Psoriasis: first-line treatments

Psoriasis is a chronic inflammatory skin disease that affects 2 to 3 per cent of the UK population. Although it can start at any age, the disease usually starts between the second and third decades of life or in the sixth decade. The cause of psoriasis is not known but inheritance appears to play a part — approximately one third of patients have a family history and a number of genetic markers exist.

Types of psoriasis
There are several types of psoriasis. The most common form of psoriasis is chronic plaque psoriasis (also known as psoriasis vulgaris or chronic stable plaque psoriasis), which accounts for approximately 90 per cent of cases.

Chronic plaque psoriasis
Typically, chronic plaque psoriasis presents as well-defined, thickened, red plaques (a plaque is a raised patch on the skin more than 2cm across) covered with silvery scales that are lib- erally shed (see Figure 1). On black skin the plaques appear dark red and the scale appears greyish. If the scales are scratched or removed, characteristic pinpoint bleeding (Auspitz's sign) is seen. Chronic plaque psoriasis can occur almost anywhere on the body but the most commonly affected areas are the scalp, the extensor (outside) surfaces of the limbs (typically shins and elbows) and the lower back. The plaques tend to be more or less symmetrical and they can crack and bleed. The major biological abnormalities in psoriasis include:

- Hyperproliferation of the epidermis, which leads to thickening of the epidermis and scaling — affected skin can be up to 16 times thicker than normal skin (hyperproliferation involves more cells entering the growth phase rather than an acceleration of growth)
- Abnormal differentiation of keratinocytes (cells that make up most of the epidermis) — the cells do not mature in the same way as normal keratinocytes (when the skin in psoriatic plaques is examined microscopically, the granular layer is missing, the stratum corneum is thickened and many of the cells in the stratum corneum still contain nuclei)
- Infiltration of the dermis and epidermis with activated T-lymphocytes and neutrophils
- Stimulation of the cutaneous vasculature, leading to new blood vessel formation in the psoriatic plaques

Cell-mediated immune mechanisms appear to drive these processes and a growing understanding of this area has led to studies of a large number of biological agents as treatments.

Chronic plaque psoriasis can also affect the flexures and intertriginous areas (eg, axillae, groin, perineum and under the breasts) where it appears as red, shiny, moist skin with no scaling. In some countries flexural psoriasis is described as “inverse psoriasis”. A significant proportion of patients find their psoriasis lesions itchy.

The clinical appearance of scalp psoriasis can vary from light scaling to grossly thickened scales stuck to the hair shafts. The scalp is affected in about 80 per cent of chronic plaque psoriasis sufferers. Scalp and flexural psoriasis present special problems for treatment — hair gets in the way and flexures are sensitive (thin skin), have mechanical problems (rubbing) and are prone to secondary infection.

Guttate psoriasis
Guttate (drop-like) psoriasis is an acute form of psoriasis that usually affects children and young adults (see Figure 2). It presents as widespread small, scaly lesions that appear as if spattered from a brush and commonly follow a streptococcal throat infection. In most patients guttate psoriasis clears within eight weeks with topical therapy.

Pustular and erythrodermic psoriasis
Pustular psoriasis and erythrodermic psoriasis are less common. Localised pustular psoriasis is
characterised by yellow-brown pustules on the palms or soles of the feet. Generalised pustular psoriasis is a rare form of the disease in which clusters of pustules develop on already inflamed skin. The onset is often acute and the patient is seriously ill with fever and malaise. Hospital admission is required.

In erythrodermic psoriasis the skin becomes red and inflamed all over the body (see Figure 3). There is usually scaling. The skin feels hot but the patient complains of shivering and malaise. Erythrodermic psoriasis can be precipitated by the withdrawal of systemic or potent topical steroids.

Nails Fingernails and toenails are affected in about 50 per cent of cases of psoriasis. Nails show small pits (similar to those on a thimble), onycholysis (partial separation of the nail from the nail bed) and “oil spots” or “salmon patches” (characteristic discoloration due to areas of psoriasis under the nail). Some or all of the nails can be affected.

Precipitating factors Psoriasis is a relapsing and remitting condition. It can flare up at any time, imposing a heavy psychological burden. Although the exact mechanisms are not understood, a number of precipitating or exacerbating factors have been identified:

- Trauma — psoriasis can appear at sites of injury, such as scratches, surgical wounds and even tattoos
- Infection — guttate psoriasis is often triggered by pharyngitis caused by beta-haemolytic streptococci
- Hormonal events (eg, menstruation)
- Sunlight (although sunlight usually improves psoriasis, the condition can worsen on exposure in 10 per cent of cases)
- Drugs (eg, beta-blockers, angiotensin-converting enzyme inhibitors, antimalarial agents and lithium)
- Alcohol intake
- Cigarette smoking
- Profound psychological stress (eg, bereavement or divorce)

Disease severity Classifications of severity vary and clinicians use factors such as disease activity, response to treatment and impact of disease on the individual to evaluate this.

