

Pearls in Dermatology

How I manage recalcitrant hyperkeratotic palmoplantar eczema

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Hyperkeratotic palmoplantar eczema is notoriously difficult to treat and often represents a clinical challenge to the medical practitioners. The possible causes include genuine recalcitrant eczema, undetected underlying contact dermatitis, patients' poor compliance and inappropriate management. A practical approach has been discussed in this article, including first line treatments such as potent to very potent topical steroids and keratolytic agents, second line treatment such as systemic steroid, and third line treatments such as soak photochemotherapy (PUVA) and acitretin.

Keywords: Acitretin, palmoplantar eczema, PUVA, soak photochemotherapy

Introduction

Hand and foot eczema is a common dermatosis encountered in the daily practice of dermatologists and general practitioners. Among the various types of eczema, hyperkeratotic palmoplantar eczema is notoriously difficult to treat and often represents a clinical challenge to the medical practitioners. It does cause significant disability and morbidity to the patients, such as pain arising from fissures, malodour from maceration, and social embarrassment. Moreover a lot of palmoplantar dermatoses with similar clinical morphology do exist. The term 'eczema' (or 'dermatitis') is a common yet loose tag used unfortunately by

some doctors to label those inflammatory dermatoses that they are not sure of their true nature. Therefore one should address differential diagnoses like chronic hyperkeratotic tinea pedis or manuum, localised palmoplantar psoriasis, hereditary or acquired keratoderma, and rare conditions such as acrokeratosis paraneoplastica and acrokeratosis verruciformis, before making a diagnosis of hyperkeratotic palmoplantar eczema. The following discussion will focus on those cases diagnosed as recalcitrant hyperkeratotic palmoplantar eczema.

Causes of recalcitrant hyperkeratotic palmoplantar eczema

1. *Genuine recalcitrant hyperkeratotic eczema*
Hyperkeratotic eczema is intrinsically more difficult to treat. The increased thickness of stratum corneum will hinder the absorption of topical medicaments, thus reducing their efficacy.

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2. Undetected underlying contact dermatitis

The chronicity may be due to an undetected underlying contact dermatitis. Repeated contact with the irritants or allergens can account for the refractoriness. Sometimes the picture is further complicated by superimposed contact dermatitis to topical medications, such as topical steroid, topical antibiotic, preservative or fragrance within the preparations.

3. Patients' poor compliance

One of the common causes of treatment failure in this condition is the patients' poor compliance. Due to the chronicity and lack of cure, it is understandable that some patients will lose patience in the therapy, use the drug inconsistently, shop for different doctors, and try various unproven treatment regimes.

4. Inappropriate management

The failure in treatment occasionally may be contributed by inappropriate management, especially in those who are not adequately trained or uninterested in dermatology. Common pitfalls include lack of proper investigation, lack of proper advice, and use of a topical steroid with inappropriate potency or base.

Management

An algorithm in the management of recalcitrant hyperkeratotic palmoplantar eczema is shown in Figure 1.

First line treatments

Usually the treatment has to start with a potent to very potent topical steroid (such as clobetasol propionate 0.05%). A keratolytic agent (such as 3-6% salicylic acid ointment) is often added to enhance the absorption through the thickened stratum corneum. Adequate emollient

is a useful adjunct to soften the skin. It should be remembered that most emollients are short lasting in their effect therefore they should be applied much more frequently (at least four to five times per day) than the topical steroid. Oral antihistamine may be prescribed to control the pruritus. Diluted potassium permanganate (1:8000) soaking is used in case of malodour due to maceration, and tar solution soaking may reduce the itching. Topical or systemic antifungal or antibiotic are indicated in superimposed fungal or bacterial infection, especially in those treated with potent topical steroid for a substantial period.

If there is no response or even deterioration after these simple measures, one should revise the diagnosis and exclude other possibilities.

