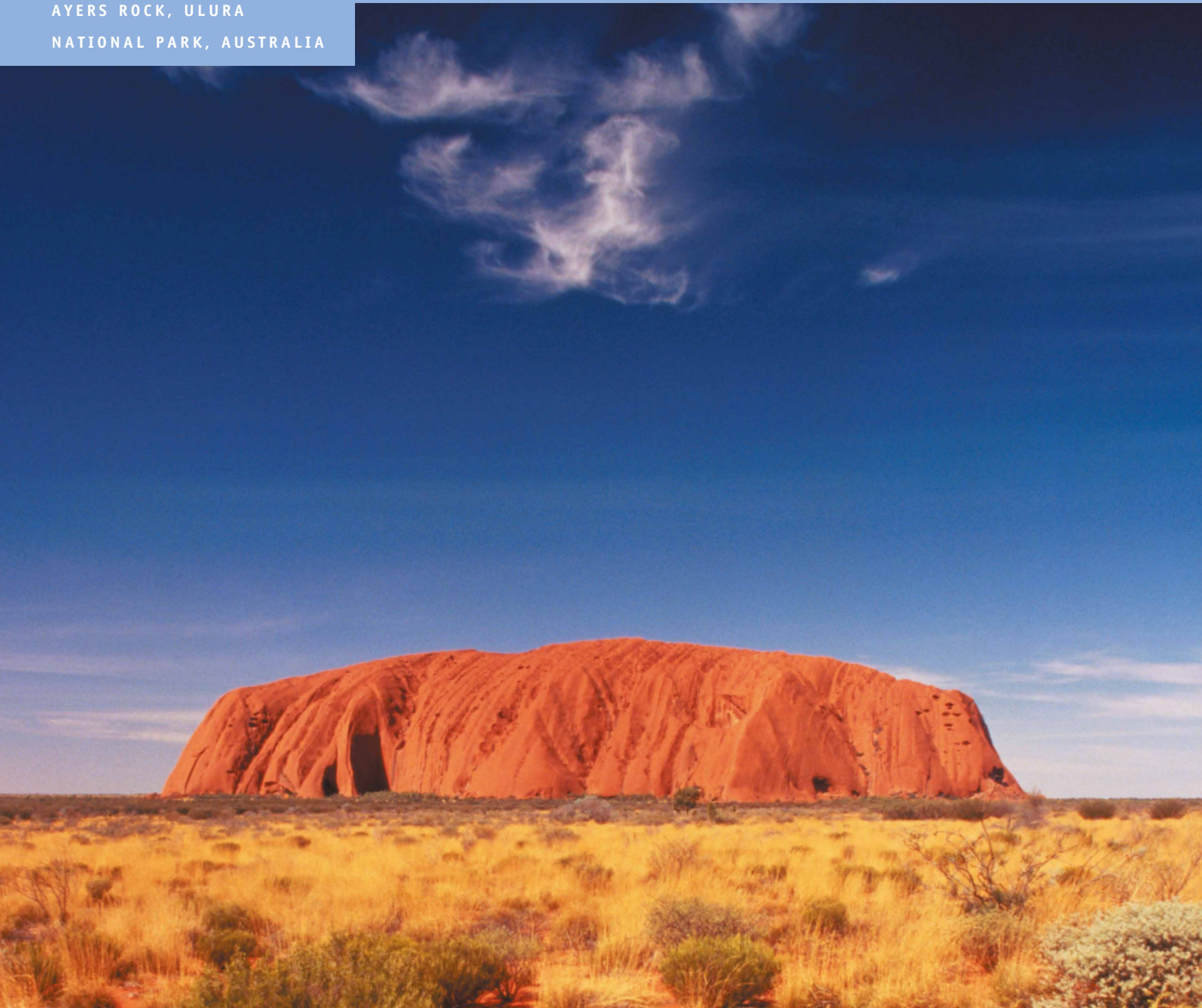


Number 2 in a series of 7

CORE TUTORIALS IN DERMATOLOGY FOR PRIMARY CARE

PSORIASIS

AYERS ROCK, ULURA
NATIONAL PARK, AUSTRALIA



UPDATED CHAPTER
OCTOBER 2021

‘Plaque’ a raised lesion where the diameter is greater than the thickness

CORE TUTORIALS IN DERMATOLOGY FOR PRIMARY CARE

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CHAPTER TWO: PSORIASIS

CHAPTER THREE: SKIN INFECTION AND INFESTATION

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TESTS AND TECHNIQUES – WHICH, WHEN AND WHY?

