

Airborne allergic contact dermatitis from olaquinox in a rabbit breeder

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Case Report

A 47-year-old farmer, working as a rabbit breeder, presented in June 1999. He had no history of atopic dermatitis, psoriasis or drug intake. He reported that, 8 months before, erythematous, scaly and pruritic patches had appeared symmetrically on the backs of his hands and fingers, and on the extensor aspects of his arms. These lesions had progressively spread to his face, neck, retroauricular areas and trunk, and to a lesser degree the whole body, except for the buttocks, thighs and feet. The patient's dermatitis persisted without seasonal variation. Lesions had temporarily improved after treatment with oral and topical corticosteroids, with recurrence in the same areas on discontinuing therapy.

The patient had worked on a rabbit farm for many years in contact with various types of dry food and, more recently, olaquinox powders at 10% in calcium carbonate. Use of other chemicals on his farm was denied. He used to powder several grams of olaquinox into the rabbits' water, by hand, to treat enteritis. He used this product irregularly and without wearing protective clothing or gloves.

Patch and photopatch tests were conducted with Spanish standard series, an antibiotics series (Chemo-technique), olaquinox at 0.01%, 0.5% and 1% pet. and calcium carbonate at 2% pet. 1 day after test application, 1 set was uncovered and irradiated with 10 J/cm of UVA. At D2 and D4 both the irradiated and covered sites were evaluated. Positive patch tests were obtained at D2 to olaquinox 1% pet. (+), nickel sulfate 5% pet. (+) and methylchloro-isothiazolinone + methylisothiazolinone (MCI/MI) (+) 0.67% aq. At D4, patch tests were positive to olaquinox 1% pet. (+), nickel sulfate 5% pet. (+ +), potassium dichromate 0.5% pet. (+), MCI/MI 0.67% aq. (+ +) and caine mix 7% pet. (+ +). Biopsy from an olaquinox patch showed spongiotic dermatitis. The minimal erythema doses for UVA and UVB were within normal ranges. Photopatch test was negative. An olaquinox 1% pet. patch test was negative in 20 control patients. The patient improved after avoidance of olaquinox and no new lesions have been observed at subsequent follow-ups.

Discussion

Olaquinox, together with carbadox and quinoxin, are dioxides belonging to the quinoxaline group. Olaquinox is a yellowish crystalline powder whose chemical name is (2-(N-2 hydroxyethyl) carbamoyl) 3-methyl-quinoxalin-1,4-dioxide (1). It is soluble in water and, partially, in organic solvents. Olaquinox has been used as an additive in feed or water for growth promotion, because of its preventive and therapeutic properties against protozoa and both aerobic and anaerobic bacteria. According to the Regulation 2788/98 of the Directive Council, olaquinox and carbadox were withdrawn from the European Economic Community market in 1998 because of their genotoxic and carcinogenic properties in experimental rodents (2).

In the case reported, diagnosis of occupational airborne allergic contact dermatitis from olaquinox is supported by distribution of lesions, positive patch test, normal phototest and negative photopatch test, and clearance of cutaneous lesions after withdrawing olaquinox. All reports of photosensitivity or contact sensitivity to olaquinox are occupational (3–7). To our knowledge, no similar case has been described, and allergic contact dermatitis caused by olaquinox is unusual (3), photoallergic contact dermatitis being the more usual event (4, 5), also often airborne and commonly followed by a persistent light reaction (6, 7).

References

1. Merck & Co. *The Merck Index*, 12th edn. New Jersey: Merck & Co., Inc., 1996: 4316.
2. Anonymous. Council Directive. *OJ L* 347, 23.12.1998. 1998: 31–32.
3. Bedello P G, Goitre M, Cane D, Roncarolo G. Allergic contact dermatitis to Bayo-N-OX-I. *Contact Dermatitis* 1985; 12: 284.
4. Francalanci S, Gola M, Giorgini S, Muccinelli A, Sertoli A. Occupational photocontact dermatitis from olaquinox. *Contact Dermatitis* 1986; 15: 112–114.
5. Kumar A, Freeman S. Photoallergic contact dermatitis in a pig farmer caused by olaquinox. *Contact Dermatitis* 1996; 35: 249–250.
6. Dunkel F G, Elsner P, Pevny Y, Burg G. Olaquinox-induced photoallergic contact dermatitis and persistent light reaction in a pig breeder. *Contact Dermatitis* 1990; 23: 283. Schauder S, Schröder W, Geier J. Olaquinox-induced airborne photoallergic contact dermatitis followed by transient or persistent light reactions in 15 pig breeders. *Contact Dermatitis* 1996; 35: 344–354.

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