Management of Psoriasis in Primary Care

15

David Buckley

Key Points

- The exact cause of psoriasis is currently unknown. A combination of genetic, autoimmune, and environmental factors are likely to be involved.
- Psoriasis is diagnosed clinically as there is no definitive blood test; although histological features can be similar to other skin conditions, it has histological features that may confirm a diagnosis when in doubt.
- Psoriatic arthritis occurs in 15–25% of patients with psoriasis.
- Patients with psoriasis have a higher incidence of obesity, hypertension, hypercholesterolemia, diabetes, heart disease, depression, and the metabolic syndrome. They should be screened for these conditions.
- Although there is no "cure" for psoriasis there are many safe, effective treatments available.
- Regular application of a greasy moisturiser and avoiding soaps will help improve the appearance of the rash and will reduce scaling and itch.
- The first line treatment for adults with chronic, stable, plaque psoriasis on the body is usually a combination of calcipotrol (a Vitamin D analogue) and betamethasone (a potent topical steroid).
- Sunlight helps the majority of psoriasis patients but they must avoid burning. Sunbeds should be avoided. Alcohol in excess will usually make it worse.

What to Tell the Patient

- Psoriasis in not infectious, contagious or cancerous.
- It is usually considered genetic in origin. In up to 50% of cases another family member will also have psoriasis. It might skip generations. Some people may have the gene but never get the rash.

15.1 Introduction

Psoriasis is a chronic, relapsing, scaly, often itchy, immune-mediated, inflammatory skin condition which is usually easy to diagnose but can be difficult to manage. It affects approximately 2–3% of the population. It can occur at any age including in childhood but peak incidence is between 15 and 25 years, with a second, smaller peak between 50 and 60 years. It is equally common in males and females.

While most mild to moderate cases can be managed in general practice, patients with more resistant, severe or extensive psoriasis may have

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to be referred to a dermatologist for ultraviolet light, oral treatment or systemic therapy.

15.2 Clinical Features and Diagnosis

Psoriasis is diagnosed clinically as there is no definitive blood test and the histological features can be similar to other skin conditions. Psoriasis is considered mild in 60% of patients, moderate in 30% and severe in 10%. There are many different types of psoriasis (Table 15.1), the most common being **chronic plaque psoriasis** (Fig. 15.1). This causes well defined, red plaques that are covered with silvery scale. Plaques are distributed over characteristic body sites such as the extensor surfaces of the knees and elbows, the lower back and the scalp (Figs. 15.2 and 15.3). It can occur on any part of the body and itch may occur but is usually mild, unlike atopic eczema where the itch is severe. Nail changes are common and can be used as a clue to the diagnosis in atypical cases.

The most common **psoriatic nail** changes are onycholysis (lifting of the nail from the nail bed with subungual debris under the distal end of the nails) (Fig. 15.4), thickening and nail pitting (small dints on the surface of the nail plate as if they were scored with a pin) (Fig. 15.5). These occur in up to 50% of patients with psoriasis. Pitting can also be present in eczema and alopecia areata. Psoriatic nail changes can occasionally occur in isolation and it is sometimes necessary to send nail clippings to the lab for fungal stain and culture to distinguish psoriatic nails from tinea unguium.

Table 15.1 Types of psoriasis

Chronic plaque psoriasis
Small plaque psoriasis
Guttate psoriasis
Nail psoriasis
Flexural psoriasis
Palmoplantar, pustular psoriasis (also known as Palmoplantar pustulosis)
Generalised pustular psoriasis
Erythrodermic psoriasis
Psoriatic arthritis

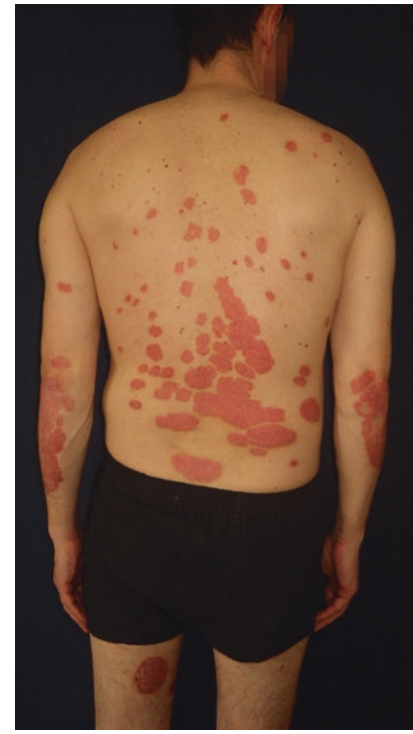

Fig. 15.1 Chronic plaque psoriasis in a 44-year-old male

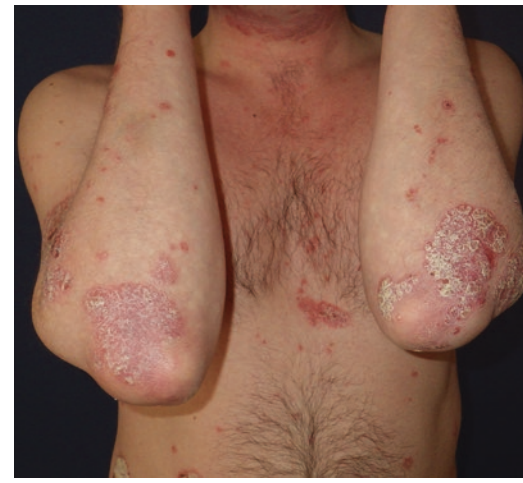

Fig. 15.2 Chronic plaque psoriasis

Flexural psoriasis (also called inverse psoriasis) can occur in isolation or in combination with other types of psoriasis. When psoriasis occurs in the flexures it usually has little or no scale because of friction and moisture present in the flexures

