

Contact dermatitis from didecyltrimethylammonium chloride and bis-(aminopropyl)-laurylamine in a detergent-disinfectant used in hospital

Y. DEJOBERT, P. MARTIN, F. PIETTE, P. THOMAS AND H. BERGOEND

Service de Dermatologie, CHRU de Lille, 59037 Lille Cedex, France

Key words: detergent; disinfectant; didecyltrimethylammonium chloride; bis-(aminopropyl)-laurylamine; glyoxal; occupational; allergic contact dermatitis; airborne contact dermatitis; tensioactive; quaternary ammonium compound.
© Munksgaard, 1997.

Case Report

A 24-year-old woman, a hospital employee for 2 years, with no history of atopy, presented with a 2-month history of dermatitis of the dorsum of the hands and wrists, which occurred during the course of her work. She had also presented with a facial dermatitis, with involvement of the eyelids and conjunctivitis, 1 month before. Results of patch testing are reported in Table 1.

7 months later, she was working in a new location, and had no more direct contact with detergent-disinfectant. However, she presented again with involvement of the eyelids, face, and arms (exposed parts). The day before, her colleagues had used detergent-disinfectant no. 1 in the room where she worked. She had then to wait for complete dryness of the floor, otherwise she presented with new episodes, requiring systemic corticosteroid treatment because of the severity of the symptoms. Results of patch testing are reported in Table 2. The patient was then patch tested to bis-(aminopropyl)-laurylamine at lower concentrations (Table 3). 20 controls, unexposed to risk, were patch tested with didecyltrimethylammonium chloride (DDAC) (0.01% aq.) and bis-(aminopropyl)-laurylamine (0.01% aq.), and were negative.

Comment

Contact dermatitis from quaternary ammonium compounds has previously been described, particularly in patients with leg ulcers, eczema, or cutaneous infec-

Table 2. Further patch test results (glyoxal was only in detergent-disinfectant no. 2, and bis-(aminopropyl)-laurylamine was only in detergent-disinfectant no. 1)

Components of detergent-disinfectants nos. 1 and 2	D2	D3
didecyltrimethylammonium chloride (50% active matter) 0.1% aq.	+++	+++
0.01% aq.	++	++
bis-(aminopropyl)-laurylamine (30% active matter) 2% aq.	++	++
1% aq.	+	+
glyoxal (40% active matter) 2% aq.	-	++
other components	-	-

Table 3. Final patch test results

	D2	D3
bis-(aminopropyl)-laurylamine (30% active matter) 0.1% aq.	+	+
0.01% aq.	?+	+

tions (1). One of the most well-known is benzalkonium chloride, which is commonly used in ophthalmic preparations (2). Contact dermatitis from disinfectants in hospital has already been reported, for example, to Ampholyt G, which contains dodecyl-di(aminoethyl)-glycine (3).

DDAC is also present in other disinfectants of the same manufacturer and of other manufacturers. Bis-(aminopropyl)-laurylamine is an amphoteric tensioac-

Table 1. Initial patch test results

Allergens:	D2	D3
European standard series		
nickel sulfate 5% pet.	++	++
balsam of Peru 25% pet.	++	++
Additional series		
thimerosal 0.1% pet.	++	++
budesonide 0.1% pet.	-	-
tixocortol-21-pivalate 1% pet.	-	-
Euxyl K 400 0.5% pet.	-	-
Glutaraldehyde 0.3% pet.	-	-
Own products		
detergent-disinfectant no. 1 0.1% aq.	++	++
detergent-disinfectant no. 2 0.1% aq.	++	++
detergent-disinfectant no. 3 0.1% aq.	-	-
latex gloves as is	-	-

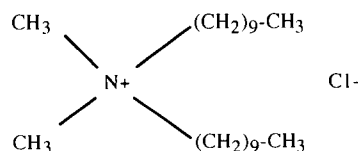


Fig. 1. Chemical structure of didecyltrimethylammonium chloride.

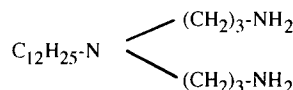


Fig. 2. Chemical structure of bis-(aminopropyl)-laurylamine.

This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.