

Short Communication

Photoallergic contact dermatitis due to diphenhydramine hydrochloride

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Key words: photoallergic contact dermatitis; medicaments; antihistamines; diphenhydramine hydrochloride; lack of cross-sensitivity. © Munksgaard, 1998.

Case Report

A 56-year-old woman had had itchy erythematous lesions on the face and backs of the hands for several months. On examination, she had diffuse erythema with papules and scaling, exclusively on sun-exposed areas. She had been applying 1% diphenhydramine ointment (Ranakein[®], Kobayashi Komu Co. Ltd. Tokyo) for 6 months. She stopped using the ointment, but her condition persisted. Photopatch testing showed a positive reaction to diphenhydramine hydrochloride 1% pet. (Table 1). She avoided further use of the ointment, and UV exposure as much as possible. Over the next 2 years, her skin lesions gradually subsided with application of a corticosteroid ointment.

Discussion

Diphenhydramine hydrochloride has been widely used as an antihistamine for nearly 3 decades. It is one of

the H₁-receptor antagonists whose basic structure is a substituted ethylamine (1). Photosensitivity reactions have been reported with other H₁-receptor antagonists, e.g., promethazine hydrochloride (Hiberna[®]) and hydroxyzine (Atarax-P[®]). Although allergic contact dermatitis due to diphenhydramine is fairly common, photoallergy has been very rare (2).

Emmett (2) reported a case that was elicited by UVB (290 to 320 nm), while our case appeared to be induced by UVA (320 to 400 nm). Almost all previously described cases have been elicited by UVA, and UVA is thought to damage cellular membranes in photosensitivity dermatitis/actinic reticuloid (3).

We confirmed diphenhydramine hydrochloride-induced photoallergy in the present case, which was elicited not by UVB but by UVA. As her photosensitivity reactions continued for 2 years after she stopped using the ointment, we suspected cross-reaction to other drugs with a similar structure, such as Polaramin (chlorpheniramine maleate), which she sometimes took to alleviate itching. However, photopatch testing showed no reaction to Polaramin.

Table 1. Results of patch (PT) and photopatch (PPT) testing^{a)}

Allergen	D2		D3		D7	
	PT	PPT	PT	PPT	PT	PPT
diphenhydramine hydrochloride 1% pet.	—	—	—	++	—	+
Polaramin	—	—	—	—	—	—
TBS	—	—	—	—	—	—
bithionol	—	—	—	—	—	—
hexachlorophene	—	—	—	—	—	—
trichlorocarbonyl	—	—	—	—	—	—
musk ambrette	—	—	—	—	—	—
0.01% chlorpromazine	—	—	—	—	—	—
1% promethazine	—	—	—	—	—	—
1% quinine	—	—	—	—	—	—

^{a)}All patch tests were applied in duplicate, and 1 set were irradiated with UVA (4.85 J/cm²) on D2.

References

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