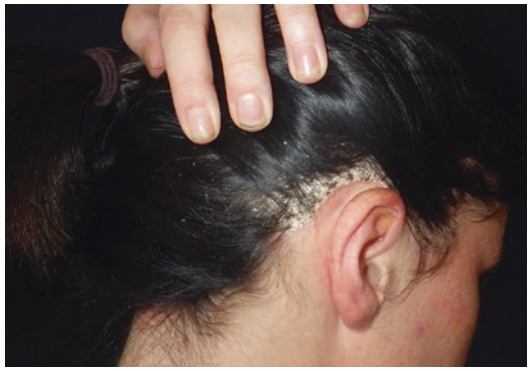

Fig. 15.3 Chronic plaque psoriasis

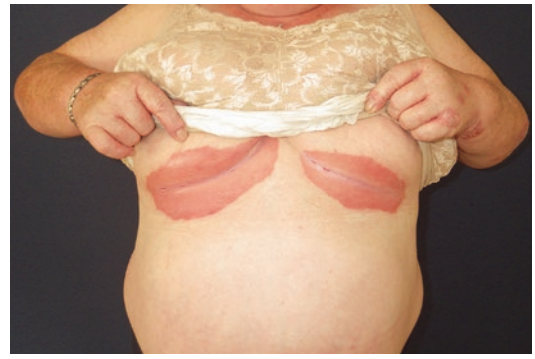

Fig. 15.6 Flexural psoriasis

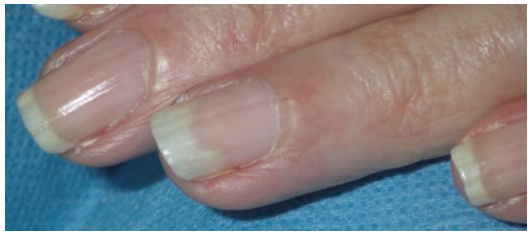

Fig. 15.4 Onycholysis in psoriasis

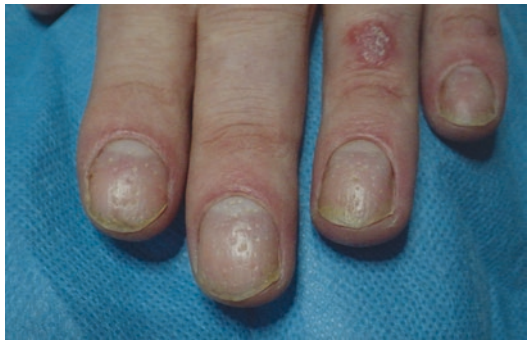

Fig. 15.5 Nail pitting in psoriasis

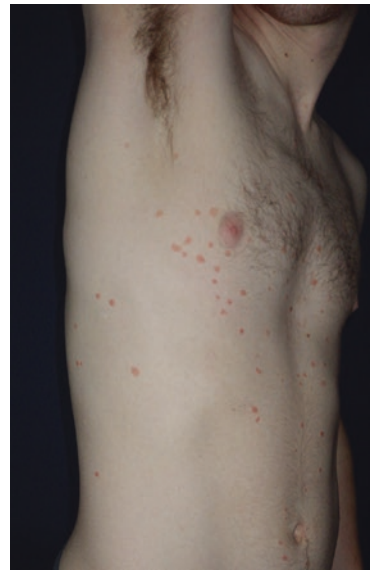

Fig. 15.7 Guttate psoriasis

(axilla, groin, peri-anal area, between the buttocks, under the breasts and on the lower abdomen under folds of fat in obese patients). The rash in flexural psoriasis is usually deeply red and very well defined, with a sharp cut off between the involved and uninvolved skin (Fig. 15.6). This helps distinguish it from other scaly flexural rashes such as tinea, candidiasis or intertrigo. Skin scraping for fungal stain and culture and a skin biopsy is sometimes required to make an accurate diagnosis of flexural psoriasis.

Guttate psoriasis is a usual presentation in younger patients (teens or early 20s) and presents with multiple small plaques of scaly skin scattered symmetrically throughout the body, usually sparing the face, scalp, flexures and nails (Fig. 15.7). Guttate psoriasis often occurs after a streptococcal sore throat but also may present for no apparent reason. Most cases will clear spontaneously within 6–12 weeks. Some patients may develop more attacks and approximately one

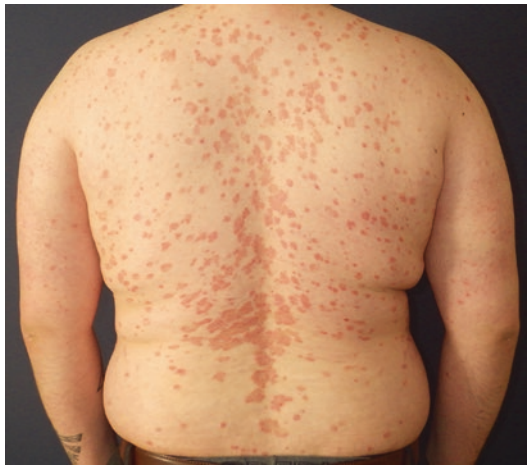

Fig. 15.8 Small plaque psoriasis

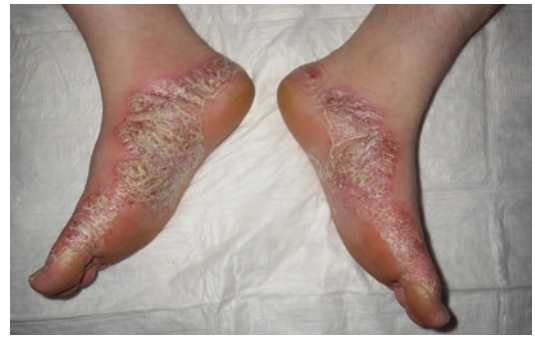

Fig. 15.9 Palmar planter pustulosis in a 32 year old smoker

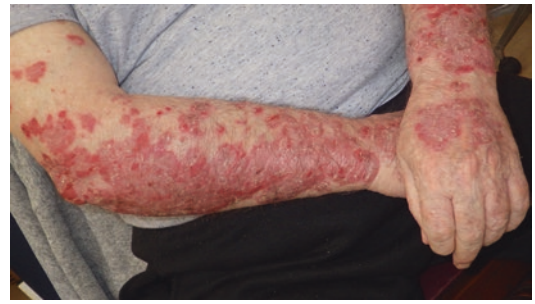

Fig. 15.10 Psoriasis in a patient on beta blockers

third of patients may go on to develop chronic plaque psoriasis.

Small plaque psoriasis, as the name implies, is made up of multiple, small plaques of red, scaly, skin which are well defined and scattered symmetrically throughout the body (Fig. 15.8). It can look similar to guttate psoriasis but, unlike it, it does not clear spontaneously in 6–12 weeks.

Palmer plantar pustular psoriasis (PPPP) is confined to the palms of the hands and/or the soles of the feet. It is now more commonly referred to as **palmoplantar pustulosis (PPP)** and may be a different disease than psoriasis. It is associated with psoriasis elsewhere in only 10–25% of cases. It mainly affects women in their 60s and 70s. It causes a red, well defined scaly rash with a sharp cut off between the involved and uninvolved skin. There are usually multiple small sterile pustules that are as a result of inflammation rather than infection (Fig. 15.9). This is one of the few skin conditions that is found more commonly in smokers. Stopping smoking may help clear the rash. It can rarely be associated with certain autoimmune diseases such as gluten sensitive enteropathy (celiac disease), thyroid disease and type 1 diabetes.

