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Prednicarbate contact allergy

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Key words: prednicarbate; contact allergy; corticosteroids; medicaments; possible cross-sensitivity. © Munksgaard, 1997.

Since the 1st description in 1959, an increase in the number of reported cases of contact allergy to corticosteroids has been observed, with a mean prevalence in Europe of 2.6% (1). We have found only 1 previous report of prednicarbate sensitization (2).

Case Report

Peitel[®] cream, 2× a day, was prescribed to a 58-year-old man to treat erythematous lesions on his forearms and legs. By the 5th day of treatment, the lesions had worsened and the dermatitis spread, affecting the trunk and previously unaffected areas of the arms and legs. Oral corticosteroids, antihistamines and antibiotics were given to control this outbreak.

Patch tests with the European standard series showed positive reactions to PPD, parabens and tixocortol pivalate at 2 and 4 days. We added patch tests with Peitel[®] cream, its components and a corticosteroid series (Laboratorio Ifidesa-Aristegui, Bilbao, Spain). They were read at 2, 4 and 5 days. The results are shown in Table 1.

We also performed intradermal tests with hydrocortisone sodium phosphate (1 and 10 mg/ml), methylprednisolone (4 mg/ml), betamethasone sodium phosphate (0.4 mg/ml) and triamcinolone acetonide (0.4 and 4 mg/ml). They were positive to triamcinolone acetonide at D2; they remained positive at D5.

Oral challenge tests with hydrocortisone and methylprednisolone (up to 20 mg) showed no adverse reactions.

Discussion

Our patient is sensitive to prednicarbate, the active component of Peitel[®] cream, with no sensitization to the vehicle ingredients. This is a new, non-halogenated, high-potency corticosteroid, which is esterified in the 17 and 21 positions by an ethylcarbonate and a propionate group, respectively. According to Coopman et al. (3), it belongs to Group D of corticosteroids. Our patient also shows sensitization to other topical corticosteroids: hydrocortisone-17-butyrate, betamethasone valerate and dipropionate, which belong to group D; budesonide and triamcinolone acetonide (group B); and tixocortol pivalate (group A).

Table 1. Results of additional patch tests

	D2	D4	D5
Peitel [®] cream as is	—	+++	+++
prednicarbate 0.2%	—	+++	+++
other vehicles (9)	—	—	—
triamcinolone acetonide 1%	—	++	++
betamethasone dipropionate 0.5%	—	++	++
betamethasone valerate 1%	—	+++	+++
budesonide 0.1%	—	+++	+++
hydrocortisone 17 butyrate 1%	—	+++	+++

Later studies do not altogether support the corticosteroid cross-reactivity patterns that Coopman et al. (3) proposed. Burden & Beck (4) and Wilkinson et al. (5) found simultaneous positive patch tests to tixocortol pivalate, hydrocortisone-17 butyrate and budesonide. In a 1996 multicentre European study (1), a statistically significant correlation was found between positive tests to budesonide and hydrocortisone-17 butyrate. On the other hand, and in contrast with the report of Wilkinson & English (6), our patient did not react to the intradermal injection of hydrocortisone sodium phosphate, although he had a positive patch test to tixocortol pivalate.

Our data do not allow us to confirm whether these results are due to concomitant sensitization or to cross-sensitivity.

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Piperazine diacrylamide allergic contact dermatitis

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Piperazine diacrylamide (1,4-di-(1-oxo-4-propenyl) piperazine, C₁₀H₁₄N₂O₂ (CAS 6342-17-2)) (Fig. 1), a fine white crystalline material with water solubility, is used as a reagent, a crosslinker for acrylamide gels (polymer), in hand-cast gels for 2-dimensional electrophoresis and in column chromatography (1).

Case Report

A 26-year-old man was referred to determine whether his skin disorder was work-related. His job consisted of mixing crystalline granules into solution. He noticed periorbital erythema and a 1.5 cm pruritic red plaque on his right forearm above the level of his glove. 4 days later, a similar horizontal lesion approximately 3 cm in length appeared on the left arm.

He was patch tested with an extended standard series, and most of the chemicals that he worked with. These included N,N,N',N'-tetramethylethylenediamine 0.1% pet., ammonium persulfate 2.5% pet., 2-acrylamido-2-

methyl-1-propanesulfonic acid 0.1% pet., 1,4-di-(1-oxo-2-propenyl) piperazine 0.05% and 0.1% pet., diallyldimethylammonium chloride 0.1% aq., and methacrylamide 0.5% pet. Finn Chambers (Epitest) were applied to the back for 2 days and read at 4 days utilizing the ICDRG criteria (2). There were ++ reactions to 1,4-di-(1-oxo-2-propenyl) piperazine 0.05% and 0.1% pet. but none to the other materials.

After he redesigned his laboratory workplace to avoid contact with piperazine diacrylamide, the skin lesion did not recur.

Discussion

We tested 1,4-di-(1-oxo-2-propenyl) piperazine at 0.1, 0.2 and 0.5% pet. in 20 normal controls (3). We did not find any irritation or active sensitization in these controls. Thus, the concentrations used should be suitable for patch testing.

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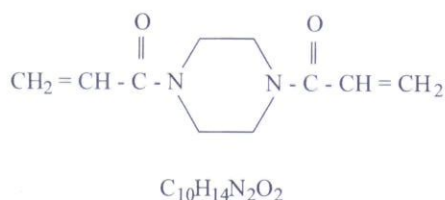


Fig. 1. Chemical structure of piperazine diacrylamide.

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