist.

Arthritis

For some people who have psoriasis, there is an associated painful arthritis, which most commonly affects the hands, feet, knees, neck, spine and elbows. The disease can be similar to rheumatoid arthritis, but tends to be less symmetrical. Arthritis of the fingers can cause a 'sausage-like' swelling in the fingers or toes. Sometimes only a few joints are affected in an asymmetric fashion that causes diagnostic uncertainty.

There is also a variant that causes severe back pain and stiffness. There is a concern that these types of arthritis symptoms are poorly recognised in people with psoriasis and that there should be greater awareness and vigilance.

Medication

It is worthwhile enquiring about medication. Drugs such as *lithium*, beta blockers, non-steroidal
anti-inflammatory drugs and antimalarials can exacerbate psoriasis.

MANAGEMENT

Management is dependent on many factors, for example, nature and severity of psoriasis, past experience, understanding the aims of the treatment, ability to apply creams and whether the person is pregnant (some treatments are teratogenic). It is particularly important to deal with the person's ideas, concerns and expectations to appreciate how the person's life is affected by the condition to give a relevant, understandable explanation and to mutually agree whether to treat or not, and, if so, how.

Topical treatments

The doctor or specialist nurse is likely to prescribe topical treatment, usually an emollient in conjunction with active therapy. Emollients are very important in psoriasis; this point may not be widely appreciated, and they may be underused. They soften the skin, reduce cracking and dryness, prevent itching and help to remove
scales. There is also some evidence that they can suppress psoriasis and in many people with psoriasis should be used long term, as in eczema. The pharmacist can ask the patient when and how they are being used and emphasise their importance. They can also help the patient find an emollient that suits them best.

Calcipotriol, calcitriol or tacalcitol

Topical vitamin D preparations – *calcipotriol*, *calcitriol* or *tacalcitol* – are available as ointments, gels, scalp solutions and lotions on prescription. These products do not smell or stain, are easy to use and have become the mainstay of treatment in mild-to- moderate plaque psoriasis, as they can effectively clear the lesions. The main problem is that many people experience irritation of the skin with them; this includes burning, pruritus, oedema, peeling, dryness and redness. Excess sun sensitivity has also been reported. If overused, there is a risk of causing hypercalcaemia.

Topical corticosteroids

Topical corticosteroids alone should generally be restricted to use in the flexures or on the scalp or for small patches of localised psoriasis. They are available on prescription and should not be supplied OTC for this purpose. They can thin or remove plaques and reduce skin inflammation. An important concern is that when used alone they can destabilise the disease and this can result in a severe flare-up of psoriasis. Also an exacerbation of psoriasis is common when they are stopped. Large amounts of high-potency corticosteroids can result in severe steroid side effects (striae, skin atrophy and adrenocortical suppression). Pharmacists should be alert to patients who may be using only the corticosteroid (for example, on repeat prescription), and if they have concerns, advise the patient to attend the GP surgery.

Coal tar preparations

Coal tar preparations have been used to treat psoriasis for over 100 years and they can be reasonably effective. There are many *coal tar* preparations available and most of these can be provided OTC; these include ointments, shampoos and bath additives. Various preparations are combined with other topical treatments for psoriasis, for example, *salicylic acid*, which helps to break down keratin. There is no good trial evidence to indicate that any one is more effective than another. The choice of preparation therefore depends on licensed indications and the person's preference. Non-branded *coal tar* preparations contain crude coal tar (*coal tar British Pharmacopoeia [BP]*) and are smellier and messier to use than branded products. NICE advises the use of *coal tar* preparations for plaque psoriasis if vitamin-D- based topical therapy does not result in clearance of psoriasis or satisfactory control.

Dithranol

Dithranol has been a traditional, effective and safe treatment for psoriasis for many years and is available in proprietary creams and ointments (0.1–2.0%) that can be used for one short contact (30 min) period each day and removed using an emollient or by washing off in a bath or shower. They can be provided OTC if the *dithranol* content is 1% or less, but its use would normally be supervised by a dermatology specialist. The NICE guideline on psoriasis advises *dithranol* for treatment-resistant psoriasis. Some people are very sensitive to *dithranol*, as it can cause a quite severe skin irritation. It is usual to start with the lowest concentration and build up slowly the strongest that can be tolerated. Users should wash their hands after application. A major drawback is that it causes a yellowy-brown stain on skin, hair, sheets and clothing; patients should be advised to wear old clothing and use old bed linen when using *dithranol*. It should not be applied to the face, flexures or genitalia. There are some people who are unable to tolerate it at all.