A SEQUEL TO THE CORE TUTORIALS IN DERMATOLOGY FOR PRIMARY CARE

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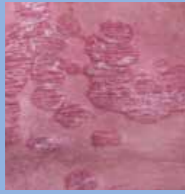
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“Psoriasis is one of the most important dermatoses for its frequency and for the multiplicity and range of its signs and for its resistant character”. – *Jean Darier (1856-1938)*

The observations of this French doyen of dermatology would be as valid now as they were in his day!

PSORIASIS

Psoriasis from the Greek ‘to itch’ is unarguably one of the major dermatoses affecting approximately 2% of the population and accounts for 10 – 15% of all hospital dermatology appointments. Psoriasis, when it presents classically with positive family history, well known sites of predilection and a level of symmetry that appears almost mathematically precise, is not diagnostically challenging but it is a condition truly protean in its manifestations and can present problems to even the most experienced physician. It can be a struggle to differentiate between seborrhoeic dermatitis and isolated scalp psoriasis, nail dystrophies, flexural and genital involvement, the differential diagnosis of facial redness, a single scaly plaque, cross over conditions such as lichen planus and eczema; the list although not endless is long! It is an erythematous squamous disorder of complex aetiology, as yet not fully understood, affecting the sexes equally.

There is a large subpopulation of genetically predisposed individuals whose psoriasis is triggered by factors both known and unknown. Inheritance is polygenic but one possible likely pattern is autosomal dominance with incomplete penetrance. There are a number of HLA associations. There is a positive family history in one third of sufferers. This is less likely in late onset psoriasis. If one parent is affected there is a 10 – 25% risk to the child, and if both parents are affected the risk increases to 50 – 60%. There are peaks of incidence in early adulthood and late to middle age, with the mean age of presentation being 28. An early age of onset is a poor prognostic factor. Well recognised triggers include streptococcal sore throat, particularly in relation to guttate psoriasis in young patients. Certain drugs including beta-blockers, indometacin and chloroquine have been implicated, but there is evidence only for lithium. “Stress” is another trigger.¹ I personally remember a dramatic example, when a 90 year old gentleman presented for the first time ever with a very extensive psoriasis only a few weeks after his wife had been tragically killed in a car accident.

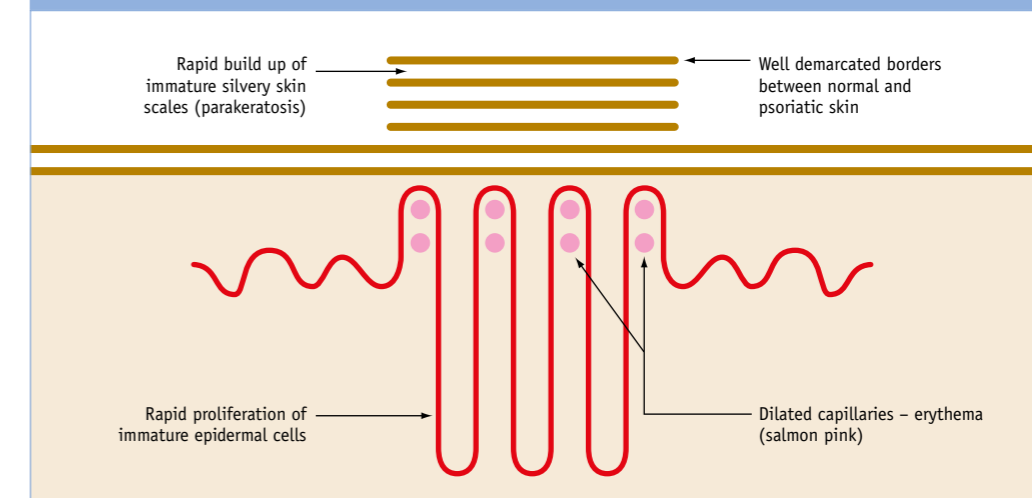
Despite psoriasis being so common it has a relatively low public profile. Many affected people suffer from a leper complex and can very effectively ‘hide’ their disease in the public eye.

