

# Allergic contact dermatitis caused by azithromycin eye drops

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Sir,

Herein, we report three cases of unusual acute-type allergic reactions to topical 1.5% azithromycin ophthalmic solution in three patients.

**Case 1:** A seventy-year-old male presented with acute conjunctivitis and acute eczema affecting the eyelids and cheeks two weeks after using azithromycin eye drops for bilateral ocular hypertonia and blepharitis. He experienced redness, scales, itching, and burning (Fig. 1). Discontinuation of the eye drops and treatment with a topical dermocorticoid led to a significant improvement.

**Cases 2 and 3:** A 76-year-old male and a 56-year-old female with diabetic retinopathy received intravitreal injections of bevacizumab followed by azithromycin eye drops. Both patients developed acute edematous eczema and conjunctival hyperemia within twenty-four hours (Figs. 2a and 2b). After withdrawing the eye drops and administering a topical dermocorticoid, their condition improved.

The discontinuation of the eye drops was recommended to all three patients, and treatment with a topical dermocorticoid led to a significant improvement.

Patch tests with azithromycin eye drops were positive in all patients and the pharmacovigilance report was in favor of allergic contact dermatitis.

Topical 1.5% azithromycin ophthalmic solution is a second-generation macrolide antibiotic with



**Figure 1:** Acute conjunctivitis and acute eczema affecting the eyelids and cheeks.

multiple benefits in treating eye infections. It combines bacteriostatic and bactericidal actions, possesses excellent intracellular penetration, and rapidly distributes in tissues. Moreover, it has a prolonged post-antibiotic effect, thereby enhancing its efficacy. Additionally, topical azithromycin offers extra anti-inflammatory and immunomodulatory functions [1,2].

While cases of non-occupational allergic contact dermatitis caused by azithromycin eye drops are rare, occupational allergic contact dermatitis has been documented in pharmaceutical workers handling azithromycin during synthesis and formulation. Patch testing with various concentrations of powdered azithromycin has shown positive reactions at lower concentrations (1% and 5%), indicating that higher

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**Figure 2:** (a) Bilateral acute edematous eczema of the eyelids and acute conjunctivitis. (b) Acute edematous eczema of the eyelids.

concentrations may be unnecessary for testing to avoid irritant reactions [3].

Interestingly, Lopez-Lerma et al. did not find positive reactions to erythromycin and clarithromycin in patients with allergic contact dermatitis to azithromycin, possibly due to the slight structural difference between these macrolides. However, in a series by Milkovic-Kraus et al., cross-reactivity with azithromycin intermediates, including erythromycin, was observed in some patients [4].

In summary, while allergic reactions associated with topical azithromycin eye drops are rare, ophthalmologists should remain vigilant about the potential for such reactions. As a precautionary measure, close monitoring of patients during the initial administration of the drug is recommended [5].

## Consent

The examination of the patient was conducted according to the principles of the Declaration of Helsinki.

The authors certify that they have obtained all appropriate patient consent forms, in which the patients gave their consent for images and other clinical information to be included in the journal. The patients understand that their names and initials will not be published and due effort will be made to conceal their identity, but that anonymity cannot be guaranteed.

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