Psoriasis: a general overview

Psoriasis is a common inflammatory dermatosis which affects 1.2 million people in the UK. Psoriasis is a chronic relapsing, remitting disease that varies in severity from relatively mild localized disease, to patients who have all their skin involved. With adequate treatment the signs and symptoms of psoriasis can be relieved. Newer therapeutic options are offering improvements in care for sufferers.

With some basic knowledge of dermatology and dermatological therapeutics, significant help can be given to the many patients suffering with this distressing disease. This review outlines the features of psoriasis and the treatment options available.

Epidemiology

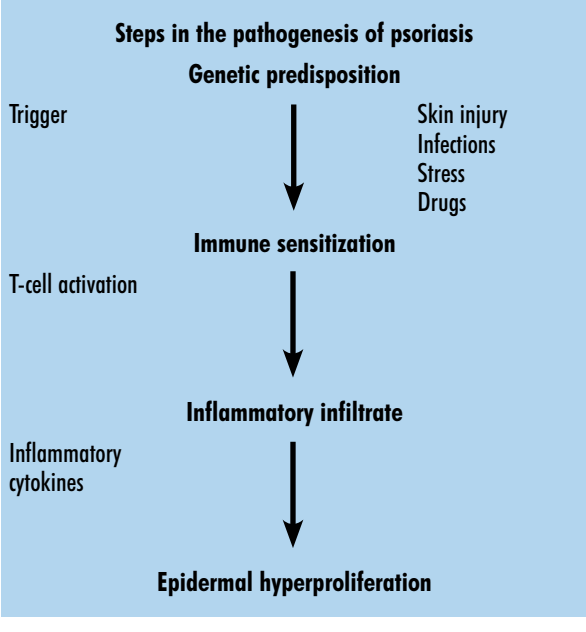
Estimates of the prevalence of psoriasis vary in different populations from 0.5–4% (Koo, 1996). Approximately 2% of the UK population suffer with the disease (Nevitt and Hutchinson, 1996). The sexes are equally affected. Approximately 25% of patients develop psoriasis before the age of 20 years, and there is a second peak of incidence during the fourth and fifth decades.

Psoriasis is encountered in all racial groups, however, it is seen twice as commonly in white Caucasians compared to black or Asian skin types. This can not be explained simply by geographical differences and probably is determined by genetic influences.

Pathogenesis

Psoriasis is assumed to be a multifactorial disease; the genetic susceptibilities have been demonstrated although candidate genes have not been fully determined (Barker, 2001). In predisposed individuals certain triggers appear to induce an immunological process. One of the first histological changes to note in psoriasis is an inflammatory infiltrate together with vascular neogenesis. This in turn leads to epidermal hyperproliferation and the subsequent development of the clinical features of psoriasis (*Figure 1*).

Figure 1. Steps in the pathogenesis of psoriasis.



Clinical features

The features of psoriasis reflect the epidermal hyperproliferation that occurs. The classic psoriatic plaque is well demarcated, thick and scaly with an erythematous base (*Figure 2*). Classically, psoriasis affects the extensor surfaces such as the elbows, knees and back (Lebwohl,

Figure 2. Chronic plaque psoriasis.

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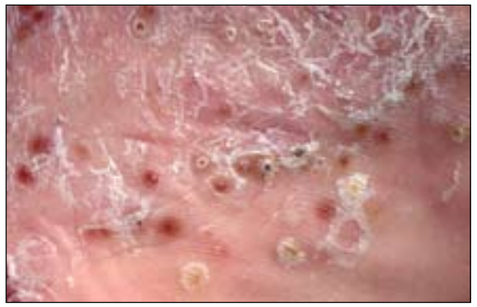

Figure 3. Palmar/plantar pustular psoriasis.

Figure 4. Erythrodermic psoriasis.

2003; Griffiths et al, 2004), although it can affect any part of the body (*Figure 3*), with particular patterns such as scalp and flexural psoriasis sometimes causing diagnostic confusion.

Although psoriasis may be asymptomatic, up to 70% of patients complain that it is itchy or sore, particularly when their psoriasis is going through an active phase (*Table 1*) (*Figure 4*).

Living with psoriasis

Patients with psoriasis will find their skin uncomfortable, often sore and itchy. However, it is often the appearance of the skin that causes the most distress.

In one survey when patients were asked to rate the most distressing aspect of their psoriasis, it was the itching, scaling and noticeable skin flakes that they rated as the worst aspect (Koo, 1996).