Generalised pustular psoriasis and **erythrodermic psoriasis** cause an extensive rash covering most of the body (Fig. 15.10). The patient is usually systemically unwell, with fever and flu-like symptoms. These conditions are considered a medical emergency and usually require hospital admission for treatment.

Psoriatic arthritis (PsA) is present in 15–25% of patients with psoriasis. The arthritis may start before (in 15% of PsA), during or after the skin manifestations appear. It usually starts in the fourth and fifth decades of life. Males and females are affected equally. PsA causes a seronegative, inflammatory arthritis and if left untreated may result in joint destruction in a similar fashion to rheumatoid arthritis (RA). It may affect only one joint or a number of joints. In the hands, the distal interphalangeal joints are more commonly involved followed by the feet, knees and low back (spondylitis).

Some patients can develop a sausage shaped finger or toe (dactylitis) and psoriatic nail changes on the affected finger. This distribution and X-ray often helps distinguish PsA from RA and other forms of inflammatory arthritis. Male patients, those who are overweight, those with HLA–B-27 antigen and patients with polyarticular disease do

less well. Apart from arthritis and spondylitis, PsA can cause fatigue and be associated with inflammation in other organs, such as the eyes and lungs. Treatment of more severe cases will require disease modifying drugs such as methotrexate or the newer biological agents.

15.3 Differential Diagnosis

Chronic plaque psoriasis is usually fairly obvious from the classical clinical features of red, scaly, well defined plaques in the typical psoriasis distribution. Atypical cases or partially treated disease may be more difficult to diagnoses and psoriasis can be confused with seborrhoeic dermatitis, a fungal infection (tinea curis), contact allegic or irritant dermatitis, discoid eczema, pityriasis rosea, secondary syphilis or rare conditions such as the rash of HIV or mycosis fungoides.

15.4 Pathophysiology

The exact cause of psoriasis is currently unknown. A combination of genetic, autoimmune, and environmental factors are likely to be involved (Fig. 15.11). Thirty to 50% of patients with pso-

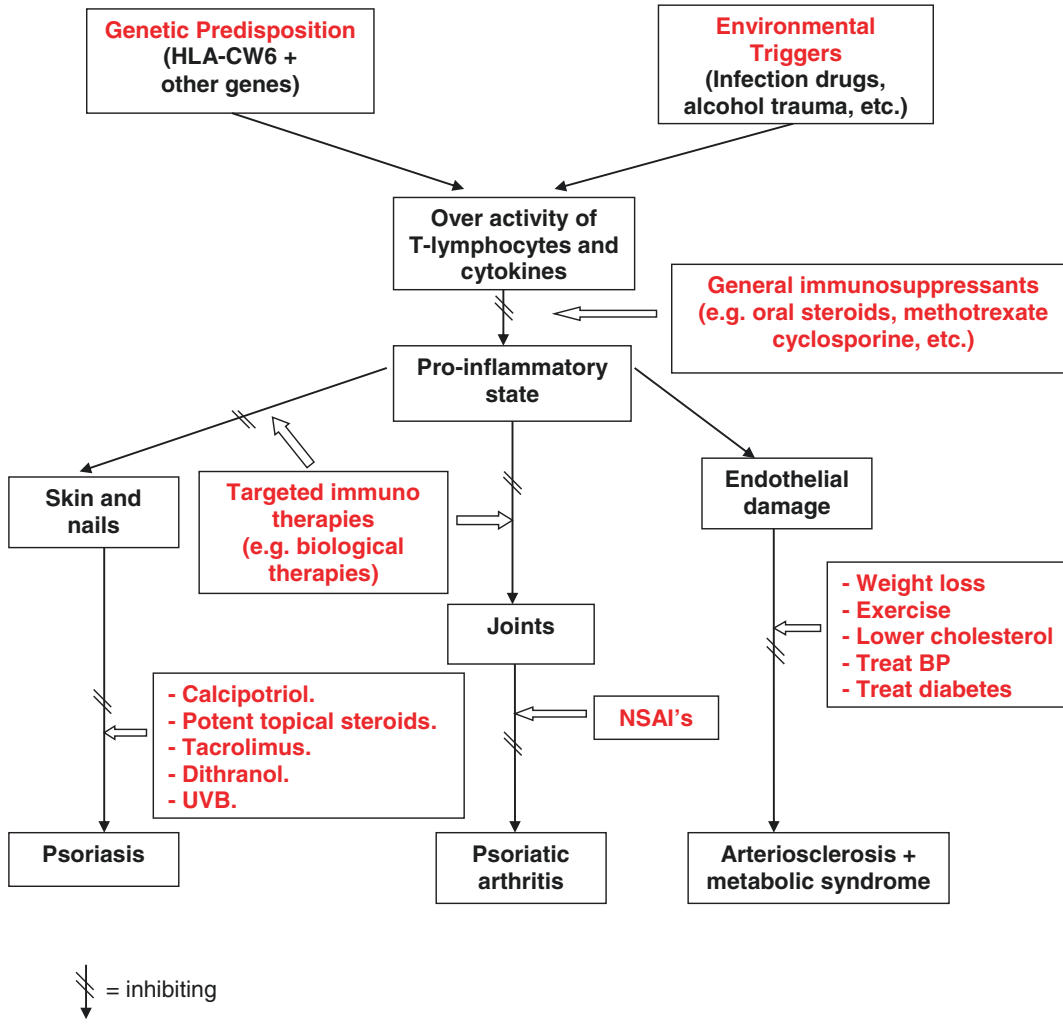

Fig. 15.11 Aetiology of Psoriasis

riasis will have a first degree relative with psoriasis. The risk of developing psoriasis is 20% for those with one parent with psoriasis and 75% if both parents have psoriasis.

Psoriasis is perpetrated by the body's own immune cells, particularly the T-lymphocytes and cytokines. For whatever reason, these cells, which are designed to defend the body from external noxious agents, attack healthy tissue and cause inflammatory changes in the skin, nails or joints in genetically predisposed patients. Our understanding of the molecular dynamics that drives psoriasis is still evolving, with a whole raft of cytokines messengers implicated in the immune dysfunction, especially the tumour necrosis factor alpha (TNFa) and some interleukins (IL-23 and IL-17) and cytokynes. Several of these cytokines have become targets for some of the newer novel biological therapies for psoriasis and PsA.

