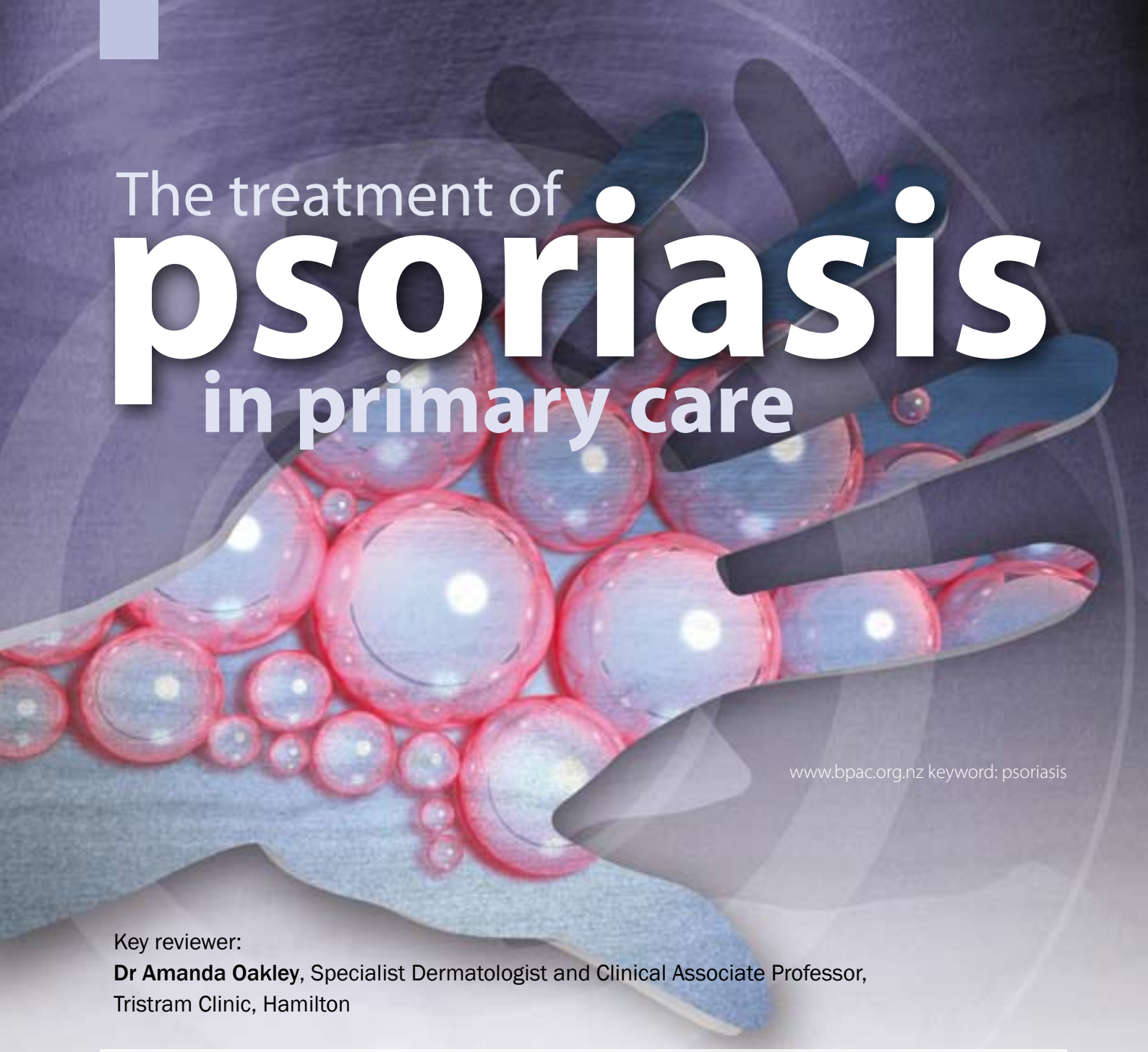
The treatment of psoriasis in primary care



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Key concepts

- Psoriasis is an emotionally and physically debilitating disease which can significantly affect quality of life
- Psoriasis is aggravated by factors including smoking, high alcohol intake, high glycaemic diet, certain medications (particularly lithium) and emotional stress
- Management includes support with the psychosocial aspects of the disease and advice on lifestyle interventions
- Topical treatments are the first choice for mild psoriasis, and are also used adjunctively for resistant lesions in patients with more extensive disease
- Calcipotriol and intermittent potent topical corticosteroids are prescribed for the majority of patients
- Systemic treatments are used for severe disease and are usually initiated by specialists