Psychosexual difficulties often arise.² Dennis Potter’s “Singing Detective” probably did more to raise public awareness than any amount of publicity by professional bodies and patient representative groups! Although psoriasis is derived from the Greek ‘to itch’, it never fails to amaze me how often very extensive disease can be virtually asymptomatic. However, psoriasis can be cosmetically unpleasant but also symptomatically very uncomfortable. Individuals vary in their tolerance of all skin conditions and this is particularly well illustrated in psoriasis when an individual’s stoicism or, conversely, intolerance of their condition often bears no resemblance to the severity of the condition itself, where individuals are prepared to put their liver, kidneys and bone marrow on the line pursuing potent systemic therapies to rid themselves of the slightest nuance of disease.

An interesting new and potentially very important concept is that psoriasis, due to the fact that it is a chronic inflammatory condition, may represent a significant cardiovascular risk in its own right and further research and treatment recommendations are awaited.

Psoriasis is caused by an abnormally enhanced proliferation of the epidermis with concurrent immune activation. Skin cells which would normally take approximately a month to develop, mature and shed, accelerate their turnover to only a few days producing areas of rapid build up of immature skin scales which produce shedding often of ‘snow storm’ proportions! These changes are reflected histopathologically.

HISTOPATHOLOGY OF PSORIASIS



CLINICAL PRESENTATIONS

Psoriasis is not a uniform disease. There are, however, a number of morphologically distinct clinical patterns, although there is a wide spectrum and often very significant overlap or mixed presentations. Eczema and psoriasis are in their pure forms separate conditions, yet there are areas of overlap that are variously described as eczematous psoriasis, or psoriasiform eczema. For the sake of simplicity we will consider the most common patterns separately.

1. CHRONIC PLAQUE PSORIASIS – This characteristically produces very well demarcated inflammatory plaques, classically salmon pink with a superimposed



white/silvery scale on the extensor surfaces of the knees and elbows with variable involvement of the trunk, and other areas of the limbs and a predilection for the natal flexures. Coexistent scalp psoriasis is extremely common particularly involving the scalp margins, again with a very sharp demarcation.

NAIL CHANGES IN PSORIASIS



Nail changes are also common, occurring in up to 50% of patients, with a characteristic triad of pitting, subungual keratosis and onycholysis often in a symmetrical distribution. When nail involvement is the sole presentation, the presence of pitting is enormously useful to help distinguish psoriasis from fungal nail dystrophy, although of course the two commonly co-exist.

2. GUTTATE PSORIASIS – This is a particularly common presentation in the younger patient. ‘Gutta’ is the Latin for drop. The patient often looks like they have been showered in small plaques of psoriasis extensively over the trunk and limbs. The association with a prior streptococcal infection some two to three weeks before the appearance of the rash is well established occurring in up to two thirds of cases. Although guttate psoriasis can manifest as a single clinical episode, the majority go on to develop more chronic disease in later life.

GUTTATE PSORIASIS



3. PALMOPLANTAR PUSTULOSIS – This is a rarer presentation of localised pustulation involving the thickened epidermis of the palms of the hands and soles of the feet which can be very disabling due to painful fissuring. It can be differentiated from pompholyx eczema by the dominance of pustulation rather than ‘sago grain’ vesiculation. It is a notoriously stubborn condition to treat, more commonly occurring in females and has a strong association with cigarette smoking. An associated extreme form of destructive nail and terminal phalangeal involvement called ‘acropustulosis’ can be enormously disabling.

PALMOPLANTAR PUSTULOSIS



UNSTABLE PUSTULAR PSORIASIS



4. FLEXURAL AND GENITAL PSORIASIS

– This is a more common presentation in the elderly. Involvement of the flexures can look morphologically very different from the classic perception of psoriasis. It presents often as a monomorphic, sharply demarcated erythema. Aids to help differentiate this from fungal infection are the absence of scale or satellite lesions and negative mycology. To confuse matters, the two conditions often coexist as the macerated inflammatory epidermis of flexural psoriasis is an ideal breeding ground for invasion by secondary fungal or yeast organisms.

GENITAL PSORIASIS



5. GENERALISED PUSTULAR PSORIASIS/ERYTHRODERMIC PSORIASIS

– These are rare but serious and even life threatening presentations that require urgent involvement of secondary care. Their recognition is important but their detailed management is beyond the scope of this article. The general practitioner must be aware, however, that unstable pustular psoriasis can rarely be triggered by the injudicious use of both potent topical and systemic steroids.