Patients with psoriasis feel stigmatized and will often go to great lengths to disguise or conceal their disease. The psychological burden of psoriasis should not be under-estimated. It is recognized that having psoriasis is a risk factor for clinical depression and suicidal thoughts (Gupta, 1998).

In addition to the physical and psychological burden of psoriasis, there is also a financial cost. Prescription charges, extra laundry and clothing charges, the availability of both suitable employment and leisure opportunities result in a significant extra cost to psoriatic patients.

Table 1. Types of psoriasis

Generalized	Chronic plaque psoriasis
	Guttate
	Generalized pustular psoriasis
	Erythrodermic
Localized	Scalp
	Flexural
	Nail
	Palmo-plantar pustulosis

Management

Diagnosis and education

The diagnosis of psoriasis is usually made clinically. The localized forms may lead to some diagnostic confusion for the non-dermatologist; however, it is rare for further diagnostic tests such as a skin biopsy to be needed.

Once the diagnosis has been made it is important to give the patient a clear explanation of their disease. Emphasis needs to be placed on the chronic relapsing, remitting nature of the disease. Patients also need a realistic explanation of the treatment goals. There is at present no cure for psoriasis. The aim of treatment is to control the signs and symptoms of the disease. To achieve this, patients need to know how to use the various therapies on offer and any risks associated with the treatments. Often this process takes some time and may be more easily delivered by specialist nurses (British Dermatology Nursing Group (BDNG), www.bdng.org.uk/about). Patients can obtain further support via the various patient support groups such as the Psoriasis Association and Psoriasis Scotland Arthritis Link Volunteers.

Treatment options

Emollients

Psoriasis, by its very nature, will give areas of dry scaly skin. The simple use of an emollient to rehydrate the skin will not only make it feel more comfortable but has also been shown to have a therapeutic potential in its own right (Watsky et al, 1992). Comprehensive emollient therapy consists not only of a suitable moisturizer but also emollient bath oils and soap substitutes to use when bathing or washing.

Table 2. Summary of the British Association of Dermatologists guidelines for the initial management of psoriasis

Localized plaque	Dithranol, moderately potent steroid, tar-based cream, tar/steroid, vitamin D analogue
Widespread plaque	Tar-based cream
	Tar and/or steroid (moderately potent steroid and dithranol may be less suitable)
	Vitamin D analogue
Scalp	Tar-based shampoo and/or salicylic acid, potent steroid or calcipotriol

Topical therapies

For the majority of patients with psoriasis, topical therapy will provide a safe and efficacious therapeutic option (*Table 2*).

Tars

Coaltar preparations are traditional treatments for psoriasis (Young, 1970). They are smelly and messy to use and unfortunately when cleaner preparations have been formulated they are found not to be as efficacious. The difficulty in using these preparations has meant that their use has declined in recent years, although the cleaner preparations may be useful for patients with relatively mild disease.

Dithranol

Dithranol is another traditional treatment, and is often used in regimens combined with ultraviolet (UV) phototherapy. It suffers from being a messy treatment and will also 'burn' adjacent uninvolved skin (Jones et al, 1985). 'Short contact' regimens, where the dithranol is left on the skin for shorter periods of time, are easier for patients to comply with at home. Patients do need to be warned about the ability of dithranol to irreversibly stain clothing and soft furnishings.

Corticosteroids

In the UK there has been a long-held concern regarding the use of topical corticosteroids for treating psoriasis. In other countries, notably in North America, topical corticosteroids are the most commonly prescribed treatment for psoriasis. Steroid can achieve quick resolution of a psoriatic plaque, however, because of tachyphylaxis (reduction in efficacy with continued use) and re-bound flare when the steroid is stopped patients may get 'locked-in' to using increasingly potent topical steroids to maintain the effect. The continuing use of super-potent topical steroids can lead to significant systemic absorption and local effects such as skin atrophy and telangectasia.

Vitamin D3 analogues

The antiproliferative effect of vitamin D has been used in a number of synthetic preparations, namely calcipotriol, calcitol and tacalcitol. They can be very effective at reducing the thickness and scale of a plaque although the treatment site often remains red. To reduce the irritation and erythema caused by these products they have been used in combination with topical steroids to good effect. A novel formulation has been produced combining calcipotriol and a potent topical steroid (betamethasone dipropionate). This combination product has proven very efficacious when treating stable chronic plaque psoriasis (Douglas et al, 2002). Long-term studies have shown that treatment for up to 52 weeks with this combination product would appear safe, although it would seem sensible to advise patients to have breaks between repeated courses of treatment.