Psoriasis is an immune-mediated chronic scaly skin disorder in which there is upregulation of protein expression resulting in excessive keratinocytic proliferation, abnormal keratinocyte differentiation and inflammation. The pathogenesis involves Tumour Necrosis Factor (TNF)-α, dendritic cells and T cells. Normally keratinocytes require 28 – 44 days to migrate from the basal cell layer of the epidermis to the stratum corneum, but in people with psoriasis this migration takes only four days. Excessive cornification hardens the surface of the thickened plaques, which are red because of prominent vascularity.

Psoriasis is one of the most prevalent autoimmune diseases affecting both men and women equally. Approximately 2–3% of the New Zealand population are affected. Psoriasis most often appears in the late teens or in the 50s, but can develop at any age. There is a genetic predisposition and approximately one third of people with psoriasis report having an affected relative.[1,2]

It is an emotionally and physically debilitating disease which can have a significant impact on quality of life and can lead to depressive illness. Up to 25% of patients with psoriasis may also have seronegative arthritis.[2] It is associated with diabetes mellitus and people with moderate and severe psoriasis have a three-fold increased risk of cardiovascular disease.[3] Aggravating factors include smoking, high alcohol intake, high glycaemic diet, certain medications (e.g. lithium, beta-blockers) and emotional stress.[4]

DIAGNOSIS AND MONITORING

Psoriasis is diagnosed clinically, occasionally with the support of histology. There are no specific blood tests to diagnose or monitor psoriasis. Cardiovascular risk should be monitored due to the association between cardiovascular disease and psoriasis.[3]

There are several different types of psoriasis

There are several different types of psoriasis (Box 1, see over page). It may be widespread or localised to one part of the body, such as the scalp or fingernails. Psoriasis affecting the face, hands and feet may be particularly debilitating.

One way to assess severity depends on how much of the body surface is affected (see box below). Clinical trials may use the more complex Psoriasis Area and Severity Index (PASI) score to assess effectiveness of treatment.[4]

Assessing Severity

Severity can be defined by how much of the body surface area is affected:[5]

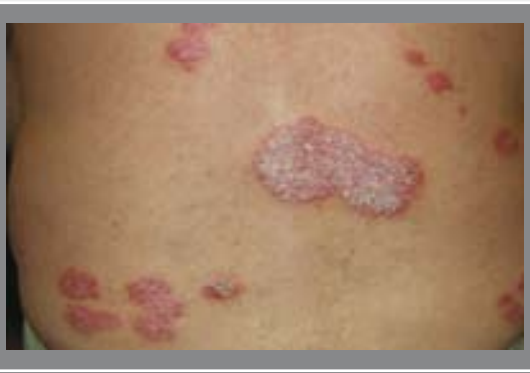
- **Mild psoriasis:** < 5% of the body surface area
- **Moderate psoriasis:** 5–10% of the body surface area
- **Severe psoriasis:** >10% of the body surface area

Quality of life is also taken into consideration when assessing severity.

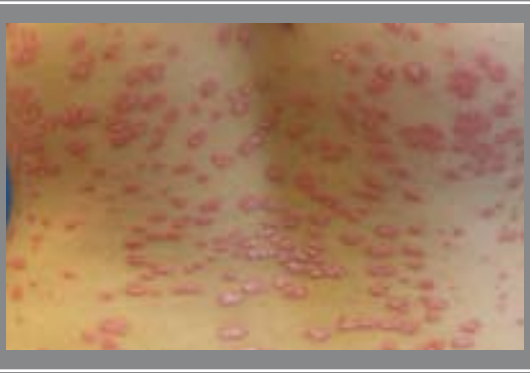
Best practice tip: To estimate the percentage of body surface area affected by psoriasis, consider that the palm of your hand (excluding fingers) is approximately equal to 1% of your body surface area.

