

Clinical atopy score and TEWL are not correlated in a cohort of metalworkers

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Key words: transepidermal water loss; atopy score; bioengineering methods; irritant contact dermatitis; occupational. © Munksgaard, 1997.

Atopy score (1) is a clinical assessment which might be expected to determine the risk of irritant contact dermatitis. Transepidermal water loss (TEWL) can be measured by an evaporimeter and assesses barrier function. As persons with poor barrier function are more likely to develop irritant contact dermatitis, the relationship between atopy score and TEWL was investigated.

Patients and Methods

We studied 204 unselected metalworker trainees as part of PROMETES (Zürich Prospective Metal Workers Eczema Study) of whom 6% had an atopy score of 10 or above and had to be considered atopics. TEWL was measured at the middle of both forearms and the dorsal side of both hands with an evaporimeter (Tewameter, Courage & Khazaka, Cologne, Germany), following the guidelines of the ESCD (2). Irritation with NaOH, SLS, 90% and 95% solutions of DMSO has been described elsewhere (3). The software package SPSS 7.5 was used for computing the Pearson correlation coefficients between the parameters measured.

Results

The population examined was not significantly different from the "normal" population of Diepgen (4), 4.5% of whom had an atopy score of 10 or above. Pearson's analysis did not show any significant correlation between atopy score and the TEWL values measured.

Discussion

Our findings are in accordance with Nöring et al. (5), who studied TEWL on the forearm, back and palm, though they did not perform any irritation tests. Thus, our results

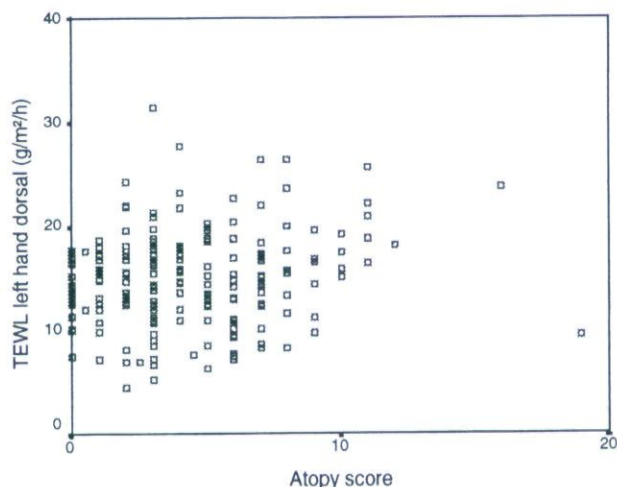


Fig. 1. The relationship between atopy score and TEWL on the left hand (no significant correlation between the parameters by the Pearson correlation).

verify that TEWL is independent of the atopy score and remains important as a measure of barrier function.

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Table 1. Correlation between atopy score and TEWL before and after irritation

	Atopy score	TEWL left H.	TEWL right H.	TEWL left FA	TEWL right FA	TEWL NaOH	TEWL DMSO 90	TEWL DMSO 95	TEWL SLS
Atopy score	×								
TEWL left H.	Ø	×							
TEWL right H.	Ø	×	×						
TEWL left FA	Ø	×	×	×					
TEWL right FA	Ø	×	×	×	×				
TEWL NaOH	Ø	×	×	×	×	×			
TEWL DMSO 90	Ø	×	×	×	×	×	×		
TEWL DMSO 95	Ø	×	×	×	×	×	×	×	
TEWL SLS	Ø	×	×	×	×	×	×	×	×

×-significant correlation ($p \leq 0.05$); Ø-no significant correlation; H-hand; FA-forearm.

correlated to irritation with DMSO, but not with NaOH and SLS. *Exp Dermatol* 1997; 6: in press.

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Contact allergy to musk moskene in a perfumed moisturizing cream

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Key words: allergic contact dermatitis; musk moskene; fragrance; fragrance mix; cosmetics; balsam of Peru; oak moss; patch testing technique; false-negative reaction; cross-sensitivity. © Munksgaard, 1997.

Case Report

A 56-year-old woman presented with acute facial eczema within a few weeks of using a new moisturizer. There was no past history of skin disease. The eczema failed to respond to topical therapy but settled after a course of oral prednisolone. Patch testing was carried out (Finn Chambers® on Scanpor® tape, read at 2 and 4 days) to a modified standard series, a face series, the patient's own perfume, hairspray and cosmetics, and the facial moisturizer suspected. She had positive patch test reactions to musk ambrette in the face series (++), the facial moisturizer as is (++) and the perfume in the moisturizer at 5% (++) and 1% (+). 50 controls tested to the perfume at 5% were negative. Further patch testing to the individual ingredients of the perfume revealed positive reactions to oak moss 2% pet. (++) and musk moskene 5% pet. (++) . Patch testing to the oak moss in the fragrance mix was also positive (++) , despite a negative patch test to fragrance mix itself. Photopatch tests were not performed.

Discussion

In the standard series, fragrance mix and balsam of Peru are used for screening for perfume sensitivity and are estimated to detect 70–80% and 50% of allergic reactions, respectively (1). Johansen & Menné (2) have reviewed the frequency of reactions to fragrance mix and its constituents. Although 5.5% of 8215 patients had positive reactions to fragrance mix, only 1/2 had reac-

tions to 1 or more of the individual constituents. Conversely, as in our patient, a negative reaction can occur to fragrance mix with a positive reaction to 1 or more of the ingredients (3).

Musk moskene is the trade name for 1,1,3,3,5,-penta-methyl-4,6-dinitroindan. It has been reported as not causing phototoxicity, photoallergy or contact sensitivity in the guinea pig (4). However, it has been reported as causing facial pigmented contact dermatitis due to its presence in the perfume of a rouge (5). Cross-reactions between musk ambrette and musk moskene have previously been reported (6).

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