Overactive T-lymphocytes trigger an immune response that causes dilation of blood vessels and an increased production of healthy skin cells. This triggers an ongoing cycle in which new skin cells move to the outermost layer of skin too quickly—in days rather than weeks. Dead skin can not slough off quickly enough and build up in thick, scaly patches on the skin's surface. This rapid turnover of cells usually does not stop unless treatment interrupts the cycle.

There can be various environmental triggers including infection (*Streprococcal* throat infection or pytirosporum in the skin), smoking, alcohol in excess, stress, trauma, and acute withdrawal of potent topical or systemic steroids. Psoriasis is not caused by food allergy. Rare cases have been linked with coeliac diseases and it may be worth considering a gluten free diet in patients with positive coeliac antibodies [1]. If vitamin D levels are low it might be worth considering vitamin D supplements provided the patient is not also being prescribed topical calcipotriol (a vitamin D analogue that is found in "Dovonex®", "Dovobet®", "Enstilar®"). A healthy diet, rich in oily fish, green leafy vegetables, carrots, tomatoes and fresh fruit may help [2]. Recent studies have suggested that a Mediterranean diet may help psoriasis [3].

Certain prescription medication can precipitate or aggravate psoriasis or cause a psoriasiform (psoriasis like) eruption and these may have to be stopped or substituted if the psoriasis proves difficult to control [4] (Table 15.2). Alcohol in excess is also a common cause of psoriasis flare-ups. Patients should be encouraged to avoid alcohol or keep it to an absolute minimum (less than 14 units a week). Sunlight can help most (90%) of patients with psoriasis provided they do not get sunburn which may worsen psoriasis as a result of the **Köbner phenomenon**. This response, first described by Heinrich Koebner in 1876 is also called the isomorphic response, or koebnerization. It refers to the formation of psoriatic lesions in uninvolved skin of psoriatic patients after cutaneous trauma. This might explain why psoriasis is so common on the elbows and knees. This isomorphic phenomenon can occur in other diseases such as warts, vitiligo, lichen planus, and Darier disease.

As psoriasis is a chronic inflammatory condition these patients are at increased risk of developing the **metabolic syndrome** (Table 15.3). The metabolic syndrome is a cluster of risk factors that increases the overall risk of cardiovascular disease and type 2 diabetes. The interaction between the various components of the metabolic syndrome contributes to the development of a pro-inflammatory state and a chronic, subclinical vascular

Table 15.2 Drugs that may trigger or aggravate psoriasis or cause an psoriasiform eruption [1]

• Alcohol in excess
• Anti-malarials (e.g. chloroquine and hydroxychloroquine)
• Lithium
• Beta Adernegic Antagonists (e.g. Atenolol®)
• Angiotensin-converting enzyme inhibitors (ACE inhibitors)
• Sudden withdrawal of potent topical or systemic steroids
• Antibiotics (e.g. tetralycline)
• NSAIDs
• Interferon
• Terbinaifine
• Benzodiazepines
• Nicotine may aggravate palmoplantar, pustular psoriasis (also known as palmoplantar pustulosis)

Table 15.3 The metabolic syndrome[a]

To have the metabolic syndrome a patient must have three or more of these characteristics:
Obesity: a waist size greater than 35 inches for women and 40 inches for men. Certain genetic risk factors, such as having a family history of diabetes or being of Asian descent, lower the waist circumference limit: If you have one of these genetic risk factors, waist size limits are 31–35 inches for women and 37–39 inches for men.
Abnormal blood cholesterol levels: either elevated triglycerides (a type of fat in the blood) or low levels of HDL (the "good cholesterol")
Hypertension
Diabetes or insulin resistance

[a]According to guidelines developed by the National Cholesterol Education Program (USA), with modifications by the American Heart Association

inflammation which results in atherosclerosis. The metabolic syndrome confers a five-fold increase in the risk of type 2 diabetes mellitus and two-fold the risk of developing cardiovascular disease over the next 5–10 years. Patients with the metabolic syndrome are at two to four-fold increased risk of stroke, a three to four-fold increased risk of myocardial infarction, and two-fold the risk of dying from such an event compared with those without the syndrome, regardless of a previous history of cardiovascular events [5]. First line treatment of the metabolic syndrome is life style modification including weight loss, a low sugar, low fat diet and more aerobic exercise. Further studies are needed to determine whether drugs such as TNFa inhibitors could also improve associated metabolic syndrome or cardiovascular risks.

Depression is more prevalent in people with psoriasis. Patients with severe psoriasis are three times more likely to suffer depression compared to controls [6]. Treatment of psoriasis may help the patient's mood.

15.5 Topical Treatments

Not all cases of psoriasis require treatment. Many patients with localised psoriasis on their elbows, knees and or scalp can learn to live with their condition by covering it up with appropriate clothing or manage it with simple moisturisers. Others can be very self-conscious even with limited disease, which may interfere with their quality of life and affect their work, social life, sex life or hobbies. For some, going to the swimming pool, a changing room or the beach can be a nightmare.

Fortunately, most patients with mild to moderate disease can now be managed safely and effectively in general practice. The first step in the management of psoriasis is making the patient understand that this is a chronic condition. They need to know they will have to incorporate routines of care into their daily life. The plaques need to be **moisturised** liberally with a safe, greasy moisturiser after baths or showers, such as Emulsifying ointment, "Epaderm ointment®" or Paraffin gel. This will reduce the silvery scale and make the psoriasis look and feel better. Moisturisers also aid penetration of more specific psoriasis treatments. A tar-based shampoo will help lift off the scales on the scalp and if there is co-existing dandruff, a good anti-dandruff shampoo such as "Nizoral®" or "Stieprox®" shampoo should be used two or three times a week. Very thick scalp scales can be removed with a tar and salicylic acid ointment such as "Cocois®".

Guttate psoriasis is usually self limiting and should be treated symptomatically. Simple emollients may be sufficient in mild cases. If there is troublesome itch, a potent topical steroid may help on the body. Coal tar preparations such as "Exorex® 5% lotion" or urea containing creams may also help ease itch and reduce the scale. For more troublesome guttate psoriasis phototherapy can be very helpful.

The first line treatment for adults with chronic, stable, plaque psoriasis on the body is usually with a combination of **calcipotrol (a Vitamin D analogue) and betamethasone**, (a potent steroid, the same as is found in "Betnovate®") (e.g."Dovobet®" ointment or gel or "Enstilar Cutaneous Foam®"), (Fig. 15.12).The foam preparation is more cosmetically acceptable. In clinical trials, response rates were higher with "Enstilar®" foam than with an ointment or gel formulation of calcipotriol/betamethasone ("Dovobet®") and were achieved earlier [7]. The gel formulation can be used on the scalp. The ointment preparation is greasier to use.