Box 1: The main clinical types of psoriasis[4]

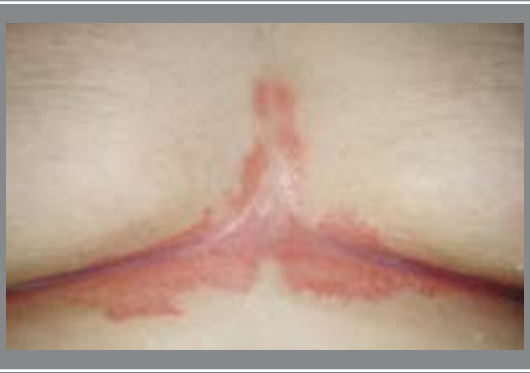
Plaque psoriasis (psoriasis vulgaris) – most prevalent form (~ 80%), thin to thick red plaques covered with a silvery scale, typically found on the elbows, knees, scalp and lower back but may occur anywhere. Most (~ 80%) people affected with plaque psoriasis have mild to moderate disease.



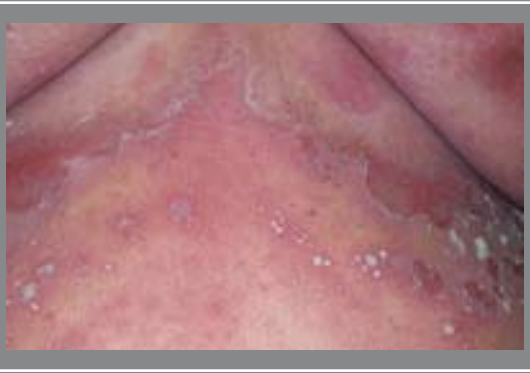
Guttate psoriasis – 5 to 10 mm red plaques on the trunk and limbs, often appearing suddenly after a Streptococcal or viral upper respiratory tract infection.



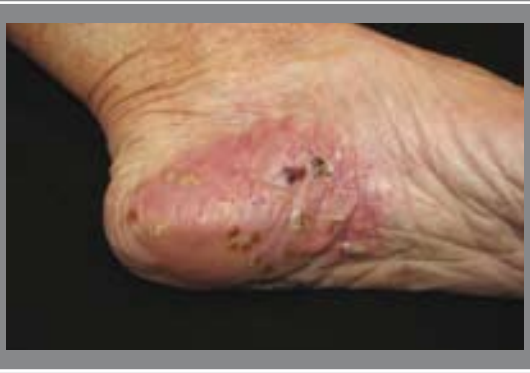
Flexural psoriasis – bright red smooth shiny skin lesions found in skin folds: axillae, groin, under breasts and around genitals and buttocks.



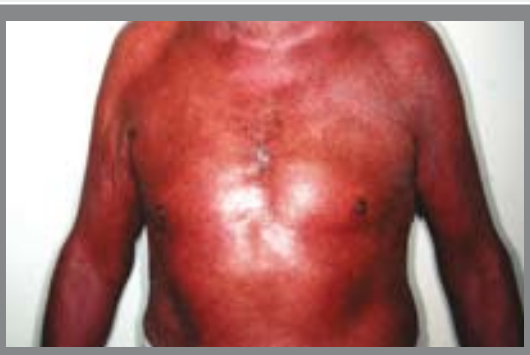
Generalised pustular psoriasis – a severe acute illness characterised by fever associated with crops of sterile pustules arising in or around painful red skin. It can be triggered by systemic or potent topical steroids and other medications, over-exposure to UV light, infections and stress.



Palmoplantar pustulosis – sterile pustules arising on palms and soles strongly associated with smoking (95%). Chronic plaque psoriasis is associated in 25% of cases.



Erythrodermic psoriasis – a particularly inflammatory form of psoriasis that affects most of or the entire body surface and can lead to hypothermia, hypoalbuminaemia and cardiac failure. Severe cases require hospitalisation. Known triggers include the abrupt withdrawal of a systemic psoriasis treatment, allergic reactions, over-exposure to UV light, infection and some medications (e.g lithium, antimalarials).



Nail psoriasis – pitting, onycholysis, subungual hyperkeratosis and other forms of nail dystrophy affect about 50% of patients with other forms of psoriasis.

Pictures supplied by DermNet NZ

MANAGEMENT

Educating the patient about the chronic nature of psoriasis and possible co-morbidities is important. Reassure them that it is not contagious and that treatment can help. The patient may require support to cope with the psychosocial aspects of the disease. Some patients may choose not to treat the skin disease itself as treatments can be burdensome and associated with adverse effects.

Provide general advice regarding the benefits of not smoking, maintaining optimal weight and avoiding excessive alcohol. Although sun exposure is often helpful, fair skinned people should be cautioned regarding the risk of sunburn and long term overexposure, leading to aging of the skin and skin cancer.

