Hand dermatitis: Current treatment options

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Hand dermatitis or eczema poses an extraordinary challenge in diagnosis and treatment and demands expeditious and aggressive attention to prevent disability and consequent limitation of lifestyle. It has a spectrum comprising acute / sub-acute and chronic phase(s).

The acute phase is characterized by intense erythema, edema vesiculation, oozing and crusting, which may impede day to day function of the hands.[1] Although the inciting cause is frequently obvious in acute hand eczemas, the priority of management is to provide immediate symptomatic relief to the patient leading to restoration of the hand function. Accordingly, the affected hand(s) are to be given complete rest along with moist compresses for a soothing effect and removal of crust and debris. Hands may be soaked 2 to 3 times a day in 1% liquor aluminum acetate (Burrow's) or 1:8000 potassium permanganate solution. Appropriate oral antibiotics[2] are required to be administered preferably following the result of culture and antibiotic sensitivity. Systemic steroids are the mainstay of therapy in acute episodes.[3] Without therapy, an episode of dermatitis may be expected to persist for up to 3 to 4 weeks. Early adequate use of oral steroids can shorten this course significantly. Acute severe allergic contact dermatitis with marked edema and bullae should receive the preceding treatment but may also require the addition of systemic corticosteroids. The duration of oral steroid therapy is usually 7 to 10 days, but severe episodes of dermatitis may recur when therapy is stopped, thus, an additional few days of tapering systemic therapy may be required. The more common modality used is a potent topical corticosteroid cream. Severe itching may be controlled by antihistamine administration, a combination of H1 (hydroxyzine, cetirizine) and H2 (ranitidine hydrochloride) receptor antagonist. Furthermore, dexamethasone / methylprednisolone pulse therapy is a feasible option in severe extensive dermatitis.[4,5]

Whereas, chronic hand dermatitis / eczema is multifactorial, particular attention must be paid to the causative factors including allergens, irritants or secondary infection. The main principles of treatment include 1) Avoidance of allergens and irritants 2) Frequent application of emollients and 3) Sparing use of topical steroids.

Avoidance advice: This forms a very important component of treatment once a diagnosis of contact dermatitis has been made on the basis of a detailed history, examination and patch testing. Possible sources of exposure to the causative allergens should be identified and advice has to be tailored to an individual. The patient should be informed about the identification of the offending agent and the possible sources along with a list of cross reacting substances.

Examples of specific avoidance are the use of plastic instead of rubber gloves, use of medicaments free of an identified allergen, protective measures like gloves for hands in case of exposure at work. Education regarding minimal use of irritants like soap and detergents is very important in the home environment. Barrier creams containing dimethicone, petrolatum may be used but are not always effective in the occupational environment.

Active treatment: This involves frequent application of emollients and sparing use of topical steroids. Emollients

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are the first line of treatment to decrease itching and reduce dryness and scaling. Regular and liberal use of hydrating emollients facilitates the hydration state of stratum corneum and improves the barrier function of skin. Along with these, lotions containing alpha hydroxy acids such as glycolic or lactic acid are specifically used for thick scaly plaques.

Topical steroids should be used sparingly and in the lowest concentration that is effective therapeutically. Low to medium strength topical steroids such as hydrocortisone valerate, desonide are useful for prolonged use. In palmar involvement longer term intermittent use of a potent corticosteroid preparation is more beneficial and well tolerated.[6] Refractory cases may also respond to daily application of a potent steroid under occlusion for short periods. Intradermal injection of triamcinolone acetonide (10 mg/ml) for recalcitrant localized patches of hand eczema has been recommended.[7] Ranitidine[8] was shown to have adjuvant benefits to topical steroids in treatment of atopic hand eczema. A suppressive effect of ranitidine on wheal flare and itching reactions in skin prick tests has been demonstrated, accounting for its usefulness in therapy of allergic conditions.[9] Other oral antihistaminics (*vide supra)* can be used mainly to alleviate the itching.

Superimposed infections need to be ruled out and if present, treated with appropriate topical/oral antibiotics or antifungals. Other management options include tar paste, salicylic acid and propylene glycol applications under occlusion before steroid ointment, treatment of fissures with cyanoacrylate glue, and protective bandages/ cotton gloves to protect as well as keep topical remedies in place.

Amongst the non-steroidal treatment options, tacrolimus[10,11] has been shown to inhibit both irritant and allergic contact dermatitis in the guinea pig, and because of its benefits in atopic dermatitis (ACD), it along with the pimecrolimus[12,13] is a potentially useful drug for management of contact dermatitis.[14] In a study on 25 adults 3 times daily application of tacrolimus 0.1% to affected areas for 8 weeks showed significant improvement in erythema, scaling, induration, fissuring, pruritus and composite severity but only persistent improvement in scaling and complex severity following discontinuation.[14] A combination of tacrolimus and topical steroids has also been tried as this reduces the risk of steroid associated side-effects.

Systemic treatment with immunosuppressants such as cyclosporine or methotrexate have shown promising results.[15] Cyclosporine has been found to suppress ACD in animals but most clinical studies on cyclosporine have been undertaken on chronic hand eczemas of mixed etiology.[16,17]

Phototherapy, both PUVA and UVB have been found to be helpful in some subjects.[18] Hand PUVA is useful in stubborn chronic cases of hand eczema, and even PUVA gel therapy is an effective therapeutic alternative to conventional PUVA-bath therapy in treating localized dermatoses of the palms.[19] Also, it was found that either oral PUVA at home or bath-PUVA (hospital administered) showed a substantial decrease in hand eczema with the effect being maintained in an 8 week follow-up period.[20] Marked improvement in objective and subjective signs in dyshidrotic eczema have also been seen with UVA 1 treatment.[21] A newer study has also demonstrated therapeutic effectiveness of a new UV-free irradiation device with considerable improvement in atopics with hand eczema. The study demonstrates that visible light can be successively used for the same.[22] Another modality is the grenz rays which are also useful in the management of chronic contact dermatitis and showed significant benefit in patients of chronic symmetrical hand eczema after weekly irradiation for 6 weeks.[23]

Role of oral retinoids in suppression of hyperkeratotic variety of hand eczema is significant. Intradermal botulinium toxin has been used successively for treating dyshidrotic eczema.[24]

Useful therapeutic activity has also been demonstrated for bexarotene gel in chronic severe hand dermatitis.[25] A recent study showed good results with topical vitamin D3 derivatives (calcipotriol 50 microgram/g and maxacalcitol 25 microgram/g) in recalcitrant hyperkeratotic palmoplantar eczema and suggested them as safe and effective alternate forms of treatment in the same.[26]

In indolent cases in which metal allergy of dietary origin is suspected, oral chelating agents like disulfiram may be given.[27] One study showed good results with 200mg disulfiram daily for 8 weeks but the risk of liver dysfunction is present.[28] In another recent study on 21 patients with hand eczema due to nickel sensitivity, 10 out of 11 patients put on low nickel diet along with disulfiram showed complete healing of eczema as compared to only 1 out of 10 in the control group, establishing the above mode of therapy as a good option.[29]

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