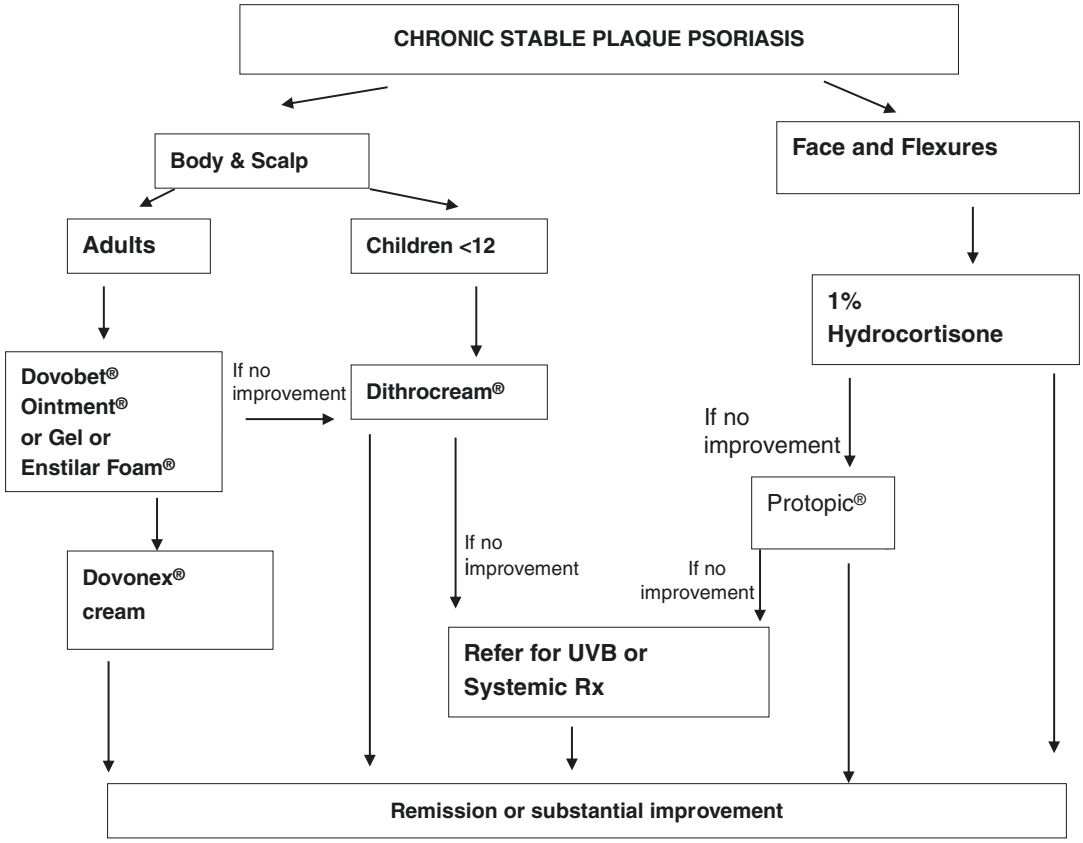

Fig. 15.12 Psoriasis flow chart

The advantage of "Dovobet®" and "Enstilar Cutaneous Foam®" is that it is relatively quick to clear the psoriasis plaques and can be used in a convenient once a day application, which usually does not burn, sting or stain the skin. The disadvantages are that it is expensive and does not work on all patients with psoriasis. "Dovobet®" is not licensed for people under 18 years of age, although it can sometimes be used off licence in teenagers from the age of 12–18. The maximum dose in adults is 15 g a day, or 100 g a week for acute management of psoriasis in the first month of treatment and it should not be used on more than 30% of body surface area. It is applied once daily for 4 weeks and by this stage the silvery, scaly plaques should have faded out to a red, macular rash. If necessary, "Dovobet®" can be continued three times a week for at least another month. There is experience with repeated courses of "Dovobet®" up to 52 weeks. If it is necessary to continue or restart treatment after 4 weeks, treatment should be continued after medical review and under regular medical supervision to ensure the patient does not develop any potent steroid side effects. Maintenance treatment, if required, can be continued with "Dovonex® cream" or "Silkis® ointment" ("Silkis®" contains calcitriol, a vitamin D analogue like calcipotrol) which can be used daily until the psoriasis is fully cleared or improved to an acceptable level.

"**Enstilar Cutaneous Foam®**" is applied to the affected area (not exceeding 30% of total body surface area) once daily for 4 weeks, with a maximum daily dose of 15 g (0.5 g covers the equivalent of an adult hand). One 60 g can should therefore last at least 4 days. 0.5 g corresponds to the amount administered from the can if the actuator is fully depressed for 2 seconds.

More recently these combinations of **calcipotrol and betamethasone** ("Dovobet®" or "Enstilar®") have obtained a licence for long-term use. It might be preferable to wean patients off these potent steroid combinations after 1–3 months and save it for relapses of psoriasis. Using potent steroids long term (greater than 3 months) may cause skin atrophy (which looks very like partially treated psoriasis) and possibly systemic absorption with adrenal suppression. A rebound flare of psoriasis can occur if these potent steroid combinations are stopped suddenly. "Dovobet®" and "Enstilar®" should never be applied to the face or flexures in adults and it is not suitable for children under the age of 12 years.

"Dovobet® gel" is useful for **scalp psoriasis** where it should be rubbed into the plaques and left on overnight. It can be removed in the morning by applying a shampoo to the gel on the dry scalp for a few minutes to soften the gel before wetting the hair and lathering up the shampoo. The gel will then easily wash out once the hair is rinsed. Daily hair washing can be tedious for some people. Applying "Dovobet® gel" to the scalp daily for the first week or two and then three times a week until the psoriasis has cleared may be more convenient (this usually takes 1–3 months).

For more resistant scalp psoriasis,"**Etrivex Shampoo®**" which contains a super potent topical steroid (clobetasol propionate which is also found in "Dermovate®") may help in adults, but treatment should be limited to 1 month and then weened down.

These complicated treatment regimes for applying "Dovobet gel®" or ointment to the body and scalp are difficult to explain to a patient during the course of routine general practice consultation. Written instructions are essential and follow-up monthly for the first few months is useful to encourage compliance and to monitor progress. Advice by a nurse trained in the use of these products is very useful in helping patients manage their psoriasis.