Treatment has to be individualised. It will vary depending on the characteristics of the psoriasis being treated: its body location, thickness of lesions, degree of erythema and scale, as well as patient preference or commitment to therapy.

Topical treatments are the first choice for mild psoriasis, and are also used adjunctively for resistant lesions in patients with more extensive disease (who are being treated with phototherapy and/or systemic medications).

Treatments most commonly initiated in general practice include:

- Topical skin therapies:
  - Corticosteroids
  - Calcipotriol
  - Dithranol
  - Coal tar/pine tar (see page 22 for a list of products)
- Scalp treatment
- Nail treatment

TOPICAL SKIN THERAPIES

Regular use of a thick emollient such as fatty cream is helpful to prevent cracking and irritation. Emollients may be supplemented by keratolytic or "descaling" agents, such as 10% urea cream or 2% salicylic acid in white soft paraffin.

Coal tar or pine tar emollient solutions in bathwater may be soothing, reduce itch and allow gentle removal of scale.

Corticosteroids

Topical corticosteroids are used by the majority of people with psoriasis, particularly those with limited disease. Corticosteroids have anti-inflammatory, immunosuppressive and antiproliferative properties.

Lower potency corticosteroids should generally be used for limited periods of time on the face and other areas of thin skin and in infants. Pimecrolimus is an alternative anti-inflammatory cream for psoriasis affecting the face or genitals, but is not effective on other sites where plaques are thick.

In other areas and in adults moderate or high-potency corticosteroids are generally recommended as initial therapy. Thick chronic plaques and plaques on hands and feet may require treatment with the highest potency agents (for a maximum of three weeks). Ointments are the best choice for dry, scaly plaques.

One of the drawbacks of corticosteroid therapy is associated tachyphylaxis, leading to decreased efficacy with continued use, and sometimes resulting in an acute flare-up when therapy is stopped. Once the lesions have improved, these effects can be minimised by switching patients to less potent formulations, or advising them to apply the medication less frequently, i.e. for two to three consecutive days each week. Another strategy is the use of corticosteroid-free times.

Calcipotriol ointment/cream/scalp solution

Calcipotriol (Daivonex, fully subsidised) is a vitamin D analogue that acts mainly by reducing the proliferation of keratinocytes. Treated areas become less scaly but may remain red.

It is not recommended for severe extensive psoriasis unless calcium status is carefully monitored, because of the risk of hypercalcaemia secondary to excessive absorption of calcipotriol.[6]

Calcipotriol cream or ointment (50 mcg/g) can be applied topically to chronic plaques twice daily. It may be reduced to once daily when the condition improves, however it is most effective if applied consistently twice daily.

Calcipotriol is not as well absorbed from the cream formulation as the ointment, so the cream is only used if there is a strong patient preference.

Safety of calcipotriol.[6] The most common adverse effect is localised skin irritation, which may lessen with continued use.

Calcipotriol is not usually recommended for use on the face because it may cause itching and erythema of the facial skin. However some patients are able to use the cream formulation successfully on the face. Irritation may be reduced with hydrocortisone cream. When patients are applying calcipotriol to other parts of their body, they should be advised to wash their hands after application, to avoid inadvertent transfer to the face.

Hypercalcaemia has been reported rarely at the recommended dose, however serum calcium and renal function should be monitored at three monthly intervals, if patients are applying larger quantities. To avoid the risk of hypercalcaemia, calcipotriol should not be used concurrently with calcium or vitamin D supplements.

Calcipotriol total dose should not exceed 5 mg/week, for example:

- 100 g of ointment or cream
- 60 mL of scalp solution plus one 30 g tube of cream or ointment
- 30 mL of scalp solution plus two 30 g tubes of cream or ointment

Direct sunlight and UV radiation may inactivate calcipotriol, so it is best applied after exposure.

Note that calcipotriol is poisonous to dogs.

Calcipotriol use in children. Calcipotriol (50 mcg/g) can be used in children aged six years and over but the datasheet indicates it should not be used for more than eight weeks.[6]

For children aged 6–12 years the maximum weekly dose should not exceed 50 g, while for children over 12 years the maximum weekly dose is 75 g.

