

# PSORIASIS

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## DEFINITION

The origin of the word is probably from the Greek PSORA (to itch), even though psoriasis is not universally itchy. Older texts possibly confused leprosy and other skin disorders with the disease but psoriasis is not infectious. Psoriasis is a papulo-squamous condition characterised by certain clinical features.

## CLINICAL FEATURES

Psoriasis is a common skin condition which affects between 1% and 2% of the British population. It affects males and females more or less equally, and is a genetic disorder inherited as an autosomal dominant (with impaired penetrance, which explains why every generation is not necessarily affected with psoriasis). There are a number of abnormalities which are present in psoriasis, but one of the most basic problems seems to be the enhanced epidermal cell turnover. Other features such as altered keratin, inflammation, and immunological abnormalities may be secondary to the cell turnover problem, but there is increasing evidence that there are other more basic abnormalities in psoriasis. There is altered dermal vascularity which some believe may be a significant factor since it can be demonstrated in uninvolved as well as involved skin of psoriatic individuals. Moreover, the demonstration of the beneficial effect of cyclosporin has stimulated interest in the immunological aspect of psoriasis and the possibility that at least some features of psoriasis may be autoimmune in nature.

### TYPES OF PSORIASIS

Plaque-type  
Discoid  
Guttate  
Follicular  
Seborrhoeic  
Flexural  
Scalp  
Erythrodermic  
Pustular  
Nail  
Genital

Fig 1

## TYPES OF PSORIASIS

In any one individual, psoriasis may not necessarily be a homogeneous clinical type, but it can be useful to think of the condition in various clinical presentations.

### Plaque-type

This is the most common presentation, and is often a better term than discoid psoriasis since areas of psoriasis are often seen in larger plaques. Plaque-type psoriasis may be divided into unstable or stable, depending upon whether or not it is tolerant to topical treatment. Widespread and localised plaque-type are further sub-divisions, and the terms active and inactive can be used to indicate whether the disease is increasing or decreasing in activity.

### Discoid

Smaller disc-shaped lesions are seen and nummular psoriasis is an alternative term for this presentation. Both plaques and discoid lesions are more common over extensor aspects of limbs, and this is probably because of friction and the Koebner phenomenon localising the psoriasis – though vascular factors may also be important.

### Guttate

Whereas plaque-type and discoid psoriasis are often seen in adults, guttate is commoner in children – particularly as a sequel to streptococcal throat infections. The prognosis for this type of psoriasis seems to be better, although some individuals will progress to the more chronic discoid or plaque-type disease.

### Follicular

Follicular involvement is often seen in association with other widespread types of psoriasis, but occasionally can be seen in isolation.

### Seborrhoeic

This is a more superficial type of psoriasis with scalp involvement. Facial and forehead involvement may be more common in this presentation.

### Flexural

Although flexural involvement is commonly seen in other types of psoriasis, the flexures may be a dominant problem in some people. When the flexures are involved, soreness is often a feature of the condition.

### Scalp

Scalp involvement is often seen in more widespread psoriasis, and may to some extent parallel the severity of the condition. However, scalp involvement as the only site can occur and the term pityriasis or tinea amiantacea is used when adherent scales are seen along hair shafts.

### Erythrodermic

When there is total body involvement, the term erythrodermic is used, but sub-erythrodermic psoriasis is more common. Associated abnormalities (see later) may exist when psoriasis is extensive.

### **Pustular**

There may be a pustular component to erythrodermic psoriasis, but widespread pustular psoriasis, like erythrodermic disease, is fortunately rare. However, localised pustular psoriasis affecting the palms and/or soles is quite common.

### **Nail**

Nail abnormalities without skin lesions are common, but nails are quite often involved in the psoriatic process. There is a correlation between nail involvement and joint involvement, particularly distal interphalangeal joints. Nail changes may vary between a few pits to severe ridging, onycholysis, subungual hyperkeratosis and gross nail dystrophy.

### **Genital**

Rarely, psoriasis may affect genitalia in isolation, but, more commonly, as a feature of flexural involvement.

## **COMPLICATIONS**

Joint involvement is common and may, at least in some people, reflect an auto-immune genetic background. Joint trouble varies from classical psoriatic arthropathy with distal interphalangeal joint involvement to large joint disease. Because of the increased cell turnover in psoriasis, there is a theoretical risk of gout due to increased uric acid production but, although this is mentioned in most textbooks, it is very rarely seen in practice. Erythrodermic psoriasis may be associated with anaemia, high output cardiac failure and altered liver function tests, indicating the systemic nature of the condition in certain situations.

