

Contact sensitization in atopic dermatitis: results of a prospective study of 89 cases in Tunisia

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The frequency of contact sensitization in patients with atopic dermatitis (AD) has been well documented in several studies (1–6). However, we do not have a precise idea of its frequency in Tunisia. The aim of our study was to evaluate the frequency of contact sensitization in the course of AD within a sample of Tunisian population.

Patients and Methods

We have carried out a prospective study over a period of 8 months

(October 2005 to May 2006), by investigating all patients of our outpatient dermatology department, having AD. The clinical diagnosis of AD was made according to the diagnostic criteria of Hanifin and Rajka (7). The severity of AD was evaluated by the SCORAD index (8). The European Standard Series (except primin) was applied to all patients. Special series (e.g. preservatives, topical corticosteroids, textile, and topical drugs), and personal used products were tested whenever necessary. All the series were provided by Chemotechnique Diagnostics (Sweden). Patch testing was performed with Finn chambers®. Reactions were evaluated at D2 and D3 according to International Contact Dermatitis Research Group (ICDRG) guidelines. The resulting data were analysed statistically using the program (STATGRAPHIC PLUS®). The statistical significance was fixed with $P < 0.05$.

Results

Over this period of 8 months we have tested 89 patients presenting AD. There have been 63 children and 26 adults. The mean age was 69 months for the children and 34 years for adults. The sex-ratio was 1.1. Patch tests were positive in 42.7% (38/89) and relevant in 38.2% (34/89) of the cases. The results are summarized in Table 1. The most frequent allergens were nickel (24.7%), chrome (7.9%), cobalt (7.9%), parabens (4.5%), lanolin (3.4%), and para-phenylenediamine (3.4%). Patch tests were positive in 50% of adults and 39.7% of children. The mean course of AD in patients

having at least 1 positive patch test was 76.6 months versus 44.2 months for patients who have negative patch tests. The duration of the course of AD was significantly correlated to the risk of contact sensitization with $P = 0.017$. Patch tests were more frequently positive in severe AD (60.9%) than moderate (37.5%) than mild (30%).

Comments

Several studies show a frequency of contact sensitivity of the order of 40% in AD (1–6). In our study, we have found a contact sensitization in 42.7% of all patients with AD, and the prevalence was higher (60.9%) in patients with severe AD. According to Barbaud et al. (5) the risk of contact sensitization in patients with AD is similar to that of population at a high risk of developing contact allergy. We have also found that the prevalence of contact sensitization is correlated to the duration of the course of AD. This could be explained by the numerous and protracted treatments with topical agents, which increase the risk of contact sensitization. The allergens frequently incriminated in AD are nickel, fragrances, Myroxylon pereirae, lanolin, neomycin, and emollients (9). In our study, metals were most frequently positive (nickel, chrome, and cobalt). However, fragrances were found to be rarely positive.

Conclusion

The contact sensitization seems to be frequent in Tunisian AD patients.

Table 1. Results of patch tests

Allergen	Number of positive patch tests	Percentage of positive reactions (%)
Nickel sulfate	22	24.7
Potassium dichromate	7	7.9
Cobalt chloride	7	7.9
Paraben mix	4	4.5
PPD	3	3.4
Lanolin	3	3.4
Thiuram mix	2	2.2
Cl+Me-isothiazolinone	2	2.2
Balsam of Peru	1	1.1
Epoxy resin	1	1.1
Fragrance mix	1	1.1
PTBPF resin	1	1.1
Budesonide	1	1.1

PTBF, para-tertiarybutyl-phenol-formaldehyde; PPD, para-phenylenediamine.

References

1. De Groot A C. The frequency of contact allergy in atopic patients with dermatitis. *Contact Dermatitis* 1990; 22: 273–277.
2. Cronin E, McFadden J P. Patients with atopic eczema do become sensitized to contact allergens. *Contact Dermatitis* 1993; 28: 225–228.
3. Guillet M H, Guillet G. Enquête allergologique chez 251 patients atteints de dermatite atopique modérée ou sévère. *Ann Dermatol Venereol* 1996; 123: 157–164.
4. Giordano-Labadie F, Rancé F, Pellegrin F et al. Frequency of contact allergy in children with atopic dermatitis: results of a prospective study of 137 cases. *Contact Dermatitis* 1999; 40: 192–195.
5. Barbaud A, Reichert-Penetrat S, Granel F, Weber F, Schmutz J-L. Fréquence de l'allergie de contact chez les sujets avec ou sans dermatite atopique. *Ann Dermatol Venereol* 2001; 128: 1389–1390.
6. Makela L, Lammintausta K, Kalimo K. Contact sensitivity and atopic dermatitis: association with prognosis, a follow-up study in 801 atopic patients. *Contact Dermatitis* 2007; 56: 76–80.
7. Hanifin J M, Rajka G. Diagnostic features of atopic dermatitis. *Acta Derm Venereol* 1980; 92: 44–47.
8. European Task Force on Atopic Dermatitis. Severity scoring of atopic dermatitis. *Dermatology* 1993; 186: 23–31.
9. Rancé F, Giordano-Labadie F. Intérêt des tests épicutanés dans la dermatite atopique du nourrisson. *Rev Fr Allergol Immunol Clin* 2001; 41: 373–381.

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