Combined use of calcipotriol and other psoriasis treatments. When using multiple topical treatments, instruct patients to apply them at separate times. For example a topical corticosteroid may be used in the morning and calcipotriol used in the evening or calcipotriol may be used twice daily on weekdays, and the topical corticosteroid twice daily at weekends.[4, 5]

Calcipotriol should not be used at the same time as topical salicylic acid because it is inactivated by it.[4]

Dithranol[7]

Dithranol (Micanol cream, fully subsidised) belongs to the family of hydroxyanthrones which have been used in the treatment of psoriasis for more than a century. In the archaic Ingram regimen, a thick paste is applied to large plaques twice daily, under carefully applied dressings. It is then removed in a tar bath and the patient exposed to UV radiation. This regimen is too difficult for home use as dithranol is very irritating to normal skin and causes permanent stains on clothing and bathtubs.

A short-contact regimen may be suitable for well motivated patients with small numbers of large plaques of psoriasis.[4] Dithranol 1% cream can be applied once daily to the plaques, rubbed in gently until it no longer smears, and rinsed off (water only) after 10 minutes. The application time can be increased gradually over seven days to a maximum of 30 minutes.

It should not be applied to areas of thin skin (such as face, genitalia, intertriginous areas) and should be avoided in pregnancy, lactation and in children. Patients should be reminded that it can cause staining of skin, hair, fingernails (gloves are recommended when applying it), clothing and bed linen. If redness or burning occurs the treatment should be reduced or stopped.

Coal tar/pine tar

It is not well understood how coal or pine tar works for psoriasis, but it appears to have an anti-pruritic nature and is keratoplastic – i.e. it normalises keratin growth in the skin to reduce scale build up.[4]

Coal and pine tar are used mainly as a bath additive or scalp application. Coal or pine tar preparations or Egopsoryl TA gel (unsubsidised) can be directly applied to plaques. Coal or pine tar is often combined with salicylic acid 2 – 4% as a keratolytic. See page 22 for a list of products.

Best practice tip: LPC (coal tar solution) and/or salicylic acid may be prescribed in an emulsifying ointment base for chronic plaques on the trunk or limbs or in aqueous cream for application to the scalp. For example, a prescription may be written as: "LPC 10%, salicylic acid 2% in aqueous cream ad 100%. 200 g".

Scalp treatments

Ketoconazole (2% shampoo) may help some patients with diffuse mild scalp psoriasis, although it is more effective in seborrhoeic dermatitis.[4] It is used twice weekly and is best left on the scalp for several minutes before rinsing off.

Coal tar/pine tar shampoos (e.g. Neutrogena T/Gel, Polytar Plus, Fongitar, Ionil-T, Sebitar) are unsubsidised but generally more effective than ketoconazole shampoos. They are used one to two times per week (or as necessary) and are best left on the scalp for several minutes before rinsing off.

Coco-scalp (fully subsidised) is an ointment made from coal tar, sulphur, salicylic acid and coconut oil that can be applied to scaly plaques and left for a minimum of one hour before washing off. It can safely be occluded (e.g. wrapping the hair in plastic cling film) for several hours to achieve better de-scaling results.

Alternatively, in patients with coal tar intolerance or aversion, try salicylic acid 2–4% in aqueous cream, washed out after several hours.

Dithranol 0.1% can be applied to the scalp, after the hair has been washed to remove any grease and while the hair is still damp, and rinsed off (water only) after 30 minutes. It is unsuitable for blonde or grey hair as it may stain.

Corticosteroid scalp applications include (in increasing potency):

- Hydrocortisone-17-butyrate 0.1% (Locoid Scalp Lotion or Crelo)
- Betamethasone valerate 0.1% (Beta Scalp application)
- Mometasone furoate 0.1% (Elocon Lotion)
- Clobetasol propionate 0.05% (Dermol Scalp application)

Topical corticosteroids are applied to the scalp once or twice daily for short courses up to one month in duration, and then two to three days each week for maintenance if required. Overuse may cause psoriasis to worsen. Topical corticosteroids are particularly useful to reduce pruritus although alcohol-based lotions may sting on application and they are ineffective through thick scale.

Calcipotriol scalp solution (50 mcg/mL) can be applied topically to the scalp twice daily, reducing the frequency when improvement occurs. Dose of the solution should not exceed 60 mL per week. If cosmetically acceptable to the patient, calcipotriol in a cream base may be more effective than the solution.

