
Topical timolol in chronic, recalcitrant fissures and erosions of hand eczema



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Key words: β -Blocker; erosions; fissures; hand eczema; timolol; topical.

THERAPEUTIC CHALLENGE

Hand eczema affects 10% of the general population. Clinically, it manifests as redness, scaling, infiltration of the skin, vesicles, and areas of hyperkeratosis, fissures, and erosions. Along with moisturizers and skin protections, topical potent steroids, tacrolimus, and in refractory cases, systemic immunosuppressive agents, acitretin, and psoralen plus ultraviolet A are useful. However, fissures and erosions are quite resistant to therapy and troublesome to patients due to associated pain and discomfort.¹

Chronic hand eczema can present with painful fissures and erosions (Fig 1).

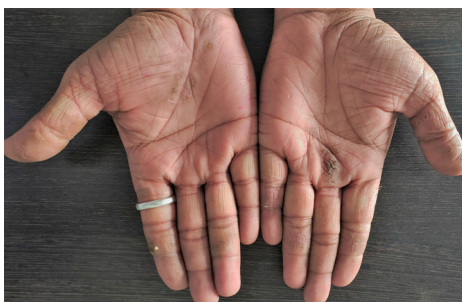


Fig 1. Chronic hand eczema: Hyperkeratosis with fissure and erosion present over both palms.

THE SOLUTION

Treatment with timolol 0.5% ophthalmic solution—apply 2 to 3 drops of timolol over each fissure/erosion at bedtime. Counsel to avoid exposure to irritants. After 1 week of therapy, erosions and fissures healed (Fig 2).

Keratinocytes express abundant β_2 -adrenergic receptors, which play role in cutaneous homeostasis. β_2 -Antagonists (eg, timolol) increase extracellular signal-regulated kinase phosphorylation and keratinocyte migration and thus accelerate skin wound re-epithelialization.² Topical β -antagonist accelerates the recovery of the barrier function of the damaged skin.³ We speculate that similar mechanisms might have played role in the healing of fissures and erosions in our patient.

From the Skin Clinic.

Funding sources: None.

Conflicts of interest: None disclosed.

IRB approval status: Not applicable.

Reprints not available from the authors.

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J Am Acad Dermatol 2021;84:e125-6.

0190-9622/\$36.00

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<https://doi.org/10.1016/j.jaad.2020.04.070>



Fig 2. Chronic hand eczema: Significant resolution of fissures and erosions after 1 week of topical timolol treatment.

Short-term follow-up was the drawback in our observation. Being a nonselective β -blocker, topical timolol should be used cautiously in patients with underlying comorbidities such as heart disease, hypoglycemia, and pulmonary diseases because it may precipitate these conditions.

Topical timolol may be an effective, pain-relieving, and cheaper option in recalcitrant fissures and erosions of chronic hand eczema.

REFERENCES

1. Coenraads PJ. Hand eczema. *N Engl J Med.* 2012;367(19):1829-1837.
2. Pullar CE, Rizzo A, Isseroff RR. beta-Adrenergic receptor antagonists accelerate skin wound healing: evidence for a catecholamine synthesis network in the epidermis. *J Biol Chem.* 2006;281(30):21225-21235.
3. Denda M, Fuziwara S, Inoue K. Beta2-adrenergic receptor antagonist accelerates skin barrier recovery and reduces epidermal hyperplasia induced by barrier disruption. *J Invest Dermatol.* 2003;121(1):142-148.