One of the most significant effects of psoriasis is related to the disturbed body image and decreased acceptance of the condition that is often present in sufferers. Psoriasis and coping with psoriasis are often stressful and anxiety and depression may be associated with the disease. This must often be borne in mind when treating psoriasis.

## **CLINICAL COURSE**

If a person has a genetic predisposition to psoriasis, various trigger factors may cause the onset or exacerbation of the condition and these include bacterial or viral infections, trauma, emotional upset or stress. However, although stress may trigger psoriasis in a susceptible individual it does not cause the condition. Like many chronic conditions, psoriasis may fluctuate or wax and wane for no apparent reason. Neither diet nor lifestyle need necessarily be altered to be able to cope with psoriasis. Stress is as common as life itself and one person's stresses may be another's driving force or relaxation. Coping with psoriasis is basically coping with oneself and with others.

## **TREATMENT**

Therapy of psoriasis should be tailored to suit the individual and the skin. There is no one treatment that will suit everyone. Most drug and physical therapies work by exerting a beneficial effect upon the enhanced epidermal cell turnover.

## **TREATMENT OF PSORIASIS**

### **Topical therapy**

Dithranol  
Tar  
Topical Steroids

### **Physical therapy**

UV light therapy  
Skin X-ray therapy

### **Drug therapy**

Methotrexate  
Hydroxyurea  
Cyclosporin  
Retinoids

*Fig 2*

### **Dithranol**

Dithranol remains the most useful therapy for psoriasis. It is antiproliferative and anti-inflammatory, inhibiting epidermal cell turnover by an effect upon DNA synthesis. It is used topically but its main problem is that it is irritant, particularly to non-psoriatic skin. The irritant effect seems to be related to dithranol's ability to scavenge free oxygen radicals in the skin.

Dithranol may be used overnight in the so-called Ingram regime, when it is applied each day and left on, to be washed off and re-applied the next day. More useful to outpatients is the short-contact regime whereby dithranol is applied for 1-2 hours before removal. Various proprietary preparations of dithranol are available, but the bases for dithranol may vary from yellow soft paraffin for weaker dithranol strengths (0.5% or less) to Lassar's paste for stronger preparations (the latter helpful in reducing dithranol spread and resultant irritancy of surrounding skin). Dithrocream (0.1%, 0.25%, 0.5%, 1%, 2%) and Dithrolan (0.5%) are both proprietary dithranol applications. Therapy is often commenced with 0.1% or 0.2% strength dithranol and thereafter strength can be increased after a few days, if inflammation is not a problem. Usually, dithranol strengths up to 1% are employed, but sometimes strengths up to 5% or 10%, or occasionally up to 20% and 30% are necessary. The higher the dithranol strength, the more the likelihood there is of irritancy and burning. The darker-skinned person who tans well (and tends not to burn in the sun) usually does better with regard to less skin irritancy from dithranol, but this is not a hard and fast rule. It is important that the dithranol is applied accurately and removal each day helps minimise irritation. Removal is facilitated during bathing and the addition of other preparations, such as Polytar, in the bath can be helpful during therapy. Dithranol application is continued, dressings applied, and the dithranol strength is increased or decreased (the latter if there is mild irritation) as therapy progresses. However, if inflammation is a significant problem yellow soft paraffin can be temporarily applied to help soothe sore skin. The end point of treatment is often judged by the smooth feel of the skin rather than the appearance, since dithranol staining of the skin can be quite marked in some people. The staining gradually disappears spontaneously but removal can be enhanced by the application of salicylic acid ointment or tar and salicylic acid ointment. However, dithranol staining of clothes or bedclothes can be a difficult problem.

## Tar

Tar, like dithranol, is a useful therapy for psoriasis. It is particularly effective for guttate psoriasis, although it can be useful for seborrhoeic or guttate psoriasis. The exact chemical constituent of tar which exerts a therapeutic effect remains unknown. Tar can be useful for body or scalp involvement, and can be used topically, in shampoos, or as a bath additive. Tar preparations include Alphosyl and different dilutions of tar in yellow soft paraffin (1%, 2%, 5% or more). The goekermann regime involves the use of tar topically, tar baths and ultraviolet light.

