

Allergic contact dermatitis from dichlorobenzyl alcohol in a patient with multiple contact allergies

Contact Dermatitis 2009; 60: 295–296

H. Thormann¹, M. Kollander² and K. E. Andersen¹

¹Department of Dermatology, Odense University Hospital, University of Southern Denmark, Sdr. Boulevard 29, DK-5000 Odense C, and ²Dermatology Clinic, Brødregade 20, 8900 Randers, Denmark

Key words: contact dermatitis; dichlorobenzyl alcohol; multiple contact allergies; stearyl alcohol.

When several topical products are used intermittently to treat recurrent skin disease, there is an increased risk of developing sensitization to product ingredients (1). When aggravation of dermatitis appears during treatment or when expected improvement fails to appear, an allergic reaction to topical remedies should be suspected. The case report documents contact allergy to the preservative dichlorobenzyl alcohol (DCBA) in a patient with multiple contact allergies.

Case Report

A 69-year-old male with psoriasis developed dermatitis on the lower legs, spreading to both arms. The patient had used several moisturizers and topical corticosteroids. Diagnostic patch testing with the European baseline series and the patient's topical products showed multiple contact allergies.

Materials for patch testing were TRUE™ test (Mekos Laboratories, Hillerød, Denmark), panels 1–3, and pet. test preparations from Trolab® (Reinbek, Hamburg, Germany) and Chemotechnique® (Chemotechnique diagnostics, Vellinge, Sweden). The pet. test material was applied on Finn Chambers® (Epitest Ltd Oy, Tuusula, Finland) mounted on Scanpor® (Actavis Norway AS, Vennesla, Norway). The tests were occluded for 2 days and read on D3 and D7. The scoring was performed according to International Contact Dermatitis Research Group guideline (2).

Positive reactions were obtained for diazolidinyl urea (550 µg/cm²) (++) ,

Table 1. Positive patch test reactions to ingredients in Dermalog[®]

Ingredient	D3	D7
Stearyl alcohol 30% pet.	+	+
Stearyl alcohol steareth 7, steareth 10 (20% pet.) (trade name TEGO [™] emulgator E 2155; Evonik Goldschmidt GmbH, Essen, Germany)	++	+
Dichlorobenzyl alcohol (2% pet.) (Chr. Krogh A/S, Hellerup, Denmark)	++	+

Sdr. Boulevard 29
DK-5000 Odense C
Denmark
Tel: +4565412705
Fax: +4566123819
e-mail: henrik.thormann@ouh.
regionsyddanmark.dk

imidazolidinyl urea (600 µg/cm²) (++) , fragrance mix II 10% pet. (+), farnesol 5% pet. (++) , an emollient cream Dermalog[®] (Persano Cosmetics, Græsted, Denmark) cream as is (++) , a hydrocortisone cream 0.1% as is (++) , a fusidic acid cream as is (++) , and a combination product containing betamethasone valerate and fusidic acid as is (+). Patch test with tixocortol pivalate (3 µg/cm²) was negative.

The reactions to formaldehyde releasers, fragrance, and farnesol were not of current relevance, while the reactions to topical products were clinically relevant. The patient agreed to supplementary tests with product ingredients (Table 1).

The manufacturer supplied the ingredients of Dermalog[®] cream and informed us that they had replaced the preservative dichlorobenzyl alcohol (DCBA) with an alternative, but the product used by the patient was preserved with DCBA.

Twenty-six consecutive controls patch tested with the TEGO[™] emulgator E 2155 (Evonik Goldschmidt GmbH, Essen, Germany) and DCBA were negative.

Repeated open application tests (ROAT) (3) with DCBA (2% pet.) and Dermalog cream were positive on D5.

Discussion

Dichlorobenzyl alcohol is a preservative approved for use in cosmetics in a concentration up to 0.15% (CAS 1777-82-8, trade names Protectol DAS, Myacide SP, DCBA, and Dybenal). The consumption per annum is not known (4). In a study from Switzerland, 2295 patients were tested with 13 common preservatives, and the frequency of positive reactions to DCBA 1% pet. was 0.4%. However, the relevance of the reactions was not reported (5).

To our knowledge, this is the first report of clinically relevant contact

dermatitis to DCBA documented by patch tests and ROAT.

Stearyl alcohol (CAS 112-92-5, trade names Cetanol, 1-octadecanol, and Lanette 18) was also present in the hydrocortisone cream used by the patient. Stearyl alcohol and the steareth ingredients are emulsifiers commonly used in cosmetics and products used in dermatologic care. The potential for sensitization is very low. Contact allergy to these compounds is also rare (6, 7).

References

1. Carlsen B C, Andersen K E, Menné T et al. Patients with multiple contact allergies: a review. *Contact Dermatitis* 2008; 58: 1–8.
2. Wahlberg J E, Lindberg M. Patch testing (chapter 22). In: *Contact Dermatitis*, 4th edition, Frosch P J, Menné T, Lepoittevin J -P (eds). Berlin, Heidelberg, Springer-Verlag, 2006: 365–390.
3. Hannuksela M, Salo H. The repeated open application test (ROAT). *Contact Dermatitis* 1986; 14: 221–227.
4. Opinion of The Scientific Committee on Cosmetic Products and Non-Food Products intended for Consumers. 2,4-Dichlorobenzyl alcohol (DCBA). Colipa no P74. SCCNFP/0604/02 adopted 10th January 2003. http://ec.europa.eu/health/ph_risk/committees/sccp/documents/out189_en.pdf (accessed 13 April 2009).
5. Perrenoud D, Bircher A, Hunziker T et al. Frequency of sensitization to 13 common preservatives in Switzerland. *Contact Dermatitis* 1994; 30: 276–279.
6. Tosti A, Guerra L, Morelli R et al. Prevalence and sources of sensitization to emulsifiers: a clinical study. *Contact Dermatitis* 1990; 23: 68–72.
7. Yesudian P D, King C M. Allergic contact dermatitis from stearyl alcohol in Efudix cream. *Contact Dermatitis* 2001; 45: 313–314.

Address:
Henrik Thormann
Department of Dermatology
Odense University Hospital
University of Southern Denmark