Nail treatments

Treatment of nail psoriasis is often ineffective.[4] Topical scalp preparations (corticosteroids and calcipotriol) can be dripped or rubbed under affected nails and rubbed into the proximal nail fold. The patient should be advised that it may take months or longer for results as nails grow slowly (e.g. 1 mm per month).

SPECIALIST REFERRAL

Referral for phototherapy or systemic therapy should be considered for those with:

- More than 10% to 20% body surface involvement
- Generalised pustular psoriasis (mild, localised or palmoplantar pustulosis may not require referral)
- Erythrodermic psoriasis
- Psoriatic arthritis
- Localised recalcitrant psoriasis
- Psoriasis that significantly interferes with function e.g. on the palms or on the soles of feet

Specialist initiated treatments include phototherapy (narrowband UVB), methotrexate, acitretin,* ciclosporin and biological response mediators (e.g infliximab, adalumimab). Photochemotherapy (PUVA) has been discontinued in most centres except for use in localised hand and foot treatment.

Systemic therapies are not always effective and they may have potential serious adverse effects and risks.

*From 1st April 2009, acitretin has been available for prescription, fully funded on special authority application, by vocationally registered GPs.

Phototherapy

Narrowband UVB phototherapy is available in larger hospitals and some private dermatological practices. The patient stands in a cabinet containing 24 to 56 fluorescent bulbs, primarily emitting a wavelength of 311–312 nm, and is exposed to increasing doses two or three times weekly for 20 to 40 treatments. Thin plaque psoriasis responds best with about 85% of patients achieving 90% clearance. Prolonged remissions are common. Risks of this therapy include burns, presumed increase in skin cancer and premature aging of the skin.[5]

Methotrexate

Methotrexate is a folate antagonist and T-cell suppressive. It is effective for at least 60% of patients with psoriasis, taken as a weekly dose of 10 to 30 mg. Supplementary folic acid (5 mg once weekly) may reduce the risk of adverse effects such as gastrointestinal disturbance and mouth ulceration. Methotrexate is absolutely contraindicated in pregnancy and lactation. It also affects sperm and men should not father children while taking it. Significant liver disease, especially when resulting from alcohol misuse, precludes treatment. Other folate antagonists such as trimethoprim and sulfonamides must not be prescribed with methotrexate, because of an increased risk of marrow suppression.

Monitoring blood count, liver function and serum creatinine every one to three months is essential. Long term liver fibrosis and cirrhosis is a risk and additional specialist monitoring may be required.

Acitretin

Acitretin is a synthetic aromatic analogue of retinoic acid. It acts by normalising epidermal cell proliferation, differentiation and cornification. It is particularly useful for erythrodermic and pustular forms of psoriasis. The thickness and scaling of chronic plaque psoriasis usually improves on treatment. Like isotretinoin, it has recently become fully funded when special authority criteria are fulfilled. However there are significant adverse effects and risks from treatment.

The initial dose is 10–30 mg daily and the maintenance dose depends on clinical efficacy and tolerability.

Safety of acitretin.[8] Acitretin is highly teratogenic and must not be used by women who are pregnant, or of child bearing potential, unless strict contraception is used for four weeks before, during and for three years after treatment. Blood donation is prohibited during, and for one year after completion of therapy.

Alcohol must be avoided during treatment and for two months after treatment with acitretin, particularly by women of child bearing potential. This is because it can lead to the formation of etretinate, a retinoid that is stored in fat cells, and takes several years for the body to clear.

Acitretin is contraindicated in patients who are breastfeeding, or those with severely impaired renal or hepatic function, or chronically abnormal elevated blood lipid values.

Tetracyclines, methotrexate and vitamin A or other retinoids must be avoided.

Hepatic function and serum lipids should be regularly monitored throughout treatment. Acitretin may result in a reversible hyperlipidaemia requiring active management. People with diabetes may experience a change in their glucose tolerance (both improvement or worsening can occur) and so blood glucose levels may require more intensive monitoring in the early stages of treatment.

The most common adverse effects observed are dryness of the lips, epistaxis, peeling palms and soles, dry skin, asteatotic dermatitis and diffuse hair loss (which may be severe). These are symptoms of hypervitaminosis A. Many patients are unable to tolerate acitretin because of fatigue, myalgia, arthralgia or ophthalmic effects (e.g. blurred vision, impaired night vision).

Coal/pine tar preparations used for psoriasis

Coal tar can irritate the skin so patients need to experiment with different products. A higher concentration of coal tar is more effective but has a greater risk of irritation.