There is general agreement that disease affecting more than 15–20 per cent of the body surface area is severe. However, this approach does not take into account the impact of a small area of disease in a sensitive or visible area and most clinicians recognise that the extent of the disease has to be assessed along with the degree of social or psychological disability that the patient is experiencing.

Management of psoriasis

Most patients with chronic plaque psoriasis have mild disease that can be managed in a primary care setting using topical treatments. The British Association of Dermatologists (BAD) and the Primary Care Dermatology Society guidelines for the initial management of psoriasis emphasise the use of topical treatments. Patients with moderate to severe disease can require second-line treatment, often involving phototherapy, photochemotherapy (PUVA) or systemic drug treatment under the supervision of a dermatologist (see the next CPD article in this series).

Although sufferers are rarely completely clear of diseased skin, there can be long periods when the disease is confined to a small patch on the leg or elbow. Sufferers are likely to experience phases of active disease (flare-ups or exacerbations) when the disease appears to break out and inflamed plaques can appear anywhere on the skin (as described above).

The treatment of some types of psoriasis may need special consideration. Panel 1 outlines typical regimens for scalp psoriasis.

Emollients All patients with psoriasis should be encouraged to use an emollient regularly. Emollients restore pliability to the skin and reduce the shedding of skin scales. They also reduce pruritus and help prevent painful cracking and bleeding. Patients should be encouraged to experiment with emollients until they find products that suit them, bearing in mind that different products may be needed for different areas of skin. An emollient bath additive may also be used.

Vitamin D analogues In recent years, vitamin D analogues (calcipotriol, tacalcitol and calcitriol) have become the mainstay of treatment for mild to moderate chronic plaque psoriasis. They can clear psoriasis in six to eight weeks.

Vitamin D analogues inhibit keratinocyte differentiation and proliferation and might have some anti-inflammatory activity. They have weaker effects on calcium metabolism than vitamin D itself. Unlike other treatments, such as tar and dithranol, they do not smell or stain. Nor do they carry the risk of the skin atrophy seen with topical steroids. It has been shown that vitamin D analogues may be as effective as use of a potent steroid, but with a longer duration of remission following discontinuation of treatment. Skin irritation, resulting in transient increased redness, dryness and stinging or burning, can be a problem and, for this reason, calcipotriol should not be used on the face or flexures. Calcitriol is significantly less irritant and is suitable for use on the face and sensitive flexural areas.

It is important to ensure that adequate quantities are used — 0.5g (a fingertip unit) of calcipotriol cream or ointment per 100cm² of skin (about the area of a medium-sized adult palm). It is worth emphasising that calcipotriol should be applied fairly thickly in contrast to topical corticosteroids. One study showed that when optimal amounts were applied, about two thirds of apparent “non-responders” derived significant benefits. Another useful approach is to ensure that the patient is prescribed both cream and ointment formulations — the ointment for night
Panel 1: Treatment of scalp psoriasis

Scalp psoriasis often extends just beyond the scalp margin, leaving an inflamed, scaly border extending about one centimetre from the hairline (see Figure 4). On the scalp, thickened, scaly patches are separated by areas of normal skin. In addition, the scalp can be itchy and feel tight or sore. Just as psoriasis on other areas of the body varies in severity between individuals, so does the extent to which it affects the scalp. Some people appear to have a bad attack of dandruff, shedding large numbers of silvery-white skin flakes but others can have a thick, unsightly layer of scale. Psoriasis does not normally affect hair growth although some patients with scalp psoriasis experience temporary thinning of the hair. Usually this corrects itself once the disease is controlled.

Regular use of a tar-containing shampoo may be sufficient to control mild scalp psoriasis. The treatment of severe scalp psoriasis is likely to involve two stages. First, treatment is required to soften and remove the scale. This allows active treatments, used in the second stage, to have maximum potential benefit in controlling the disease process.

Scale can be softened effectively using olive oil, almond oil or compound coconut ointment. Products containing keratolytic agents such as salicylic acid or sulphur can help lift scales. Thorough but gentle application and sufficient contact time are essential for success. Olive oil can be massaged gently into the scalp, and left for at least one hour to penetrate the dried scale. Ointments should be applied quite thickly, parting the hair in several places so as to cover the whole scalp. Again, it should be left in place for at least an hour. Some specialists advise leaving these softening treatments on overnight. A plastic shower cap can be worn over the hair and pillows need to be protected with a towel. Before washing out the oil, some of the loosened scales can be gently combed or picked out. Disinfectant shampoos (eg, Cleanell) may be used — or any shampoo that suits patient. Most people find scalp treatment easier if someone else can help with the application and the combing-out processes. Working the shampoo into the hair near the scalp before adding water can remove the oil more effectively. It may take some time for the scalp and hair to return to a satisfactory condition. The softening and shampooing routine may need to be repeated daily for a few days.