ERYTHRODERMIC PSORIASIS



Some patients often have psoriasis that behaves rather like a chameleon, often presenting with different patterns at different times and of varying severity. This requires a flexible response to treatment from the clinician in utilising his armamentarium.

Psoriasis is essentially a clinical diagnosis. There is little need for further investigation and useful tips in confirming diagnosis include gently scraping a plaque which will accentuate the silvery scale, while more vigorous scraping will lead to characteristic pin point capillary bleeding – the so called ‘Auspitz’ sign although this is not routinely indicated!

KOEBNER PHENOMENON



Histologically, psoriasis has a characteristic appearance but biopsy is rarely necessary or justified.

Psoriasis also illustrates the ‘Koebner’ phenomenon following lines of trauma such as surgical scars or scratch marks. This phenomenon is shared by one or two other common dermatoses, most notably lichen planus and viral warts.

There is an associated seronegative arthritis in 7 – 10% of patients. This is closely associated with HLA B27 tissue typing. There are some very distinct patterns of joint involvement:

- symmetrical polyarthropathy similar to rheumatoid arthritis;
- oligoarthropathy with one or more large joints involved;
- sacroileitis;
- mutilans – as the name suggests a very severe and destructive form of arthritis.



There are many parallels in the key issues at first presentation to that of eczema as outlined in the previous chapter.

- 1. ESTABLISH** – That the aim of treatment is to control, improve and suppress the condition. Optimistically, a complete remission may result but there is no ‘cure’, however the clinician must strive at the very least to make the burden of psoriasis more tolerable!
- 2. ASSESS** – Objectively the extent of involvement and the degree of severity of the psoriasis, but also pay close attention to the subjective impact of the condition on the individual patient in the broadest terms, physically, psychologically, socially and economically. An individual patient with facial or severe scalp involvement may be much more ‘disabled’ than a patient with much more widespread psoriasis which they can effectively ‘cover up’. There are a number of well established tools quantifying the psychological impact of skin disease on an individual patient including disease specific indices, such as the Psoriasis Disability Index (PDI),³ and speciality specific indices such as the Dermatology Life Quality Index (DLQI).⁴ Indeed, such indexes indicate that patients suffering significant psoriasis perceive themselves more “disabled” than if they had severe ischaemic heart disease! Such scoring systems are also an integral part of the assessment process required to obtain access to biologic drugs.
- 3. CLARIFY** – Previous and present treatments, their efficacy and, more importantly, their tolerability. Often an individual patient has not ‘got on’ with a certain treatment due to a poor understanding of how to use it, lack of information and support in its application or ‘avoidable’ side effects. Unfortunately, all too often this reflects the lack of understanding of treatments or support available to the primary care physician himself. Applying topical treatment and possibly additional dressings to the whole body surface requires 30 – 45 minutes a day and thus considerable energy is needed to comply with a twice daily regime! The response to all topical treatments depends entirely on the motivation and compliance of the patient and the enthusiasm of the therapist.

MANAGEMENT PRINCIPLES

Although there are many parallels with managing psoriasis and eczema, there are a number of contrasts as well.

Atopic eczema is generally a problem in younger patients that often largely self resolves, or certainly improves, as they get older. Mild to moderately severe eczema can be effectively managed in a community setting. Treatments are generally cosmetically acceptable and side effects negligible if guidelines on steroid usage are adhered to. Systemic treatment is used in a very small minority of severe, intractable cases.

Psoriasis, on the other hand, is largely a disease of adulthood although up to 10% of cases manifest for the first time in childhood, and resolution is the exception rather than the rule. Topical treatments historically have been often unpleasant or irritant and require dedication and motivation. Moderate to more severe psoriasis often cannot be managed effectively with topical agents and the physician is faced with a real dilemma of balancing the risk:benefit ratio of embarking on systemic treatment. Effective management requires a holistic approach and involves the use of a wide range of professional skills.

The Hippocratic cornerstone of medicine remains ‘primum non nocere’ – firstly do no harm. Specialists will be required to help smaller numbers of more complex patients. Currently only 7% of patients suffering from psoriasis in the UK ever see a dermatologist. There will be a different perspective in general practice but the aim will be the same – a balance between optimal clearance and adverse side effects. Consultant dermatologists vary tremendously in their enthusiasm for second line treatments, both with phototherapy and, more particularly, with DMARDs (Disease modifying anti-rheumatoid drugs) methotrexate, ciclosporin, hydroxyurea, acitretin and most recently the biologic drugs. Side effects can be hazardous. Often monitoring can be done in an exemplary fashion and still significant morbidity arise. General practitioners would rarely initiate such treatments and the emphasis of these articles is to maximise care in the community and have clear guidelines as to when to refer; therefore, I will not explore in any detail the various therapies available in secondary care. However, the GP should have a working knowledge of these drugs and their common side effects and interactions. In many parts of the country, the GPs are closely involved in monitoring DMARDs with interval blood tests through locally agreed “shared care” protocols; in others this is seen as exclusively a specialist responsibility.