Preparations	Quantities and other ingredients
For application to scalp	
Coco-scalp ointment (S)	Coal tar solution 12%, sulfur 4%, salicylic acid 2%, coconut oil
Fongitar shampoo (NS)	Pyrithione zinc 1%, Polytar 1% (tar 0.3%, coal tar solution 0.1%, cade oil 0.3%, arachis oil extract of crude coal tar 0.3%)
Ionil-T shampoo (NS)	Salicylic acid 2%, coal tar solution 5%
Neutrogena T/Gel shampoo (NS)	Coal tar 0.5% (as solubilised coal tar extract 2%)
Polytar Plus shampoo (NS)	Coal tar 4%
Sebitar shampoo (NS)	Pine tar 1%, coal tar solution 1%, salicylic acid 2%
For bathing	
Polytar Emollient liquid (PS)	Polytar 25% (tar 7.5%, coal tar 2.5%, cade oil 7.5%, arachis oil extract of crude coal tar 7.5%), liquid paraffin in a water dispersible base
Polytar Liquid (NS)	Polytar 1% (tar 0.3%, coal tar solution 0.1%, cade oil 0.3%, arachis oil extract of coal tar 0.3%)
For application directly to plaques	
Egopsoryl TA gel (PS)	Coal tar solution 5%, sulfur 0.5%, phenol 0.5%, menthol 0.75%, allantoin 2.5%

Key: (S): fully subsidised; (PS): partially subsidised; (NS): not subsidised

Ciclosporin

Ciclosporin is rapidly effective for psoriasis in doses ranging from 2.5 to 5 mg/kg/day, taken for three to six month courses. However, as psoriasis tends to relapse quickly on discontinuing the drug, many people take it for prolonged periods risking hypertension, renal impairment, increased risk of skin cancer and other adverse effects.

Monitor blood pressure and renal function regularly, along with other routine tests (see BPJ 17, October 2008 "Monitoring DMARDs").

Biological response mediators

Several proteins and monoclonal antibodies that target T cells and TNF-α have come on to the market in the last decade and many new drugs are under investigation. Treatment is well tolerated and often very effective for psoriasis. Long-term studies are ongoing to determine safety, as these agents may increase granulomatous infections, such as tuberculosis and have been reported to exacerbate cardiac failure and demyelinating conditions (e.g. multiple sclerosis).[9]

Infliximab is a TNF-α inhibitor given as an intravenous infusion at weeks zero, two and six, then every eight weeks. It is reserved for very severe psoriasis and can be administered in both hospital or outpatient settings.

Adalimumab is also a TNF-α inhibitor, self-administered as a subcutaneous injection every two weeks. Adalimumab is now funded on Special Authority application (initially by a specialist) for small numbers of patients with severe psoriasis in whom current treatments are ineffective or contraindicated.

References:

1. National Psoriasis Foundation. About Psoriasis. Available from: www.psoriasis.org/netcommunity/learn01 (Accessed August 2009).
2. Griffiths CEM, Barker JN. Psoriasis 1. Pathogenesis and clinical features of psoriasis. Lancet 2007; 370(9583):263-71.
3. Federman DG, Shelling M, Prodanovich S, et al. Psoriasis: an opportunity to identify cardiovascular risk. Br J Dermatol 2009;160:1-7.
4. DermNet NZ. Psoriasis. 2009. Available from: www.dermnet.org.nz/scaly/psoriasis-general.html (Accessed August 2009).
5. Menter A, Griffiths CEM. Psoriasis 2. Current and future management of psoriasis. Lancet 2007;370(9583):272-84.
6. Medsafe. Calpipotriol. Medicine safety data sheets. Available from: www.medsafe.govt.nz/profs/Datasheet/d/Daivonexoint.htm (Accessed August 2009).
7. Medsafe. Dithranol. Medicine safety data sheets. Available from: www.medsafe.govt.nz/profs/Datasheet/m/Micanolcr.htm (Accessed August 2009).
8. Medsafe. Acitretin. Medicine safety data sheets. Available from: www.medsafe.govt.nz/profs/Datasheet/n/Neotigasoncap.htm (Accessed August 2009).
9. Medsafe. Infliximab. Medicine safety data sheets. Available from: www.medsafe.govt.nz/profs/Datasheet/r/Remicadeinj.htm (Accessed August 2009).