## Topical steroids

Although there is no place for systemic steroids in psoriasis, there can be an indication for topical steroids in certain situations. These include scalp, facial or flexural psoriasis. In some sites dithranol or tar preparations may not always be the most favourable agents. Facial psoriasis can be difficult to treat and a balance must be struck between the unacceptable staining of the dithranol or tar on the face, and potential side effects from topical steroids on the face. This must be weighed against the cosmetic considerations of psoriasis on the face. The weakest strength possible of topical steroid is indicated for psoriasis, but only in specific situations in certain instances. Steroid/antimicrobial preparations such as Vioform HC ointment or Tri-Adcortil cream or ointment may be helpful if secondary infection is a problem. It should always be remembered that topical steroids may precipitate a flare-up of psoriasis when their use is withdrawn, and topical steroids do have side effects which would contraindicate their use in anything other than limited situations.

## Physical therapies

Ultraviolet light is beneficial in psoriasis. Natural sunlight can be beneficial to many people but this can be enhanced by artificial ultraviolet light therapy. Ultraviolet light A (UVA) is the safest but not the most effective for psoriasis. Its effect can be enhanced by psoralen taken orally (PUVA) but this does slightly increase the risk of cutaneous cancer and a further disadvantage is the need to wear UV-screening glasses to minimise the theoretical risk of predisposition to cataract formation. Bathing in a psoralen preparation and subsequent UVA (BUVA) is an occasional alternative to PUVA, but it is more difficult to standardise this therapy. UVB is more effective than UVA, but does carry a slightly increased risk of cutaneous carcinogenicity. However, selective UVB – giving UVB in a narrow spectrum – may decrease the risk of skin cancer.

Skin X-ray therapy can be useful for widespread or localised psoriasis in certain situations. This is a safe treatment and can be effectively used in parallel with other therapies. X-ray therapy, either very superficial Grenz ray or superficial X-ray, can be anti-inflammatory and anti-proliferative, thereby helping psoriasis.

Surgery of psoriasis and laser therapy seem only of experimental interest and do not appear to have any practical applications for the treatment of psoriasis.

## DRUG THERAPY

### Methotrexate

This is a folate antagonist whose anti-proliferative action can be useful in psoriasis. It can be given orally, intravenously or intramuscularly and is conventionally given once-weekly to patients. The dose usually ranges from 5 mg - 15 mg per week.

Side effects include bone marrow and liver toxicity and regular blood counts and liver function tests are indicated, methotrexate being discontinued if abnormalities develop. A pre-treatment liver biopsy is usually undertaken and methotrexate should not be given if there is liver pathology which may contraindicate administration of the drug. Regular liver scans, usually once per year, are helpful to monitor patients. Patients should not consume alcohol whilst receiving methotrexate and the drug should not be given to pregnant women. Methotrexate is not generally given to younger patients, but is best reserved for erythrodermic or widespread pustular psoriasis or troublesome widespread plaque-type psoriasis in patients for whom other measures have failed. Usually methotrexate is continued for a period of time, but sometimes short-term administration can be indicated during a patient's admission to hospital. Care should be observed in elderly patients and with certain drug interactions with methotrexate such as with salicylates which may enhance toxicity. The antidote to methotrexate is leucovorin which should be administered if there is acute toxicity.

### Hydroxyurea

This inhibits DNA synthesis and is a useful drug for psoriasis, particularly widespread plaque-type and in the elderly. Side effects include bone marrow toxicity. A raised MCV is almost invariably found in patients receiving the drug. This latter finding may mask B12 or folate deficiency and if anaemia develops, further investigations may be necessary. Bone marrow toxicity is invariably reversible on cessation of the drug or reduction of the dosage. The dosage varies from 500 mg - 1500 mg daily. Like other cytotoxics, hydroxyurea should not be given during pregnancy.

### Cyclosporin

This drug, used for immunosuppression during and after tissue transplantation, has been found to be effective in psoriasis. Instead of being anti-proliferative, it exerts its effects by an action on T-lymphocytes. Nephrotoxicity is a problem at high doses, but this effect is minimised at lower doses (up to 500 mg daily). Monitoring of renal function and blood pressure is important, and if abnormalities develop the drug should be stopped. Again, Cyclosporin should not be given during pregnancy. Cyclosporin seems to be better for widespread plaque-type psoriasis rather than erythrodermic or pustular disease.

### Retinoids

The retinoid etretinate (Tigason) has a beneficial effect in psoriasis. It works by being anti-inflammatory, but also has an effect on keratinisation and probably also has an anti-proliferative effect. Side effects include mild ones such as drying of lips or mouth and hair thinning (which are reversible), but more significant side effects include hyperlipidaemia and teratogenicity. Adequate contraception must be employed whilst a patient is taking etretinate, and must be continued for at least 2 years after cessation of treatment because of the long half-life of the drug. A metabolite of etretinate (Acitretin), which is only available at present on a named patient basis has a much shorter elimination time (1 month), and contraception need only be continued for up to 3 months after cessation of the drug.

