

Clinical Letter

Non-occupational allergic contact dermatitis caused by azithromycin in an eye solution

DOI: 10.1111/ddg.12328

Dear Editors,

Azithromycin is a macrolide antibiotic. It is characterized by a 15 carbons lactone ring as opposed to the 14 carbons ring present in clarithromycin and erythromycin [1]. Few reports on allergic contact dermatitis to azithromycin associated with occupational exposure have been published [2–4] and evidence of skin allergy after topical administration was unknown until 2011, with a single case reported to date [5].

An 85-year-old Caucasian woman with a past history of bilateral phacoemulsification (cataracts), allergic rhinoconjunctivitis and chronic dacryocystitis had bilateral eyelid eczema for 3 years. The patient had applied Azyter® eye drop (azithromycin dehydrate 15 mg/g, medium-chain triglycerides; Laboratórios Théa®, Portugal) recently for the second time, denying any worsening after the first application a year before. She had also previously applied multiple other eye drops (Dexafree® and Ronic®, both dexamethasone; Allergodil®, azelastine), ophthalmic ointments (Dexamytrex®, dexamethasone and gentamicin; Predniocil®, prednisolone) and Avamys® (fluticasone furoate) nasal spray.

Patch testing was performed using Finn® chambers on Scanpor®, tape (Epitest Ltd Oy, Tuusula, Finland) and readings were made at D2 and D3 in accordance with the International Contact Dermatitis Research Group criteria.

Azyter®, showed positive reactions (++/+), as well as azithromycin 1 % pet. (-/+), azithromycin 5 % pet. (++/++) and azithromycin 10 % pet. (++/+). Clarithromycin 10 % pet. and erythromycin 10 % pet. gave negative results (Figure 1). Azithromycin 10 % pet. patch testing elicited no reactions in 10 controls. All these allergens were obtained from Bial®, Portugal. Other positive reactions were seen with neomycin (-/+), cinchocaine (-/+) and fragrance mix II (farnesol) (+/+). The Portuguese baseline series, cosmetics and excipients series, fragrance mix I, ophthalmic series and all personal products were also tested.

When asked specifically about personal products containing farnesol, the patient admitted having used a farnesol-containing perfume in the past, not recalling any dermatitis on the application sites. She denied the use of any products containing farnesol during the last year. She had been exposed to cinchocaine in the past when using topical

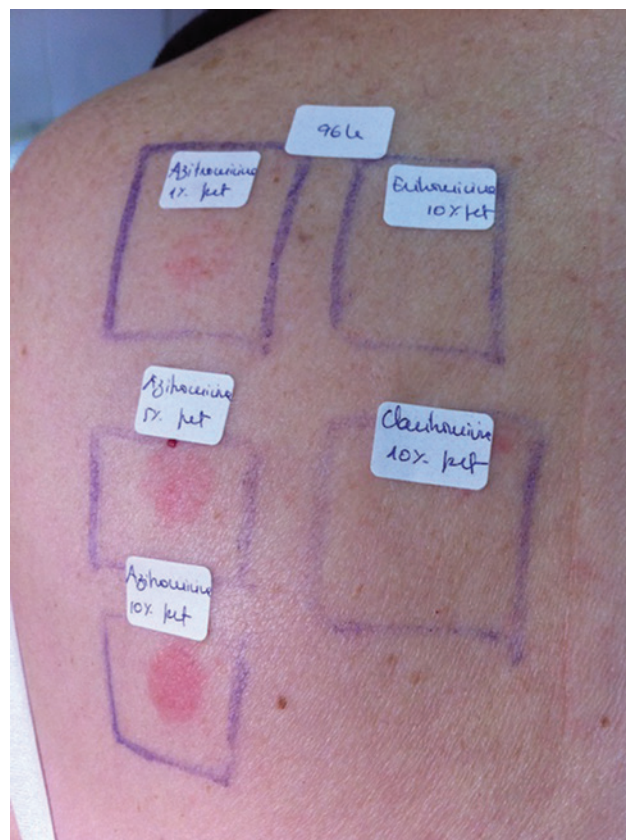


Figure 1 Patch tests at D3 showing positive results for azithromycin 1 % pet., azithromycin 5 % pet. and azithromycin 10 % pet.; clarithromycin 10 % pet. and erythromycin 10 % pet. were negative.

anti-hemorrhoidal drugs. Her eyelid eczema was improved two weeks after she stopped Azyter®.

To our knowledge, eyelid eczema caused by azithromycin in eye drops has been reported only once [5]. Azithromycin eye drops are approved for bacterial ocular infections; they have been available in Europe since 2008. As in most of the previous cases of allergic contact dermatitis to azithromycin, we observed no cross-reaction with erythromycin and clarithromycin [3–5]. This could be explained by the drugs' structural differences but further evidence is needed. A rise in the incidence of allergic contact dermatitis to azithromycin is probable with its more widespread use in topical formulations.

Our patient showed two important positive reactions: azithromycin and farnesol. While azithromycin undoubtedly induced the current eczema, farnesol might have been responsible for the development of eyelid eczema before, emphasizing the importance of poly-sensitization in chronically damaged skin. Azithromycin should be regarded as a potential non-occupational contact allergen when used in eye drops.

Conflict of interest

None.

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