Although I would not wish to appear therapeutically nihilistic, another problem I perceive in treating psoriasis with potent second line drugs is that one can become the victim of one’s own success! When second line treatment is initiated for the first time it is often quite spectacularly successful. The patient remembers what it is to be disease free! Whereby before they may have largely come to terms with their condition, there suddenly appears to be a solution. Having become clear they are determined to remain so. However, either the response to treatment appears to diminish as time goes on or treatment must be discontinued due to toxicity or potential cumulative risks. Such patients can become enormously disillusioned and more ‘aggressive’ therapy, in retrospect, appears to have offered them only ‘false’ or temporary hope! Although we shouldn’t “not tell” patients about the treatment options, careful counselling about risks and expectations are a pre-requisite.

FIRST CONSULTATION



**TREATMENT
OPTIONS**

What treatments can we offer in the community? Despite the high incidence and prevalence of psoriasis, there is an urgent need for well controlled comparative trials of various topical treatment options as very little evidence-based information is presently available, both on long term efficacy and cost effectiveness. There are many factors to be considered before embarking on treatment – age, sex, attitude, occupation, health, local resources and geography can all influence the choice for an individual patient. One should never underestimate the value of the use of simple treatments, such as emollients and antipruritic bath additives which are often overlooked. Older fashion preparations, such as Vaseline and arachis (peanut) oil, can be tremendously useful in psoriasis for softening plaque and lifting scale. In 35% of patients, itch, soreness, erythema, scaling and lesion extension were reduced by a twice daily application of emollients alone.⁵

Whatever treatments are utilised, however, whether topical or systemic, my personal experience is that they all follow my anecdotal “rule of thirds”- a third of patients show very useful response, a third show some response and a third show little or no response. An exception to this “rule” would be the biologics. There are many “false dawns” in treating psoriasis and it is always with a degree of trepidation that I await the first follow up consultation after any new therapeutic intervention as to whether I have improved the patient’s condition or indeed perhaps worsened it! There is no such trepidation when treating more predictably responsive conditions such as eczema and acne.

TOPICAL STEROIDS – Although historically discouraged, there has been a shift in attitude by the specialist establishment in the UK, to the use of these preparations in the treatment of psoriasis. Such preparations comprise 36% of all scripts written for treatment of psoriasis and still remain the number one treatment globally. They may be the treatment of choice for certain areas of the body, particularly the scalp, face, flexures and genitalia, and also in the treatment of localised palmoplantar psoriasis. Steroids work only as anti-inflammatories and have no specific anti-psoriatic action. Potent preparations, such as betamethasone valerate, can be used relatively safely for long periods on the scalp. Weaker steroids only should be used on the face, flexures and genitalia given the higher risk of atrophy at such sites. Steroids can often be successfully combined with other treatments such as tar-based preparations and vitamin D analogues to counteract irritancy. Combination preparations such as Trimovate can be very helpful in flexural areas and the ano-genital regions. Specifics regarding the use of topical steroids can be accessed through <https://www.nice.org.uk/guidance/cg153/chapter/1-Recommendations#topical-therapy>.

TAR-BASED PREPARATIONS – The use and availability of such products continues to decline. Although often very useful and, historically, the mainstay of hospital-based treatment, some doubt hangs over their future. Tar is a very complex substance with very many constituent chemicals, but there is no epidemiological evidence of risk in its use in the treatment of psoriasis and other skin conditions. There is a declining range of products that contain tar derivatives (see Table 1).

TABLE 1: SOME EXAMPLES OF PROPRIETARY TAR PREPARATIONS CONTAINING COAL TAR DERIVATIVES

Capasal Shampoo	Exorex Lotion
Alphosyl '2 in 1' Shampoo	Psoriderm Cream

These can be useful in the treatment of scalp psoriasis. Some of the more modern formulations are cosmetically very acceptable; tar preparations should be used with caution in flexures and genitalia due to the risk of folliculitis.