Patients who have only very small plaques of psoriasis in localised areas of the body may not want the expense of buying a large tube of "Dovobet®" or "Enstilar®". In these circumstances, it can be more cost effective to prescribe "Dovonex®" in the morning and a potent topical steroid (e.g. "Betnovate® ointment"") at night to all the plaques on the body for 1 month. The patient can then be weaned off the steroid ointment by using it three times a week in the second month and stopping it altogether in the third month of treatment while continuing with "Dovonex®" daily until the psoriasis is cleared or well controlled. "Dovonex®" cream can be used with a moderately potent® topical steroid (e.g. "Eumovate® Ointment") in children from 6 to 12 years old in a similar fashion.

While "Dovobet®" and "Enstilar®" are clean and relatively simple to use, experience shows that they only work in approximately 60–70% of patients with chronic stable plaque psoriasis; besides, they are not licensed for children under the age of 18. In these patients, **dithranol** is extremely effective, although more messy and time consuming to use. Although not commonly prescribed nowadays, dithranol (also called anthralin) is one of the most effective preparations available for treating chronic plaque psoriasis. Dithranol has been used for more than 100 years in the treatment of psoriasis. It is a chemical of plant origin, taken from the bark of a South American tree. Its precise mode of action is still to be confirmed, although it has been shown to inhibit DNA replication, keratinocyte hyperproliferation, granulocyte function and, in addition, may exert an immunosuppressive effect. Free radicals, histamine, eicosanoids and platelet-activating factor have been shown to be involved in dithranol-induced dermatitis and the oxidation products of the drug are responsible for the staining.

The "Short Contact Treatment" using a preparation called "Dithrocream®" is the most convenient way to use dithranol for home treatment. "Dithrocream®" comes in five different strengths from 0.1% up to 2%. Patients should be instructed to start with the weakest strength and to apply it to the plaques on the body and scalp (not for the face or flexures) for 30 minutes daily for 1 week. It can be washed off in the shower but patients should be warned that it will stain everything, including clothing, towels and the skin. Each week, the strength should be increased until the psoriasis clears. If the skin gets red or sore (usu-

ally at the higher strengths) the treatment should be stopped for a few days and an emollient applied until the soreness settles. Then the treatment can be restarted but at the next strength down. The best way to tell when the psoriasis is cleared and when to stop "Dithrocream®" is to get the patient to rub their hand over the affected area. If it is smooth like the surrounding skin, although stained with dithranol, it can be stopped (Fig. 15.13a, b). If it is rough, they should continue short contact treatment with dithranol until smooth.

Once "Dithrocream" is stopped, the staining will fade spontaneously over the following few weeks, or this can be accelerated by applying a Tar based ointment such as "Coal Tar and Urea" or "Exorex Lotion®", rubbing it downwards daily to the stained area (Fig. 15.14). Tar ointments are smelly, sticky and not usually popular with the patients. When prescribing dithranol, written instructions are essential for the patient and a trained nurse can ensure good compliance and good success. When "Dithrocream®" is used properly it can clear up to

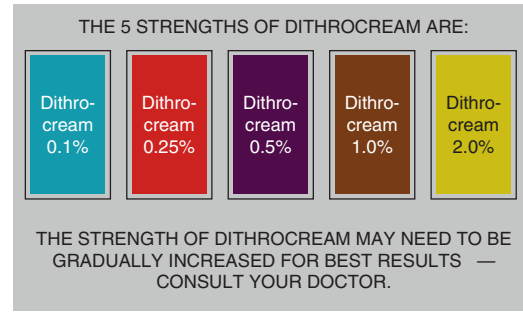

Fig. 15.14 The various strengths of "Dithrocream®"

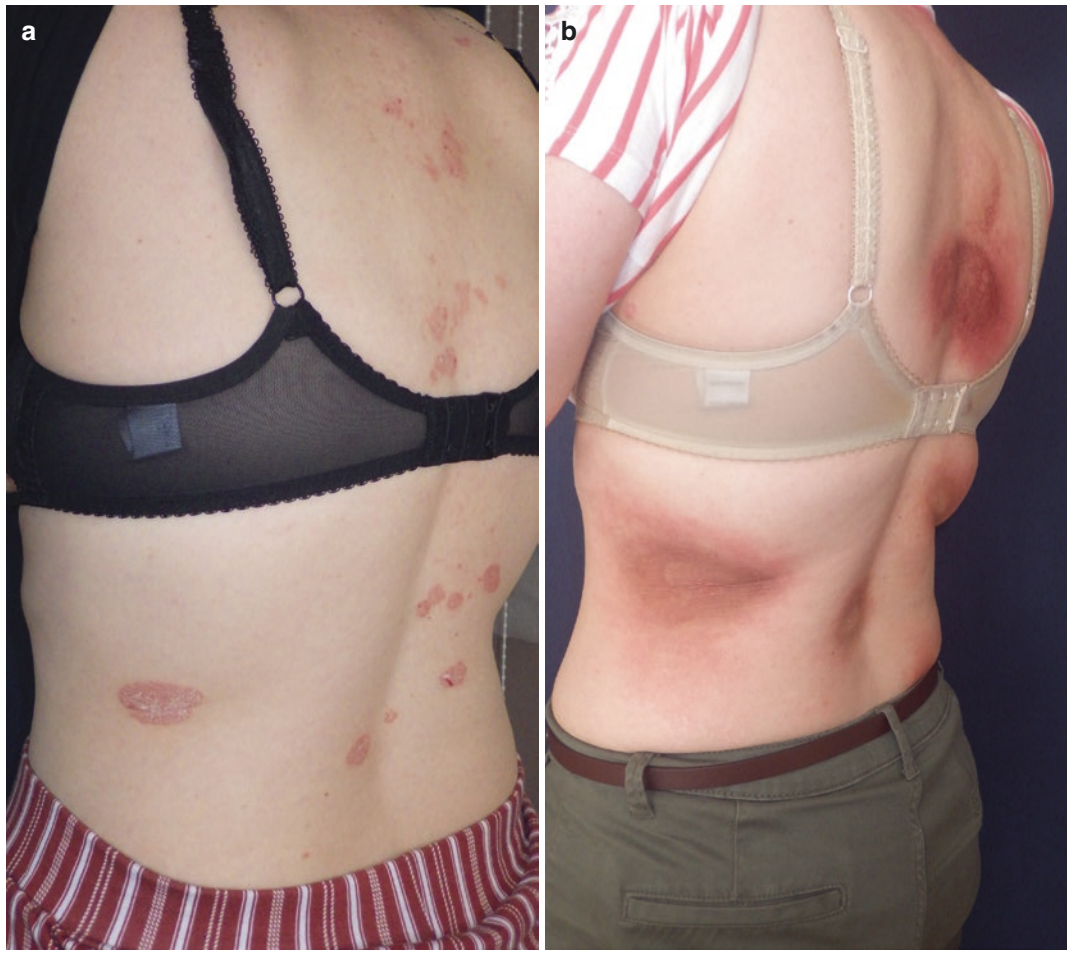

Fig. 15.13 (**a**) Small plaque psoriasis before treatment (**b**) Same patient immediately after 4 weeks of dithranol treatment

80–90% of adults and children with mild to moderate, stable plaque psoriasis in approximately 6 weeks and can result in longer remissions than other treatments, such as "Dovobet®" and "Dovonex®". It is however more time consuming and messy to apply and wash off [8].