## THE FUTURE

Many therapies have been considered for psoriasis. There has been recent interest in topical vitamin D analogues and psoriasis, and also lipoxygenase inhibitors and fish oil. However, there remains no definitive cure for psoriasis other

than time, which may allow the disease to run its course and to settle down. All therapy is really temporising until there is a natural remission. In many ways, although we know much more about the biochemistry of psoriasis and there are many more treatments, we await more definitive therapy which hopefully will emerge in the future.

## COMPLICATIONS

The present skin unit is based at Beaumont Hospital, Lancaster and has a long experience of therapy for many skin conditions, including psoriasis. Dithranol, tar and other therapies are employed on the ward and there are facilities for PUVA and UVA, together with skin X-ray. An outpatient treatment programme is in its infancy and allows for certain patients to receive the expertise of the dermatology unit's nursing without hospital admission. This can be useful for some patients who cannot, for one reason or another, come into hospital. It is possible that when the dermatology department moves to Queen Victoria Hospital, Morecambe, there may be an increased reliance upon outpatient treatments.

Most patients with psoriasis respond well to therapy given by their general practitioner and only a portion of psoriatic patients need hospital advice on management. There may be a need for hospital referral because of inadequate response to therapy, or because of the extent of the psoriasis, or because of complications of psoriasis. Patients coming to the hospital department tend to be patients with more severe disease and

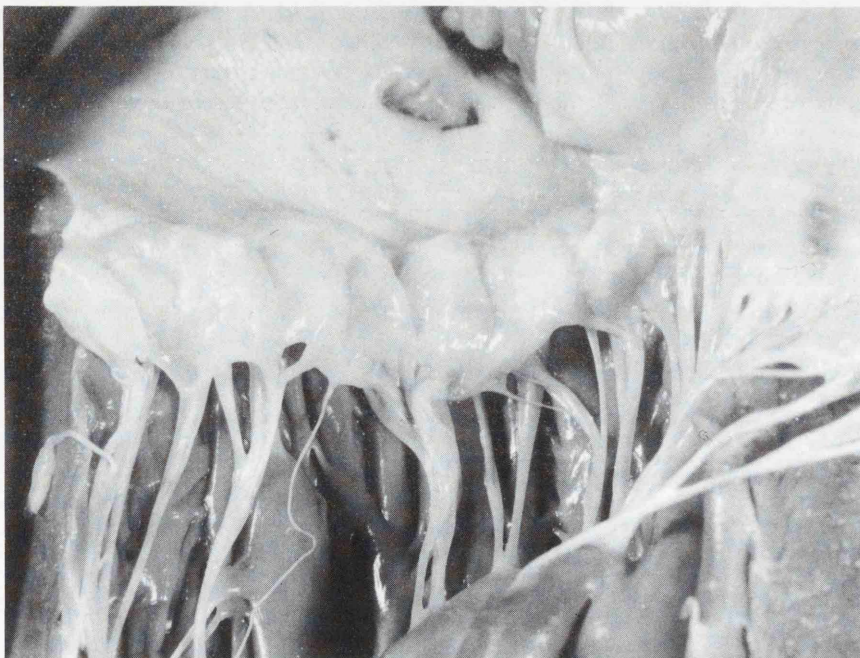
these people tend to have associated problems with anxiety or depression or other complications of psoriasis. Management of patients visiting the hospital tends to be more complicated and it is particularly important for patients receiving chemotherapy (usually attending the cytotoxic clinic) that there is monitoring for side effects of therapy. For that reason, patients receiving chemotherapy (methotrexate, hydroxyurea, cyclosporin, or retinoid therapy) have details stored on a departmental computer datafile which is updated whenever there is a change of therapy or side effects.

Most importantly with psoriasis, as with many skin conditions, it is treatment of the whole person that matters. Outpatients and inpatients need dedicated staff who understand skin and skin problems, and a relaxed atmosphere, both in the outpatient department and on the ward, is an important part of therapy. The skin unit at Beaumont Hospital, Lancaster, is by no means ideal, but does attempt to provide a comprehensive understanding of psoriasis and other skin conditions. We hope that the new unit at Queen Victoria Hospital, Morecambe, can achieve that ideal.

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## QUIZ



A 54-year-old man, who had been previously well, suddenly collapsed and died whilst gardening. The only abnormality detected at autopsy is shown in the figure.

1. What is the abnormality?
2. What is the likely cause of death?

Answer on page 45