VITAMIN D ANALOGUES – These products account for the majority of topical treatments. As so often in medicine these were found serendipitously to be effective, when in 1986 a patient who was being treated in Japan for severe osteoporosis, showed great improvement in his coexistent psoriasis. They are the first true novel topical treatment available to the clinician for decades. There are three presently available: tacalcitol (Curatoderm) – Almirall, calcipotriol (Dovonex) – Leo and calcitriol (Silkis) – Galderma. Calcipotriol was the first available and has been in use since 1991 in a number of formulations as a cream, ointment and a scalp preparation. It is colourless, odourless and generally found to be cosmetically very acceptable. Therapeutic benefit begins after two weeks of use and demonstrates a maximum response after eight weeks.

Response cannot be predicted. They are thought to work by normalising cell growth, inhibiting cell proliferation and inducing cell differentiation. The importance of twice daily application should be emphasised to improve response.

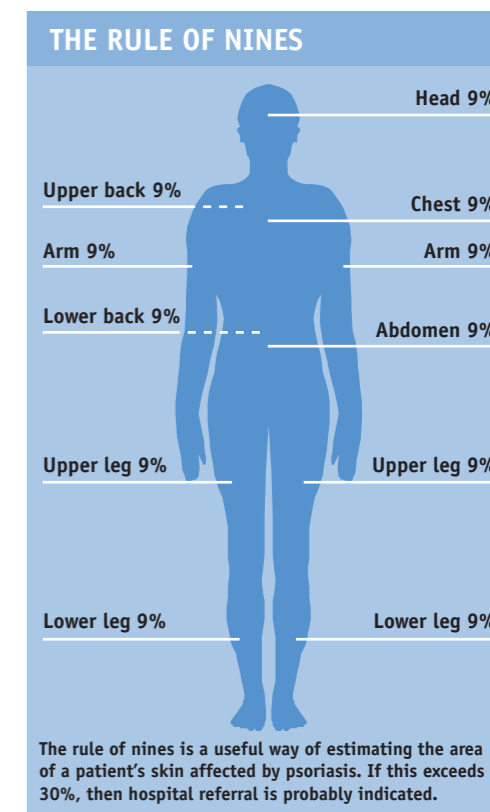
Trials purport to show greater efficacy than tar⁶ and topical corticosteroids.⁷ Calcipotriol as a scalp preparation does not appear to be as effective as Betnovate.

Problems encountered with the vitamin D analogues relate mainly to skin irritation which occurs in some 20% of patients. This is especially true with treatment on the face. Irritancy is usually transient and often does not require withdrawal of treatment. Calcitriol (Silkis) tends to be the best tolerated in “sensitive” skin areas. There is a theoretical risk of hypercalcaemia if a dose of 100g per week is exceeded and even vitamin D intoxication at higher doses. Calcipotriol is licensed for use in paediatric practice above the age of six years.

These are relatively expensive products in comparison to other treatments for mild to moderate psoriasis (Dovonex ointment 30g = £5.78 and 60g = £11.56, Curatoderm ointment 30g = £13.40). However, these products would be considered certainly as a first line treatment when psoriasis involves up to 30% of body surface area. They can be combined with topical steroids to reduce irritancy and, most recently, Dovonex has been shown to have a synergistic effect combined with UVB phototherapy. The advantage of tacalcitol is that it is a once daily preparation and there is also a tacalcitol lotion which can be used on the scalp. Use is not currently licensed in children.

Calcipotriol has also been combined with a steroid (Dovobet Ointment – Leo); this preparation is best used episodically in short bursts once daily for up to 4 weeks for maximum response while ensuring safe exposure of the skin to moderately potent topical steroids.

It is now available in a foam based formulation, Enstilar (60g = £39.68, 120g = £79.36) which has proved popular with many patients.



SCALP PSORIASIS

There are a number of additional useful treatments for scalp psoriasis:

- Ung Cocois Co (St John's) – this is particularly useful for the initial treatment of moderate to severe scalp involvement. Available proprietarily is Cocois (Focus) – its active ingredients are salicylic acid, sulphur, coal tar solution and coconut oil. However, the latter formulation appears less effective;
- Older fashioned preparations such as Cade oil (juniper oil) can occasionally be useful for very stubborn psoriasis but can be quite unpleasant to use and there is also a risk of sensitization; patient selection is important and sourcing is increasingly difficult.
- For maintenance treatment of scalp psoriasis, I have found Capasal (Dermal), a shampoo containing lower concentrations of coal tar, coconut oil and salicylic acid, and Diprosalic (MSD) containing a combination of topical steroid and salicylic acid as useful and acceptable preparations.
- Other products include Etrivex Shampoo (Galderma), a formulation of an old dermatological favourite, clobetasol (Dermovate). There are less concerns amongst specialists regarding the use of potent topical steroids to the scalp as this area seems quite resistant to steroid induced damage.