For more troublesome chronic plaque psoriasis, **combining treatments** may be helpful. For example, dithranol and tar is a good combination, or "Dovobet®" and dithranol can be used simultaneously. Patients with severe psoriasis should be referred for ultraviolet light therapy or systemic treatments. The sun can help psoriasis in most patients and may augment the therapeutic response from topical treatment such as "Dovobet®/Dovonex®" or dithranol. The national health services could consider paying for a cheap 2 week package holiday to the sun for psoriasis patients, which might work out cheaper than 6 weeks phototherapy!

Psoriasis on the **face and flexures** is usually less thick and scaly than on other parts of the body and will often respond to 1% hydrocortisone ointment (Figs. 15.15 and 15.16). If there are any signs of co-existing seborrhoeic dermatitis, then 1% hydrocortisone combined with an imidazole anti-fungal like "Daktacort®", "Canesten HC®" should help. For more resistant psoriasis on the face or flexures, tacrolimus ("Protopic®") can be extremely safe and effective, although it is not licensed for this indication. It can cause a transient redness and soreness of the skin during the first week of treatment in 50% of patients and it is important to warn patients of this possibility.

Nail psoriasis is very difficult to treat. Using a potent topical steroid gel or lotion (e.g. "Betnovate Scalp Application®" or "Dovobet Jel®"), which can be flooded under the distal end of the nail, may help some cases. If the nail changes are severe and the patient is demanding treatment, systemic treatments are the most successful way to manage this problem (see below).

Palmoplantar pustulosis (PPP) may not be a true form of psoriasis but it may respond to a potent topical steroid or a steroid/calcipotrol combination (Fig. 15.17). More severe cases may require a super potent topical steroid such as clobetasol propionate which is also found in "Dermovate®". Patients with PPP should moisturise liberally, avoid soaps and other irritants,

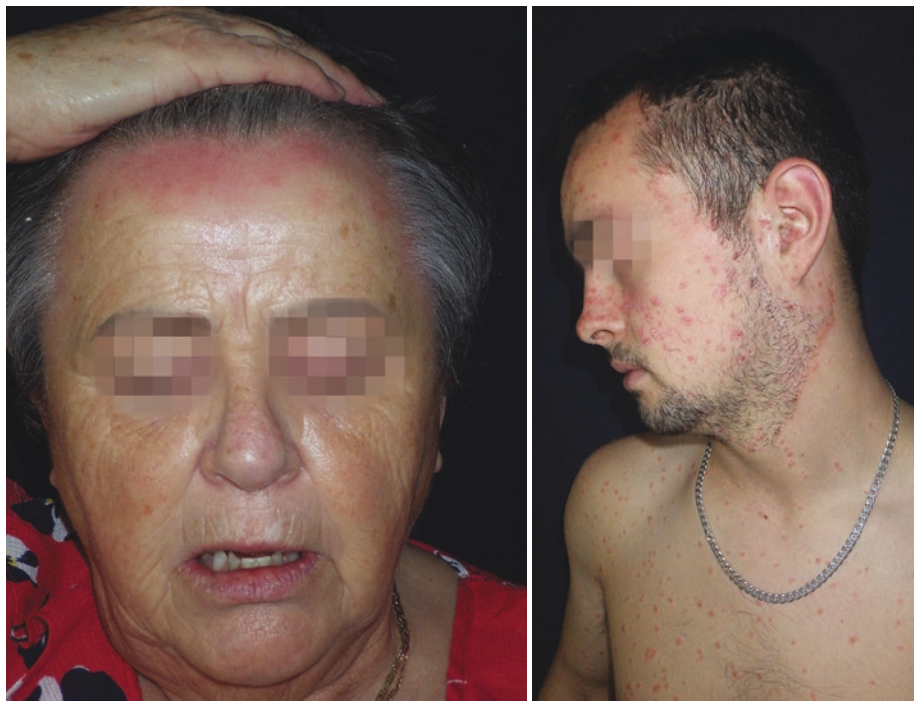

Fig. 15.15 Psoriasis of the face (left image) and on face, neck and thorax (right image)

