

Periorbital Allergic Contact Dermatitis Due to Ketotifen

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PRECIS

We present a case of periorbital contact dermatitis secondary to ketotifen-containing eye drops.

DISCUSSION

A 54-year-old woman with seasonal allergies presented with a several-year history of intermittently pruritic eyes and eyelids with periorbital rash (Fig. 1A). She had received multiple courses of systemic prednisone that would temporarily relieve her symptoms. Oral cetirizine and multiple brands of eye drops were of minimal benefit. She wore eyeglasses but no contact lenses.

Patch testing was performed with the North American Contact Dermatitis Group screening series, as well as several supplemental series including preservatives, vehicles, cosmetics, nail acrylates, and perfumes/flavors, as well as personal items including all eye drops. Clinically relevant positive reactions were noted to 2 eye drops



Figure 1. Clinical photographs. A, Localized, periorbital bright pink erythema and edema with conjunctival injection. B, Bausch and Lomb Alaway® eye drops and (D) Zaditor eye drops product images with corresponding patch test results (C, E) showing mild (1+) reactions to these products.

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(Figs. 1B–E), both of which contained ketotifen, benzalkonium chloride, and glycerin. Pertinent negatives included purified benzalkonium chloride (tested twice) and purified glycerin. She tested negative to a third brand of drops, Up & Up Allergy Relief eye drops, which contained benzalkonium chloride, boric acid, edetate disodium, hypromellose, sodium borate, sodium chloride, and hydrochloric acid, but not ketotifen. Purified ketotifen was not commercially available for testing.

The patient's positive patch tests results to both ketotifen-containing eye drops and repeatedly negative tests to other potential allergens in these products, with complete resolution of symptoms after discontinuation of the ophthalmic drops strongly supports ketotifen as

the causative allergen. Ketotifen hypersensitivity is a rare allergy with only 2 previous publications documenting sensitivity, both from Japan.^{1,2} In a retrospective review of 49 patients with confirmed allergy to eye drops by Aoki,¹ 6 were due to ketotifen fumarate. Niizeki et al² reported an additional case. It is unclear whether ketotifen-containing eye drops are more commonly used in Japan, but to our knowledge, sensitivity has not been reported elsewhere. In the United States, a prescription is not needed.

Ketotifen is an antihistamine and mast cell stabilizer available in topical and oral formulations.³ Ketotifen eye drops were first approved for prescription treatment of allergic conjunctivitis in the United States in 1999. It became available without a prescription in 2006. Ketotifen-containing eye drops are generally thought to be safe.⁴ As an over-the-counter medication, it is likely that we will see additional cases of contact allergy to these eye drops. Translational research to deliver ophthalmic ketotifen using contact lenses is currently underway that could introduce an additional route for ketotifen-associated contact dermatitis.⁵

ZEBRA

Previously unreported in North America, ketotifen is a rare but potentially important allergen, especially in individuals with periorbital dermatitis.

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