Evaluation of drug-induced photosensitivity by UVB photopatch testing

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Case Report

A 70-year-old white woman (phototype III), who had been treated for 15 years with Aldactazine® (Altizide, spironolactone) because of arterial hypertension, was admitted in February 1998 with a photodistributed erythematous, papulosquamous eruption involving the face (eyelids, cheeks), lateral neck, dorsum of both hands and proximal phalanges. The accompanying symptoms were those of burning and itching. Although she reported protection of her eyes by regularly wearing sunglasses, the erythematous eruption occurred on both eyelids. On withdrawal of Aldactazine®, lesions disappeared and she recovered within 4 weeks.

Photobiological testing was performed with polychromatic irradiation (1.000 W Xenon light, Dermolum UM-W®, Muller, Moosinning, Germany) filtered with a Schott WG 305 filter, and a high-pressure metal halide UVA lamp (2.000 W, Sunlab®). The UVB radiant energy was 3.0 mW/cm^2 and that of UVA, 40 mW/cm^2. Patch and photopatch tests were performed in triplicate with the French Society of Photodermatology standard series (1), Aldactazine® 10% aq. and 10% pet. The patches were removed after 1 day (D). 1 set was irradiated with 5 J/cm^2 of UVA and a 2nd set with a suberythemal UVB dose (0.75 UVB-MED). The 3rd, non-irradiated set served as the patch test control. Reading was made at D1 and D2 after irradiation.

Results

The patient's UVB-MED (minimal erythema dose) was 51 mJ/cm^2, which is normal for phototype III. The UVA phototest (13 J/cm^2) was negative. The Aldactazine® UVB photopatch test was positive (++ D1, ++ D2). Patch test and UVA photopatch test with Aldactazine® were negative. Positive patch tests were obtained with musk ambrette 5% and chlorpromazine 0.1% pet. but did not show any relevance. The photobiological investigations revealed the diagnosis of Altizide UVB photoallergy (Altizide is included in Aldactazine®).

Discussion

Thiazide diuretics are widely recognized as common causes of photosensitivity (2). Persistent photosensitivity has also been reported (3). The portion of the electromagnetic spectrum producing photosensitization is generally limited to UV radiation and visible light. The action spectrum of UVA radiation is implicated in most exogenous photoallergic reactions (4). It has been reported that certain drugs induce photoallergic reactions by UVB radiation alone (5). There are still widespread differences in the practice of photopatch testing, and some use only UVA irradiation (6).

Our patient did not show any photosensitivity when tested in the UVA range, but photopatch tests in the UVB range revealed a strong positive reaction 1 and 2 days after irradiation. The eruption on the eyelid, poorly exposed to sunlight, could be related to spread of the photoallergic reaction (7). The major absorption spectrum of Altizide ranges in the UVB and UVC wavebands (210–230 nm and 260–290nm), whereas the absorption spectrum in the UVA waveband is of minor extent (8). Single application of UVA photopatch testing runs the risk of false-negative results in the evaluation of photoallergic reactions to drugs with an action spectrum strictly limited to UVB, as in our case. We therefore recommend performing photopatch tests with UVA and UVB radiation.

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