

CONTACT POINTS

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Systemic contact dermatitis to dorzolamide eye drops

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Contact dermatitis caused by topical treatments for glaucoma is uncommon, although it could be underestimated (1). Several cases have implicated dorzolamide as the causing agent (2–8). We report a new case of systemic contact dermatitis to dorzolamide eye drops. Moreover, it was triggered while performing a repeated open application test (ROAT).

Case report

An 80-year-old woman presented with conjunctival inflammation and severe periorbital eczematous dermatitis of the right eye, which have been evolving for 6 months. Since then, she had also a few round patchy 'fixed' eczematiform lesions on the abdomen. For more than 2 years, she had been using Xalatan™ (latanoprost, Pfizer, Paris, France) in both eyes for open-angle glaucoma. Cosopt™, a combination of dorzolamide hypochloride and timolol maleate (Merck Sharp and Dohme-Chibret, Paris, France), was initiated 6 months ago and applied strictly in the right eye. Soon afterwards, she developed unilateral periorbital dermatitis and conjunctivitis. Cosopt was switched to Combigan™ (brimonidine tartrate, timolol maleate, Allergan, Sophia Antipolis, France) 1 month prior to

consultation, with a discrete improvement. She had no history of atopy or previously known allergic contact dermatitis. All eye drops were withdrawn and the dermatitis was successfully treated with topical corticosteroids ointment and anti-allergic eye drops, Opatanol™ (olopatadine, Alcon, Rueil-Malmaison, France).

All these 4 eye drops contained benzalkonium chloride, a known contributor to irritant contact dermatitis and more rarely allergic contact dermatitis (9). Therefore, this vehicle component was ruled out as a possible cause.

Patch testing was performed with the European standard series, benzalkonium chloride (0.1% pet.), Cosopt, Xalatan, and Combigan eye drops (as is). The patient was also prick tested to all the eye drops. All tests were negative at 20 min, 2 D, and 3 D. A ROAT was performed with Cosopt and Timoptol™ (timolol maleate, Merck Sharp and Dohme-Chibret), each applied to one of the volar aspects of a forearm for 2 weeks. The test was positive with Cosopt after 3 D but negative with Timoptol after 15 D. Moreover, a discrete dermatitis of the right eye recurred, despite no eye drop being started again, as well as a reactivation of the fixed eczematous lesions of the abdomen. Then, 1 month later, a new ROAT was performed with Trusopt™ (dorzolamide hypochloride, Merck Sharp and Dohme-Chibret) using the same technique. This test was positive after 2 D. Severe recurrence of the right periocular dermatitis and of the eczematous lesions of the abdomen was observed at the same time.

Discussion

Topical dorzolamide hypochloride is a carbonic anhydrase inhibitor and a sulfonamide used in the management of glaucoma (1, 2). Local side-effects include stinging, lacrimation, blurred vision, photophobia, conjunctivitis, keratitis, and corneal decom-

pensation (2–8). Several cases of contact allergy to dorzolamide eye drops have been described since Aalto-Korte's first report (3). According to Delaney et al. (2), the mean duration period of application before symptoms is 20 weeks (range 4–40 weeks) and the delay between onset of dermatitis and eye drops disruption is 4 weeks (range 1–9 weeks). Surprisingly, Delaney et al. (2) observed in their series that 6 patients improved only after withdrawal of the concomitant topical beta-blocker, which was started several months before symptoms began. Moreover, no sensitization to benzalkonium chloride was found in those patients.

A major and recurrent problem when exploring cutaneous allergy to eye drops is the frequent false negativity of standard patch tests (2, 4, 5, 10). Although they can be positive (3), some authors have proposed different techniques: tape-stripping of the upper stratum corneum by application and removal of adhesive tape (4), scarification (5), or the use of higher concentrations (dorzolamide 40%) (6). To our knowledge, ROAT was proposed in only 1 case but was negative (6). We believe that ROAT is a method worth trying, if patch testing is negative, especially when the suspected topical treatment contains 2 active components. A provocative test should be restricted to the cases with repeated negative tests and a high suspicion for a particular drug (7).

Topical dorzolamide is rarely involved in systemic symptoms. It was reported to induce lichenoid drug eruption (11) and to exacerbate bullous pemphigoid (12). It was also more recently implicated a toxic epidermal necrolysis with 2 other eye drops (timolol and latanoprost) (13). In our case, the recurrent eczematous lesions of the abdomen were associated with a flare of the right periorbital dermatitis and are highly suggestive of a systemic contact dermatitis triggered by ROAT with Cosopt and Trusopt. We have demonstrated that systemic contact dermatitis may be induced by

the application of the suspected substance, i.e. dorzolamide, on the mucous membranes of the eye. To our knowledge, this is the first case reported with dorzolamide eye drops.

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