androgenic actions of testosterone, by occupying its cytoplasmic and nuclear receptors in the target tissues. As well as its original use as a potassium-saving diuretic, it has therefore also been used in the treatment of hirsutism. Side-effects (2), including lichen planus (3), lupus-like (4) and other cutaneous reactions (5), have been reported from its oral administration. It can now be prescribed topically.

Case Report

A 41-year-old housewife consulted us in November 1991 with a 10-year history of androgenetic alopecia (male-pattern baldness) and seborrhea. She had a previous history of beta-lactam allergy and recent hypertension. She was prescribed spironolactone 2%, 2 ml morning and night, applied with a dropper and subsequently rubbed in to encourage its absorption. From the very first days of application, she felt itching and burning of the scalp. In about 1 month, erythema, edema, vesiculation and intense pruritus of the scalp began to appear, as well as occasional edema of the eyelids.

Patch tests gave +++ reactions to nickel and to spironolactone 2% in hydro-alcoholic solution (Magistral). Subsequent +++ reactions with an extreme purity product (Sigma) were obtained to spironolactone 1% alc. and 1% pet.

Comment

We have been prescribing topical spironolactone 2% for the treatment of women with androgenetic alopecia for 2 years, and this is the 1st case of contact sensitization that we have seen. Among previous case reports (6–8), 2 (7, 8) were in patients who had been applying 5% spironolactone creams, 1 (7) for hirsutism and 1 (8) for acne. Both these previous patients had also been applying spironolactone for about a month before the onset of dermatitis.

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Allergic contact dermatitis from propylene glycol in Zovirax cream

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Key words: propylene glycol; CAS 57-55-6; Zovirax; allergic contact dermatitis; medicaments.

Propylene glycol (PG), or 1,2-propanediol, is a colorless, viscous, nearly odorless liquid. PG is used as a disinfectant and wetting agent in topical, pharmaceutical and cosmetic preparations, as a solvent and preservative in syrups for medical use, in the production of varnishes and synthetic resins, and as an antifreeze (1). Although it is well-suited for these purposes, it is capable of producing both irritant skin reactions and contact sensitization (2).

There are many reports of allergic contact dermatitis from propylene glycol in a wide variety of topical preparations (3–13), including one involving Zovirax cream in association with acyclovir allergy (14).

Case Report

A 52-year-old man with herpez zoster of the left upper chest was treated with Zovirax cream 4× daily. A few days after use of the cream, a several acute itchy vesicular eczema appeared.

After clearance of the lesions, patch tests were performed with the European standard series and constituents of Zovirax cream supplied by the manufacturers (Table 1). He reacted only to Zovirax cream, as is, and propylene glycol 1% aq. We concluded that he was sensitive to propylene glycol contained in Zovirax cream.

Table 1. Patch test results

Patch tests	D2	D4
European standard series	–	–
Zovirax cream, as is	+	+
Zovirax cream constituents:		
propylene glycol 1% aq.	+	+
acyclovir 1% aq.	–	–
sodium lauryl sulfate 1% aq.	–	–
poloxamer 1% pet.	–	–
cetyl alcohol 1% pet.	–	–

Comment

The number of topical preparations containing propylene glycol is increasing, and their frequent use by a large patient population could lead to an increase in propylene glycol sensitization (2).

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Occupational allergic contact dermatitis due to ethylenediamine dihydrochloride and cresyl glycidyl ether in epoxy resin systems

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Key words: occupational; allergic contact dermatitis; chemical industry; laboratory worker; epoxy hardeners; reactive epoxy diluents; non-reactive epoxy diluents; ethylenediamine dihydrochloride; CAS 333-18-6; cresyl glycidyl ether; CAS 26447-14-3; di-isodecyl phthalate.

Case Report

A 24-year-old chemical industry worker consulted us with dermatitis of the forearms, upper arms and chest. Lesions were erythematous and had started 6 years previously in the same areas. Patch testing with the GIRDCA standard series (Finn Chambers on Scanpor), performed on the upper back, showed positive reactions at D4 to nickel sulphate 5% pet. and ethylenediamine (EDA) dihydrochloride 1% pet. Further patch tests with a plastics series (Hermal-Trolab) showed positive reactions at D4 to cresyl glycidyl ether 0.25% pet. and di-isodecyl phthalate 5% pet. Patch tests with epoxy resin 1% pet. and ethylenediamine tetra-acetate tetrasodium (EDTA 4 Na) 0.1% pet. were negative.

The patient was frequently exposed to liquid epoxy resin systems in his laboratory work, using them to make synthetic waxes. He denied the use of topical medicaments containing ethylenediamine or of aminophylline, which are frequently the cause of EDA contact dermatitis (1–4).

Discussion

Contact allergy to epoxy resin systems can be due either to the resin itself or to other components such as reactive diluents or hardeners (2, 3, 5). EDA belongs to the aliphatic amine group of epoxy hardeners that are strong sensitizers and irritants, besides being contained in antihistamines, aminophylline, dyes, synthetic waxes, latex, etc. Contact dermatitis from ethylenediamine is common and almost exclusively due to its presence in topical medicaments as a stabilizer (1). Occupational contact dermatitis from EDA in epoxy resin systems is reported to be rather infrequent (2, 3), probably because exposure is usually neither sufficiently prolonged nor intimate to induce sensitization (2). Since no reactions were seen to other amines, such as triethylenetetramine and diethylenetriamine, the dermatitis can be considered the direct effect of EDA sensitization rather than due to cross-reaction. There is still some debate as to whether EDA can cross-react with EDTA (3). Cronin states that patients sensitized with EDA do not cross-react with EDTA and our experience seems to confirm this.

Cresyl glycidyl ether is a reactive epoxy diluent and allergy to it is thus further confirmation of the origin of the dermatitis from epoxy resin systems (3). Di-isodecyl phthalate is a non-reactive epoxy diluent, which can cross-react with dibutyl phthalate, also a non-reactive epoxy diluent (3).

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