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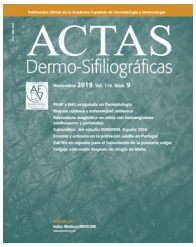

CASE AND RESEARCH LETTER

[Translated article] Usefulness of Patch Tests in the Management of Generalized and/or Disseminated Eczema: Experience at a Tertiary Hospital☆

Utilidad de las pruebas epicutáneas en el manejo de pacientes con eccemas generalizados o diseminados: nuestra experiencia en un hospital terciario

To the Editor:

Generalized and/or disseminated eczema is challenging in terms of diagnosis and treatment. This condition can be a manifestation of atopic dermatitis or allergic contact dermatitis. In the latter, quality of life can be increased significantly by identifying and avoiding the relevant allergens.

With the aim of determining the usefulness of patch testing in affected individuals, we performed a retrospective study of 44 patients with generalized and/or disseminated eczema seen at our contact dermatitis department between 2013 and 2017. Eczema was considered generalized when it affected most of the body surface and disseminated when it affected 3 or more sites. We recorded variables associated with patients' characteristics (age, sex, occupation, and diagnosis of atopic dermatitis), as well as the allergens assessed and the results of patch tests (positive allergens and their relevance). All patients were assessed using the standard series of the Spanish Contact Dermatitis and Skin Allergy Research Group (GEIDAC)[1]. Depending on the clinical setting, specific series were added (Chemotechnique) in some cases (26 patients), as were the patient's own products (22 patients). Systemic corticosteroids and other immunosuppressive therapies were discontinued before patch testing. Testing was performed during remission periods. The drugs were restarted on the day of the last reading. Patients who could not suspend therapy were excluded. Data were collected using Microsoft Excel 2010, and the statistical analysis was performed using IBM SPSS Statistics for Windows, Version 20.1 (IBM Corp.).

Women accounted for 56.8% of the 44 patients (mean age, 57 years). Most were not working. The results of patch testing were positive in 28 cases (63%). Several patients had more than 1 positive result: a total of 54 positive results were recorded. Of the 28 patients, 16 (57.1%) had at least 1 relevant positive result. Table 1 shows the rates for positive results and relevance of the different allergens. Nickel was the most common allergen (18.5%), followed by isothiazolinones (14.8%) and paraphenylenediamine (5.6%). Isothiazolinones were the most relevant allergens (20.6%), whereas nickel and paraphenylenediamine had a relevance of 8.8% and 5.9%.

Atopic dermatitis was recorded in 25 patients (57%), with most diagnosed before testing. Atopic dermatitis was diagnosed more frequently after testing in patients with negative results (Table 2). We found no significant differences when we analyzed patients by age, sex, and occupation.

Our results support the use of patch testing in patients with generalized and/or disseminated eczema. Nickel was the most common allergen, whereas isothiazolinones were the most relevant. This finding is consistent with the high rate of sensitization to isothiazolinones during the study period. Nevertheless, a notable reduction has recently been detected, possibly owing to more restrictive legal measures[2,3]. We also detected positive results to many other allergens that are standard ingredients in cosmetics and hygiene products, especially preservatives. Our results agree with those reported elsewhere[4–7]. Therefore, the most widely reported allergens in affected patients are nickel[4], balsam of Peru[4], imidazolidinyl urea[5], propyleneglycol[5], diazolidinyl urea[5], DMDM hydantoin[5], paraphenylendiamine[6], quaternium-15[7], and formaldehyde[7].

It is interesting to note that most allergens yielding positive results were included in the standard GEIDAC series, except for limonene hydroperoxide (1.9%), linalool hydroperoxide (3.7%), and disperse orange 3 (1.9%).

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Table 1 Frequency and Relevance of Allergens With Positive Patch Test Results[a].

	Total positive cases, No. (%)	Relevant positive cases, No. (%)
Nickel	10 (18.5)	3 (8.8)
Methylchloroisothiazolinone/ methylisothiazolinone	8 (14.8)	7 (20.6)
Methylisothiazolinone	4 (7.4)	4 (11.8)
Patient's own products	4 (7.4)	3 (8.8)
Paraphenylenediamine	3 (5.6)	2 (5.9)
Formol	2 (3.7)	1 (2.9)
Bronopol	2 (3.7)	2 (5.9)
Linalool	2 (3.7)	2(5.9)
Cobalt	2 (3.7)	1 (2.9)
Fragrance mix I	2 (3.7)	2 (5.9)
Thiomersal	2 (3.7)	1 (2.9)
Gold	2 (3.7)	0 (0)
Coconut diethanolamide	1 (1.9)	0 (0)
Caine mix	1 (1.9)	0 (0)
Triclosan	1 (1.9)	0 (0)
Limonene	1 (1.9)	1 (2.9)
Thiourea	1 (1.9)	1 (2.9)
Diphenylguanidine	1 (1.9)	1 (2.9)
Disperse orange 3	1 (1.9)	1 (2.9)
Chrome	1 (1.9)	1 (2.9)
Parabens	1 (1.9)	0 (0)
Colophony	1 (1.9)	0 (0)
Fragrance mix II	1 (1.9)	1 (2.9)
Count	54 (100)	34

[a] Positive results in patch testing. The allergens are ordered by frequency. Their relevance is shown in the right-hand column.

Table 2 Comparison of the Results of Patch Testing in Patients With and Without Atopic Dermatitis[a].

		[0,3–5]Patch test results		
		Positive, No. (%)	Negative, No. (%)	Total No. (%)
[3,0]Generalized and/or disseminated eczema	Patients previously diagnosed with atopic dermatitis	10 (35.7)	6 (37.5)	16 (36.4)
	Patients diagnosed with atopic dermatitis after patch testing	3 (10.7)[a]	6 (37.5)[a]	9 (20.5)
	Nonatopic patients	15 (53.6)	4 (25)	19 (43.2)
	Total	28 (100)	16 (100)	44 (100)

[a] Statistical significance was set at $P < .05$ (2-sided equality of proportions). Empty cells were not included in the test. The test assumed equality of variance and was adjusted for all comparisons within a row using the Bonferroni correction ($\chi^2 = 5.505$; $P = .049$).

The inclusion of limonene hydroperoxide and linalool hydroperoxide in the Spanish standard series is somewhat controversial[1,2]. Given the high rate of positive results we recorded, we believe that their inclusion is justified. Moreover, all patients undergo testing for these allergens in our unit.

Therefore, in the initial study of patients with generalized and/or disseminated eczema in Spain, we recommended using the GEIDAC standard series, including limonene hydroperoxide and linalool hydroperoxide. Furthermore, depending on the clinical history, other series and the patient's own products can also be tested.

Patch testing proved useful in the management of patients with generalized and/or disseminated eczema, even when the results were negative, since they made it possible to diagnose adult atopic dermatitis, as reported in the literature[8,9].

Our study is limited by its reduced sample size and the fact that the determination of the relevance of the allergen was subjective. However, the paucity of data on patch testing in patients with generalized and/or disseminated eczema and the results we obtained constitute the rationale for the present study.

In conclusion, we recommend patch testing in patients with generalized and/or disseminated eczema, since they are a major aid for identifying and avoiding potentially involved allergens. Furthermore, negative results can help in the diagnosis of adult atopic dermatitis. Lastly, we recommend an initial study including the GEIDAC standard series, together with limonene hydroperoxide and linalool hydroperoxide.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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