

Is Euxyl K400 patch testing useful in the general population?

Ariel Callero^{1*}, Eva Perez-Rodriguez¹, Felipe Heras-Mendoza², Juan Antonio Martinez-Tadeo¹, Jose Carlos Garcia-Robaina¹, and Luis Conde-Salazar²

¹Universitary Hospital Nuestra Señora de Candelaria, Allergy Unit. 38010 Santa Cruz de Tenerife, Spain.

²Institute Carlos III, Occupational Dermatology, 28029 Madrid, Spain

To the editor:

Euxyl K400 (Schulke & Mayr GmbH Co., Norderstedt, German) is added as preservative to cosmetics and industrial products for its antimicrobial activity. It has 2 active components: methyl-dibromo glutaronitrile, and 2-phenoxi-ethanol. Recently sensitizations to this product has been reported [1, 2], most of them in an occupational setting, leading to its inclusion in some commercial standard batteries for patch testing as True Test (Stallergenes, Antony, France).

We performed an observational retrospective study to determine the actual relevance of this allergen in patients studied because occupational contact dermatitis. A sample of 150 patients was randomly selected from all patients referred to Department of Occupational Dermatology in the Institute Carlos III and University Hospital Nuestra Señora de Candelaria, both in Spain. Patients were studied with a 34 allergens patch test battery, which included 29 allergens proposed by the Spanish Group of Interest for Contact Dermatitis (Grupo Español de Investigación Dermatitis de Contacto y Alergia Cutánea, GEIDAC).

Additional batteries were used in some patients depending on their professional exposure.

We selected 81 men and 69 women, aged 16–63 years (mean, 39.65 years), working in metallurgic industry and automobile (21.4%), building (15.3%), cleaning (12%), hairdressing (11.3%), catering (7.3%), health services (6.7%), office (6%), and others professions (20%).

Four patients (2.67%)—3 male metallurgic industry workers and 1 female cleaning worker, aged 37–57 years (median, 47.27)—were sensitized to Euxyl K400. All 4 patients presented hands eczema. In the 3 male patients there were a concordance between the patch test results and current exposition; however, the woman had no known exposition and her sensitization was classified as unknown relevance (Table 1).

Frequency of sensitization rise to 6.25% between metallurgic and automobile industry workers. Most of them were cosensitized to other bactericide substances of their work as formaldehyde, and formaldehyde releasers as diazolidinil and imidazonidinil urea or Quaternium 15.

*Correspondence: Ariel Callero

Universitary Hospital Nuestra Señora de Candelaria, Carretera General del Rosario 145, C.P. 38010 Santa Cruz de Tenerife, Spain

Tel: +34922602220

E-mail: arielcallero@hotmail.com

Received: June 4, 2017

Accepted: July 11, 2017

This is an Open Access article distributed under the terms of the Creative Commons Attribution. Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Table 1. Clinical characteristics of patients sensitized to Euxyl K400

Sex	Age (yr)	Profession	Years working	Gloves	Location of lesions	Improved holidays	Cosensitization
Male	58	Metallurgic industry	36	Rubber	Hands/forearms	Yes	No
Female	46	Cleaning services	15	No	Hands	Yes	No
Male	48	Building industry	10	Rubber	Generalized	Yes	PPDA y diazolidinil urea
Male	37	Auto motion	16	No	Hands/forearms	No	Formaldehido

PPDA, para-fenilendiamine.

Data from this sample are similar to those from other published series [3, 4]. However our study population is not general population, but patients referred to a specialized centre for occupational dermatitis, so most sensitizations were clinically relevant.

Other retrospective demographic studies showed that Euxyl K400 sensitization almost did not exist in general population [5]. Ability to sensitizing and to elicit symptoms seems to be circumscribed to occupational setting in most cases [6].

In our experience, some allergens as Euxyl K, parabenes mix, chinoleine mix or lactones have very low relevance in general populations, although they can be found as sensitizers in a small number of exposed workers.

We suggest that Euxyl K400 should be tested in case of suspected occupational contact dermatitis, especially in metallurgic or automobile industry workers. On the other way, relevance of this allergen in general population does not seem demonstrated enough, so we speculate that its usefulness in general clinical practice is going to be limited.

Anyway, most studies in general population are needed; the inclusion of this allergen in standard battery will allow confirming or refusing this hypothesis.

REFERENCES

1. Bordel-Gómez MT, Miranda-Romero A. Contact sensitization to Euxyl K-400. *Actas Dermosifiliogr* 2009;100:201-4.
2. McFadden JP, Ross JS, Jones AB, Rycroft RJ, Smith HR, White IR. Increased rate of patch test reactivity to methylidibromo glutaronitrile. *Contact Dermatitis* 2000;42:54-5.
3. Muñoz Lejarazu D. Contact dermatitis: Alergológica-2005. *J Investig Allergol Clin Immunol* 2009;19 Suppl 2:34-6.
4. Wilkinson JD, Shaw S, Andersen KE, Brandao FM, Bruynzeel DP, Bruze M, Camarasa JM, Diepgen TL, Ducombs G, Frosch PJ, Goossens A, Lachappelle JM, Lahti A, Menné T, Seidenari S, Tosti A, Wahlberg JE. Monitoring levels of preservative sensitivity in Europe. A 10-year overview (1991-2000). *Contact Dermatitis* 2002;46:207-10.
5. Aguilar-Bernier M, Bernal-Ruiz AI, Rivas-Ruiz F, Fernández-Morano MT, de Troya-Martín M. Contact sensitization to allergens in the Spanish standard series at Hospital Costa del Sol in Marbella, Spain: a retrospective study (2005-2010). *Actas Dermosifiliogr* 2012;103:223-8.
6. Callero-Viera A, Heras-Mendoza F, Martín-Fernández L, Conde-Salazar L. Hypersensitivity to formaldehyde and formaldehyde-releasers in occupational dermatitis. A 6-year study. *Piel* 2011;26:315-9.