

Allergic contact dermatitis caused by azithromycin in an eye drop

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Macrolides are characterized by a lactonic cycle with a two osidic chain structure, and cutaneous allergy caused

by them is rare (1). Different cutaneous reactions after systemic administration of azithromycin have been reported, such as urticaria, facial oedema, toxic pustuloderma, and fixed eruption. However, no evidence of adverse cutaneous reactions after its topical administration has been reported. We report the first case of allergic contact dermatitis caused by azithromycin in an eye drop preparation (2).

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Case Report

A 76-year-old woman was referred to us, presenting with acute conjunctivitis and acute eczema affecting the eyelids and cheeks. Three weeks earlier, she underwent pseudophakia surgery, and she was then prescribed two ophthalmic preparations: Tobradex® (dexamethasone, tobramycin, benzalkonium chloride, edetate disodium, sodium chloride, sodium sulfate, tyloxapol, hydroxyethyl-cellulose, sulfuric acid or sodium hydroxide, and purified water; Laboratorios Alcon, Barcelona, Spain) and Azydrop® single-dose container (azithromycin dihydrate 15 mg/g, medium-chain triglycerides; Laboratorios Thea España, Barcelona, Spain). As allergic contact dermatitis caused by these eye drops was suspected, their application was stopped, and 2 weeks later the patient had improved dramatically.

Patch testing was performed with the Spanish baseline series, Tobradex®, Azydrop®, clarithromycin 10% pet., erythromycin 10% pet., azithromycin 1%, 5% and 10% pet. Readings at D2 and D4 showed positive reactions to Azydrop® (-/++) and to azithromycin 1% pet. (-/++), 5% pet. (-/++), and 10% pet. (-/++). Patch testing with azithromycin 10% pet. in 10 control patients gave negative results.

Discussion

Occupational allergic contact dermatitis has been reported in pharmaceutical workers who handle

azithromycin during its synthesis and formulation. Almost all of these workers presented features of airborne contact dermatitis (3–5). Nevertheless, to our knowledge, this is the first case of non-occupational allergic contact dermatitis caused by azithromycin.

Patch testing with powdered azithromycin 1%, 5%, 10% and 20% pet. has been described (3–5). In a review of the literature, most patients had a positive reaction at the lowest concentrations (1% and 5%) (4), suggesting that there is probably no need to test at higher concentrations, avoiding the risk of irritant reactions.

In our patient, no positive reactions to erythromycin and clarythromycin were seen, as in the report by López-Lerma et al. (5). This could possibly be explained by the slight difference in structure between them, as azithromycin belongs to the group with 15 carbon atoms in its cycle, whereas erythromycin and clarithromycin belong to the group with 14 carbon atoms. However, in the Milkovic–Kraus et al. series, two patients showed cross-reactivity with azithromycin intermediates, including erythromycin (4). In our opinion, the scarcity of reports of allergic contact dermatitis caused by azythromycin make it difficult to take a decision about limiting the use of other macrolides.

We believe that, in the future, the introduction of this topical formulation of azithromycin could increase the incidence of allergic contact dermatitis to this macrolide.

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