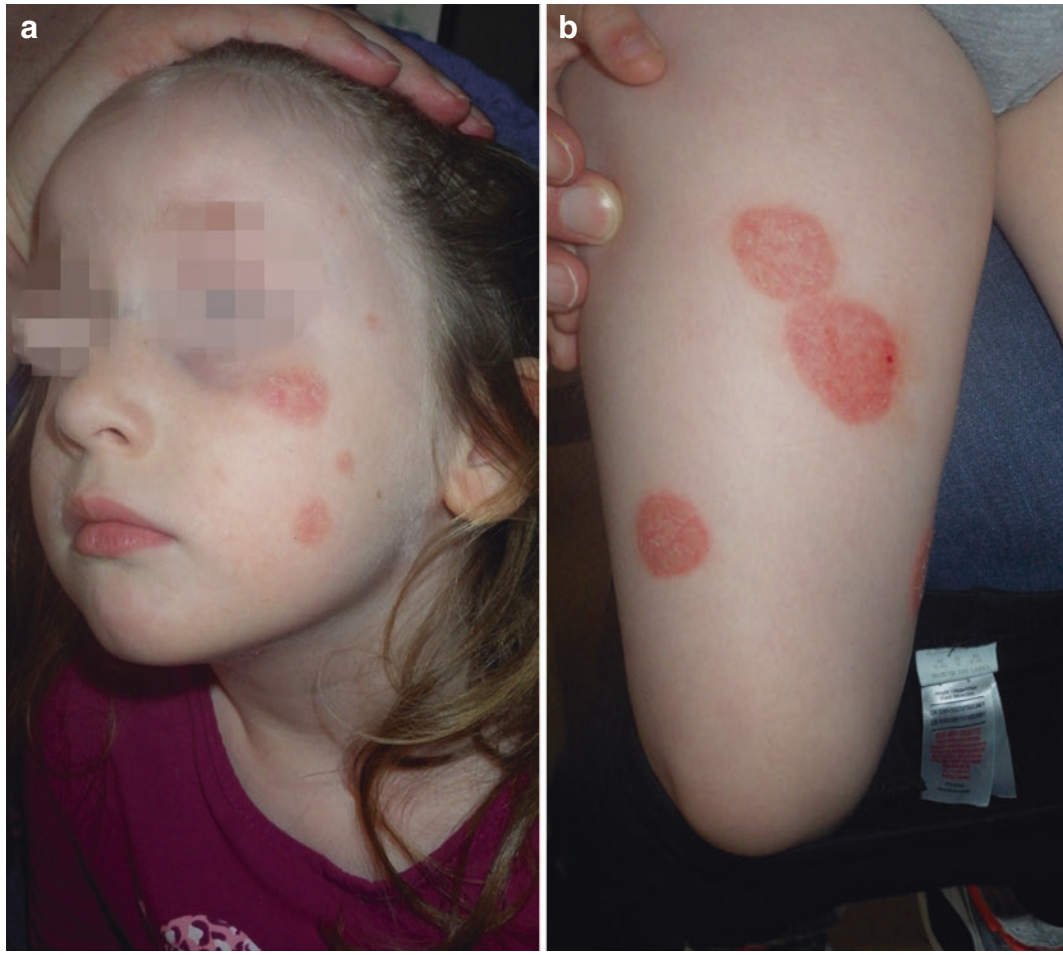

Fig. 15.16 (**a**) Psoriasis on a child's face (**b**) Psoriasis on the same child's leg

keep their hands dry as much as possible by the careful use of cotton and rubber gloves and avoid smoking.

15.6 Systemic treatments

More **severe or resistant cases** of psoriasis may need referral to a dermatologist for ultraviolet light therapy (narrowband UVB or PUVA) or **systemic treatment** with drugs such as methotrexate, retinoids (acitretin), fumaric acid esters or cyclosporine.

Apremilast ("Otezla®") is an oral PDE4 inhibitor, indicated for the treatment of moderate to severe chronic plaque psoriasis in adult patients who failed to respond to or who have a contraindication to, or are intolerant to other systemic therapies including cyclosporine, methotrexate or psoralen and ultraviolet-A light (PUVA). It should be initiated by specialists experienced in the diagnosis and treatment of psoriasis or psoriatic arthritis. The dose has to be titrated up gradually from 10 mg OD up to 30 mg BD over a week. During pivotal trials the greatest improvement was observed within the first 24 weeks of treatment. Side effects of apresilast in psoriasis clinical studies included nausea and vomiting (in up to 30% of patients), depression, weight loss, diarrhoea, upper respiratory tract infection and headache. It is not licensed for children under the age of 18 years and cannot be used in pregnancy.

If patients do not respond to these treatments they may be eligible for the newer, more expen-

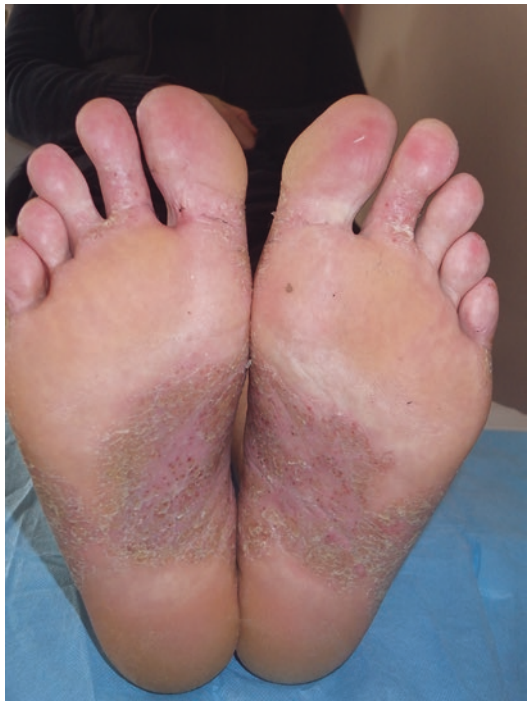

Fig. 15.17 Plantar psoriasis on a patient with palmoplantar psoriasis

sive **biological treatments** such as TNF-alpha antagonist. These are large molecules and most are given by subcutaneous injections at home or IV infusions in hospital every few weeks. Their introduction has revolutionised the management of severe psoriasis in recent years.

Biological therapy (also known as targeted immune modulators) has developed at a remarkable rate with indications for a range of diseases within gastroenterology, rheumatology, dermatology, oncology and ophthalmology. Biologic agents are a set of engineered proteins that possess pharmacologic activity and can be extracted from animal tissue or, much more commonly, synthesised in large quantities through recombinant DNA techniques. Biologic molecules (antibodies, fusion proteins or recombinant cytokines) can be designed to either mimic the actions of normal human proteins or to interact with circulating proteins or cellular receptors to modify the immune responses in psoriasis [9].

Biologics used to treat psoriasis include adalimumab ("Humira®"), etanercept ("Enbrel®"), infliximab ("Remicade®"), secukinumab ("Cosentyx®"), and ustekinumab ("Stelara®"). Because they are very expensive and may cause immunosuppression, these biological therapies are restricted to hospital use only and are used only in severe, extensive, resistant psoriasis and in psoriatic arthritis.

15.7 Conclusion

Psoriasis can run an unpredictable course. Some patients can get one, self limiting break out of the rash which may never recur again. Others can have chronic or relapsing flare-ups of their psoriasis all their life. Psoriasis may be very limited and mild in some patients, yet extensive and severe in others. Although there is as yet no cure for psoriasis, almost all patients can be managed by simple topical treatments at home while some require hospital based treatment such as UVL or systemic therapies. The improved understanding of the pathophysiology of psoriasis has led to the development of a number of targeted biological treatments which are extremely effective. Many of these new therapies are very expensive and can have unpredictable side effects, especially in relation to their immunosuppressive effects.

It is important to reassure patients that psoriasis is not contagious, infectious or cancerous but, most of all, that is a chronic condition.

Patients with psoriasis have a higher incidence of obesity, hypertension, hypercholesterolaemia, diabetes, heart disease, depression, and the metabolic syndrome and they should be screened for these conditions. Care should be taken on the choice of medications for these conditions as some may precipitate or aggravate psoriasis.

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