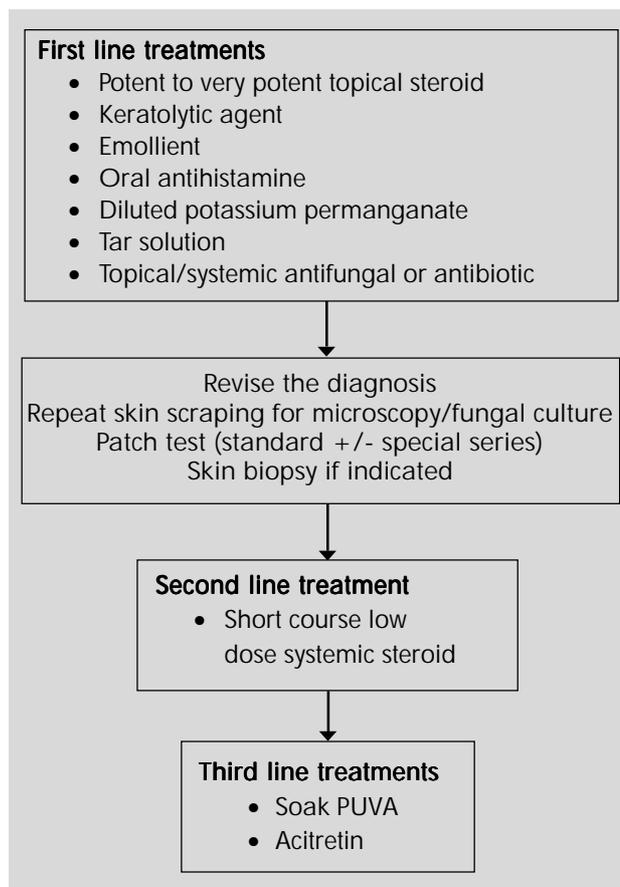


Figure 1. An algorithm in the management of recalcitrant hyperkeratotic palmoplantar eczema.

Repeated skin scraping for microscopy and fungal culture should be done to exclude fungal infection. Patch test with standard +/- special series (medicaments, vehicles, perfumes and flavours, antimicrobials and preservatives) should be considered if underlying allergic contact dermatitis is suspected. Skin biopsy is sometimes indicated if other dermatoses are suspected.

Second line treatment

In severe and recalcitrant cases, occasionally a short course (two weeks or less) of low dose systemic steroid (20 mg prednisolone daily or below) can be given. However benefit is usually short lasting and long-term treatment should be avoided. This is usually given for temporary relief of symptoms in certain special occasions of the patients.

Third line treatments

Despite all the treatment options as mentioned above, recalcitrant cases are not uncommon. Two further treatment modalities are available, but they should only be given if there is strong justification.

Photochemotherapy

Soak PUVA is performed as a form of topical photochemotherapy and has been used in some palmoplantar dermatoses including hyperkeratotic palmoplantar eczema.¹⁻³ One to 5 ml of 0.15% of meladinine solution is diluted with 1500 ml warm water to achieve a concentration of 0.0001 to 0.0005%. The patient, wearing protective goggles, immerses both hands and feet in the diluted solution for 15 minutes (Figure 2). This is followed immediately by ultraviolet-A irradiation (Figure 3). The starting dose is 0.5 J/cm², with an increment of 0.5 J/cm² each visit. The maximal dose recommended is 5 J/cm². After irradiation, the patient should wash off the meladinine solution from the hands and feet. The patient is also advised to avoid sunlight for two days and use broad spectrum sunscreen.⁴ The schedule used in our service is three times per week for about three to six months. Satisfactory result is often achieved, but the procedure is time consuming and may not be accepted by busy patients.

Oral retinoid

Acitretin at a dose of 0.5-1 mg/kg/day is given. Further benefit can be achieved if combined with



Figure 2. Soak PUVA: soaking in diluted meladinine solution.



Figure 3. Soak PUVA: irradiation with ultraviolet A.

photochemotherapy (rePUVA). Good result can usually be achieved, especially in controlling the hyperkeratosis and subsequent painful fissures. In a single-blind placebo-controlled study on oral acitretin, 29 patients with hyperkeratotic palmar eczema were recruited.⁵ Approximately half of them had plantar involvement too. Fourteen patients were given acitretin 30 mg daily while the rest placebo. After treatment for four weeks, a 51% decrease in symptoms occurred in the acitretin group ($p < 0.01$) while a 9% decrease in symptoms was observed in the placebo group ($p > 0.05$). In this study, no patient discontinued treatment due to side effects. The authors suggested that 30 mg of acitretin was efficacious and safe.⁵ However, we need to be aware of the long term side-effects of acitretin that limit its prolonged use in this relatively 'benign' condition.

References

1. Schempp CM, Muller H, Czech W, Schopf E, Simon JC. Treatment of chronic palmoplantar eczema with local bath-PUVA therapy. *J Am Acad Dermatol* 1997;36(5 Pt 1):733-7.
2. Behrens S, von Kobyletzki G, Gruss C, Reuther T, Altmeyer P, Kerscher M. PUVA-bath photochemotherapy (PUVA-soak therapy) of recalcitrant dermatoses of the palms and soles. *Photodermatol Photoimmunol Photomed* 1999;15:47-51.
3. Davis MD, McEvoy MT, el-Azhary RA. Topical psoralen-ultraviolet A therapy for palmoplantar dermatoses: experience with 35 consecutive patients. *Mayo Clin Proc* 1998;73:407-11.
4. Chong LY. Practical guidelines for phototherapy. In: Lo KK, Chong LY, Tang YM, Ho KM, editors. *Handbook of dermatology and venereology*. Hong Kong: Social Hygiene Service, Department of Health, HKSAR Government; 2003, p. 193-208.
5. Thestrup-Pedersen K, Andersen KE, Menne T, Veien NK. Treatment of hyperkeratotic dermatitis of the palms (eczema keratoticum) with oral acitretin: a single-blind placebo-controlled study. *Acta Derm Venereol* 2001;81: 353-5.