Phototherapy

Psoriasis sufferers recognize the beneficial effect that sunlight has on their psoriasis. This beneficial effect is a result of the ultraviolet radiation (UVR) in natural sunlight. As climatotherapy it is used in a number of psoriasis treatment centres around the world. It can also be mimicked by using artificial ultraviolet sources. Units that produce ultraviolet B (UVB) radiation are most effective but because of the burning potential it needs to be delivered under close supervision. More recently ultraviolet lamps which emit a narrow wavelength of UVB have been developed (TL01 lamps). They are more efficacious because higher doses of UVR can be delivered with a reduced burning potential. Ultraviolet A (UVA) radiation, which is commonly emitted from tanning devices, has negligible therapeutic effect alone. However, when UVA is used in conjunction with a photosensitizing agent such as a psoralens, as in psoralens and UVA (PUVA) photochemotherapy, it can also be very effective (Griffiths et al, 2000). The risk of these phototherapies, particular PUVA, is the long-term risk of developing skin cancer.

Systemic treatments

Patients whose psoriasis is either too extensive for or who are intolerant of topical therapy may be candidates for systemic therapies. A variety of drugs may be used, with varying efficacy and side-effect profiles (*Table 3*).

Table 3. Commonly used systemic therapies for psoriasis

Drug	Reference	Mode of action	Side effects
Acitretin	Gollnick (1996)	Effects on epithelial differentiation	Hepatotoxicity, hyperlipidaemia
Cyclosporin	Ellis et al (1986)	Anti-lymphocytic	Nephrotoxic, hypertension
Methotrexate	Boffa and Chalmers (1996)	Anti-proliferative	Hepatotoxic, myelosuppression
Fumeric acid esters	Mrowietz et al (1998)	Unclear	Gastrointestinal upset, flushing

Biologics

The development of a new class of drug, monoclonal antibodies and fusion proteins that specifically target steps in the inflammatory pathway, such as T-cell activation and tumour necrosis factor-α (TNF-α) production, have opened up further therapeutic options for patients. Their side-effect profile appears of less concern than the older established systemic agents. However, their cost will limit their use to patients with very severe disease that is not responding to traditional therapies (Thomas et al, 2005).

Choosing the right treatment

When deciding on the appropriate choice of therapy, the clinician needs to enter into a therapeutic partnership with the patient. It is important for the individual patient to be involved in the decision-making process. This will enable the patient to express concerns regarding his/her ability to apply the medication and hopefully improve compliance.

Table 4. The stepwise approach to the treatment of psoriasis

Psoriasis severity/responsiveness		
Mild/initial →		Severe/resistant
Topical therapy	**Phototherapy**	**Systemic therapy**
Emollients	Emollients	Emollients
Vitamin D analogues	Ultraviolet B-broad	Methotrexate
Coal tar	-narrow	Cyclosporin
Dithranol	Psoralens ultraviolet A	Systemic retinoids
Steroids	Natural sunlight	Immunotherapies
		Biologics

KEY POINTS

- The psychological burden of having psoriasis should not be underestimated.
- The majority of patients can be treated in a primary care setting.
- The chronic, relapsing nature of psoriasis needs to be emphasized to patients. A therapeutic partnership with the patient, with them involved in the decision-making process, is likely to prove valuable.
- Time invested in demonstrating to patients exactly how to use their treatments is likely to pay dividends.

The majority of patients with psoriasis have all their care delivered in the primary care setting. Each year as few as 3% of patients with psoriasis are seen in a secondary care setting. Patients migrate through a step-wise approach to their care. If patients have failed with conventional topical therapy they may benefit from being admitted to a dermatology ward where regimens using tars, dithranol and 'high-dose' vitamin D analogues may be effective in clearing their psoriasis. All those needing phototherapy or second-line systemic treatment should be under the supervision of the local dermatology service (*Table 4*).

Conclusions

Psoriasis is a distressing, incurable, relapsing and remitting disease. However, for the majority of patients relief can be given safely and effectively in the primary care setting. Some basic knowledge of dermatology and dermatological therapy is required. For the minority of patients at the more severe end of the disease spectrum there are an increasing number of therapeutic options available. These should be delivered under specialist supervision. **BJHM**

Conflict of interest: Dr Burd has received honoraria from Leo Pharma and Schering Plough.

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