

Short Communication

Persistent reactions after patch testing with TRUE Test™ panels 1 and 2

ANETTE BYGUM AND KLAUS E. ANDERSEN

Department of Dermatology, Universtity Hospital, 5000 Odense, Denmark

Key words: contact allergy; allergic contact dermatitis; patch testing technique; long-lasting patch test reactions; absence of active sensitization; TRUE Test™; nickel; chromate; colophony. © Munksgaard, 1998.

Long-lasting or persistent patch-test reactions are positive reactions at days 2–7 that remain positive for weeks or months, allergens such as gold, chromate, PPD, fragrances and plants having previously been implicated (1). Persistent reactions must be differentiated from late reactions first appearing at least 10 days after application, which are regarded as indicative of active sensitization.

Patients and Methods

From January to June 1994, 251 consecutive eczema patients were patch tested with the TRUE Test™ standard series [1–24] and asked to return for an extra reading at day (D) 21. The patch tests were applied to the upper

back for 2 days and initially read on days 3 and 5–7 according to ICDRG recommendations. The patch test area on the back was marked with ink, drawn on paper, and photographed so as to be able to locate it at the D21 reading. At D21, we looked for any new or persistent local reactions, e.g., erythema, change in pigmentation, infiltration, and enquired about pruritus. Any reaction seen on the back was compared to the initial reading and scoring. The procedure was approved by the local ethical committee.

Results

111 of 251 patients agreed to participate and 103 (44%) actually attended on D21. The initial participants, 33

Table 1. Results of testing 103 patients with standard series*

Allergen	No. positive reactions			No. (%) persistent reactions
	females	males	total	
nickel sulfate	20	0	20	2 (10%)
lanolin	0	0	0	
neomycin sulfate	0	0	0	
potassium dichromate	1	2	3	2 (67%)
caine mix	1	0	1	0
fragrance mix	4	0	4	1 (25%)
colophony	3	2	5	2 (40%)
epoxy resin	3	1	4	0
quinoline mix	1	0	1	
balsam of Peru	1	0	1	
ethylenediamine dihydrochloride	2	0	2	
cobalt chloride	6	0	6	1 (17%)
p-tert-butylphenol-formaldehyde resin	5	0	5	1 (20%)
paraben mix	0	0	0	
carba mix	3	0	3	0
black rubber mix	0	0	0	
Kathon CG	3	1	4	1 (25%)
quaternium 15	2	1	3	1 (33%)
mercaptobenzothiazole	1	0	1	0
p-phenylenediamine	3	0	3	0
formaldehyde	0	1	1	1 (100%)
mercapto mix	1	0	1	0
thimerosal	4	4	8	1 (13%)
thiuram mix	5	0	5	1 (20%)

*3 were not tested for fragrance, 2 not for balsam of Peru and 2 not for nickel sulfate.

Table 2. Results of patch testing in 8 patients with persistent reactions

Patient no.	Positive reactions allergen	Patch test readings		
		D3	D5-7	D21
1	thimerosal	++	++	p
2	colophony	+++	+++	p
3	fragrance mix	+++	+	p
	Kathon CG	++	++	p
	thiuram mix	+++	+	p
	colophony	+	—	—
4	potassium dichromate	+	++	p
	quaternium 15	++	++	p
	formaldehyde	++	++	p
5	colophony	++	++	p
6	nickel sulfate	++	++	p
	potassium dichromate	++	++	p
	cobalt chloride	+	?+	—
7	nickel sulfate	++	+	p
	p-t-butylphenol	?+	?+	p
8	cobalt chloride	++	++	p

+++ , ++ , +=test reactions of allergic nature; ?+=doubtful reaction; —=negative reaction; p=persistent reaction (erythema/hyperpigmentation and infiltration).

males (30%) and 78 females (70%), were aged between 18 and 79 years, with a mean of 41. Demographic data were recorded for all 251 patients, including the MOAHL index (2). No significant difference was found with regard to sex, age, occupational dermatitis, atopy hand and leg dermatitis between the patients participating and those not ($p=0.40$, $\chi^2=4.06$, $df=4$).

Table 1 shows the frequency of persistent reactions relative to the total numbers of positive reactions. 81 positive reactions were found and 14 (17%) of these were still visible at D21. We found no late reactions appearing after D7 and thus no evidence of active sensitization. Of the 8 patients with mild/moderate persistent local reactions, 7 had pruritus, 8 erythema, 6 hyperpigmentation and 1 severe infiltration. 4 patients had 2–3 persistent reactions and the other 4 persons had 1 such reaction each. 11 different allergens gave persistent reactions (Tables 1, 2), 8 a single such reaction, with nickel sulfate, potassium dichromate and colophony being represented 2×.

Discussion

Persistent reactions seemed to be more frequent in patients with multiple strong patch test reactions (Table 2).

In a previous study, 23 patients were followed after patch testing until their reactions disappeared. Reactions persisted for 11–18 days depending on the age of the patients (3). Patch-test reactions may persist for 8–9 months after patch testing with chromate (1). 1 patient is described, actively sensitized by camphoroquinone, whose reaction persisted more than 65 days (4), and Fowler et al. (5) and Nasca et al. (6) described 2 patients with reactions of up to 18 months duration after sensitization with squaric acid dibutyl ester. Kanerva et al. (1) observed 6 cases of long-lasting allergic patch tests in a period of 4.5 years. MacFarlane et al. (7) reported delayed reactions appearing after 4 days in 7% of consecutively tested eczema patients. Chalidapongse & Aldridge (8) reported 1 patient who reacted to para-tertiary-butylphenol (PTBP) at D21 and showed exactly the same

pattern on repeat testing. Bruze et al. (9) recently described exceptionally late patch test reactions to monovalent gold salts, which persisted for more than 2 months in 6 of 10 patients.

We found no late reactions indicative of active sensitization (10) in this study, confirming the safety of the TRUE Test™ as a diagnostic procedure.

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