The second step, active treatment with vitamin D derivatives or steroid scalp applications, can then be performed. Again, careful, thorough application is needed, gently parting the hair and working across the whole scalp.

Perming, colouring and bleaching of the hair can all be done safely in people with psoriasis, subject to the usual precautions (eg, testing for skin sensitivity before use). If there is active disease, it is better to wait until it has subsided because the chemicals may exacerbate a flare-up of psoriasis if the skin is cracked or damaged.

Panel 2: BAD guidelines for the management of psoriasis with topical corticosteroids

- No topical steroid should be used regularly for more than four weeks without review
- Potent corticosteroids should not be used regularly for more than seven days
- No unsupervised repeat prescriptions should be made: patients should be reviewed every three months
- No more than 100g of a moderately potent or higher potency preparation should be applied per month
- Attempts should be made to rotate topical corticosteroids with alternative non-corticosteroid preparations
- Use of potent or very potent preparations should be under dermatological supervision
- The fingertip unit is a measure that helps patients to know how much ointment or cream to apply
women of child-bearing age unless adequate contraception is in use.

**Tar preparations** Coal tar has been used in the treatment of psoriasis for decades. Its mode of action is not fully understood and the active component (among the thousands in crude coal tar) is unknown. Coal tar is believed to be keratolytic, with some anti-inflammatory and antiproliferative effects. In addition to proprietary preparations, crude coal tar, 1–5 per cent in white or yellow soft paraffin or emulsifying ointment, has been used.

Crude coal tar stains clothing and smells unpleasant to many people. In addition, it is less effective than vitamin D derivatives. It has been combined with UVB phototherapy (as in the Goeckerman regimen). Crude coal tar contains a number of carcinogens and percutaneous absorption of mutagens is known to occur. Nevertheless, there is no epidemiological evidence that topical coal tar treatment increases the risk of cutaneous or internal cancer.

**Dithranol** Dithranol (anthralin) has also been used for the treatment of psoriasis for many years. It is a yellow powder that is profoundly irritant to skin, causing inflammation and blistering. It causes a purple-brown residual (temporary) staining of skin and also stains clothing and bathroom fittings permanently. Dithranol was traditionally incorporated into Lassar’s paste (zinc and salicylic acid paste BP) so that it can be applied to the psoriasis plaques and kept away from uninvolved skin. The concentration used is gradually increased according to the patient’s response. It is believed to exert a direct anti-proliferative effect on epidermal keratinocytes.

Dithranol has been used in two main ways. Traditional, inpatient treatment involves application (by a nurse). The paste is removed after 12 to 24 hours after which the patient has a tar bath and UVB irradiation (Ingram regimen). In recent years short-contact dithranol treatment (“SCDT”) has been developed, which involves application of dithranol in concentrations of up to 8 per cent for between 15 and 30 minutes, with or without UVB irradiation. For some patients, SCDT is suitable for home use.

An alternative formulation of dithranol can offer some advantages. Micanol is temperature sensitive and releases dithranol at skin temperature. It must be washed off with cold water (no soap) to avoid further release of dithranol. A response to treatment can be expected within 20 days. Great care must be taken to avoid contact with normal skin and facial skin. Dithranol treatment is impractical if there are multiple small plaques and it is not suitable for the treatment of flexural psoriasis because of its irritant nature.

**Pharmaceutical care** In discussion with patients and carers it is important to emphasise the following:

- Psoriasis cannot be cured, but it can be controlled

- Psoriasis is not infectious
- Psoriasis does not develop into skin cancer
- Psoriasis cannot be spread to new areas of skin through the application of topical treatments

As can be seen from treatment guidelines, a patient can have several concurrent topical treatments. It is important to ensure that the patient understands which product to apply to which site, the quantity to be applied and the method of application — and what kind of response to expect and when. Time spent on these points can make a major contribution to the effectiveness of the prescribed treatment.

It is important to provide up-to-date information about available treatments, their effectiveness, side effects and practical considerations so that patients can decide on what is most suitable for them. Moreover, some patients who have had tar or dithranol treatments in the past have given up on treatment and may not have had the opportunity to try newer products such as the vitamin D analogues. Sources of information include patient support groups (see below), pharmaceutical companies and local dermatology specialist centres.

Surveys have shown that patients are often disappointed with the results of prescribed treatment. Inadequate information about how and where to apply topical products almost certainly contributes to this, as well as inadequate information about alternative treatment options. Pharmacists who have regular contact with patients, can play an important role in helping to ensure that current guidelines are followed, responses to treatment are monitored and treatment is modified if necessary.

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**References**


**Resources**

- The Psoriasis Association (Tel 0845 676 0076) www.psoriasis-association.org.uk
- British Association of Dermatologists Clinical guidelines on psoriasis www.bad.org.uk/doctors/guidelines
- British Association of Dermatologists & Primary Care Dermatology Society. Recommendations for the initial management of psoriasis www.pcds.org.uk