SCALP PSORIASIS



NAIL PSORIASIS – This is essentially untreatable with topical preparations although can show some useful response to systemic agents. Be aware that fungal infection is usually a secondary phenomenon superimposed on a damaged and dystrophic nail and will often be recurrent.

CLIMATOTHERAPY – A visit to the Dead Sea is considered a very effective 'alternative' regime for the treatment of psoriasis. Situated 390 metres below sea level; it is one of the lowest places on the planet. Its unique situation combines high intensity UVA with a very weak burning spectrum.

THE DEAD SEA



Many departments historically used to have their own favoured "recipes" made up in the hospital pharmacies but this is much less readily available and to have such preparations made up commercially as "specials" is prohibitive.

REFERRAL TO SECONDARY CARE

Indications for referral will depend largely on the range, availability and proximity of services. Well organised day centres can offer advice, support and also intensive treatment. These have been shown to be very cost effective. Indeed, the advent of day centres in the USA has resulted in the virtual demise of in-patient dermatology beds.

CRITERIA FOR REFERRAL

USEFUL HINTS AND TIPS

- Always enquire re alcohol intake – this can be a 'chicken and egg' scenario as psoriatics often drink heavily as a coping mechanism for their disease, but alcohol is an exacerbating factor for psoriasis itself, as well as being a relative contraindication for several of the second line drug treatments particularly methotrexate;⁸
- Psoriasis of the scalp usually, if treated adequately, should not result in permanent hair loss;
- Pustular psoriasis very rarely occurs in children;
- Topical treatments are often impractical for widespread guttate psoriasis;
- Natural sunlight improves psoriasis in 85% of patients affected;
- Long wavelength commercial sunbeds are of little value and their unsupervised use should be strongly discouraged;
- Pregnancy can influence psoriasis either way, but the condition usually improves;⁹
- Consider, in psoriasis, as in other skin conditions requiring multiple medicaments, the purchase of prescription prepayment certificates (£29.65 for 3 months, £105.90 for 12 months). This may encourage concordance with treatment;
- There is no simple effective topical treatment for nail psoriasis. The presence of pitting helps differentiate between fungal and psoriatic nail dystrophy, although these of course can coexist!

Clearly the decision to refer doesn't exclude undertaking the most effective treatment in the interim period, especially in view of some of the current UK waiting lists!

- 1) Diagnostic doubt.
- 2) Failure of topical treatment.
- 3) Extensive disease (defined as >30% of body surface area) especially in the elderly.
- 4) Difficult treatment sites – palmoplantar
 - face
 - flexures
 - disfiguring nail disease
- 5) Erythroderma or generalised pustular psoriasis – these can constitute true dermatological 'emergencies'.
- 6) Severe arthropathy – combined rheumatology/dermatology clinics are sometimes available. Methotrexate can be a particularly 'elegant' way of combining treatment for both skin and a joint involvement.

See also NICE (National Institute for Clinical Excellence) guidelines for referral – www.nice.org.uk and current SIGN (Scottish Intercollegiate Guidelines Network) guidelines – www.sign.ac.uk

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they are troublesome or persist, stop using and seek medical advice. Rarely skin irritation (mild rashes) or allergic skin reactions can occur on extremely sensitive skin, these tend to occur during or soon after the first few uses and if this occurs stop treatment. Vitamin B derivative requirements are increased during pregnancy and infancy, however, with prolonged use over significant areas, it may be possible to exceed the minimum recommended levels of nicotinamide in pregnancy. Safety trials have not been conducted in pregnancy and breast feeding therefore, as with other treatments, caution should be exercised, particularly in the first three months of pregnancy.

Instruct patients not to smoke or go near naked flames. Fabric (clothing, bedding, dressings etc) that has been in contact with this product burns more easily and is a potential fire hazard. Washing clothing and bedding may reduce product build-up but not totally remove it.

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