

## CONTACT POINT

## Contact urticaria caused by tocopherol

Tatiana Sanz-Sánchez<sup>1</sup>  | Beatriz Núñez Acevedo<sup>2</sup> | Cristina Rubio Flores<sup>1</sup> | Rosa M. Díaz-Díaz<sup>1</sup><sup>1</sup>Department of Dermatology, Hospital Universitario Infanta Sofía, Madrid, Spain<sup>2</sup>Department of Allergy, Hospital Universitario Infanta Sofía, Madrid, Spain

## Correspondence

Tatiana Sanz Sánchez, Department of Dermatology, Hospital Universitario Infanta Sofía, Paseo de Europa, 34, 28702 San Sebastián de los Reyes, Madrid, Spain.  
Email: tatiana@aedv.es**KEYWORDS:** allergic contact dermatitis, CAS no. 10191-41-0, case report, contact urticaria, cosmetics, tocopherol

Contact urticaria can be caused by cosmetic products, for instance by dyes, preservatives, fragrances, sunscreens and ingredients derived from plants and animals.<sup>1</sup> Vitamin E may be found in many cosmetic products as tocopherol or as its esterified form, tocopheryl. Side effects from the use of tocopherol are uncommon, despite widespread use.<sup>2</sup> We report a case of contact urticaria after the use of a cosmetic product containing tocopherol.

## CASE REPORT

A healthy 11-year-old girl was referred for investigation of an episode of pruritus and facial oedema minutes after applying a cleansing water. Neither respiratory nor mucosal symptoms or lesions were reported. The patient's past history was unremarkable. An open test on the forearm with cleansing water "as is" gave a positive result after 30 minutes, with the appearance of a 28 × 15-mm wheal reaction that disappeared within <24 hours; no other lesions were observed until 96 hours later. Five control subjects showed no reactions in this open test. The components of this cosmetic product that were included in fragrance and cosmetic series from Chemotechnique Diagnostics (Vellinge, Sweden) were tested in duplicate by open application on both forearms. We only observed a wheal with tocopherol 10% pet. after 30 minutes, which resolved within 24 hours on both forearms. The other ingredients studied, namely, phenoxyethanol, hexyl cinnamal, benzyl salicylate and linalool, gave negative results. We could not perform further tests with all of the other ingredients, because they were not supplied by the manufacturer. The patient has not suffered from recurrences after avoiding products containing vitamin E.

## DISCUSSION

Fragrances and preservatives are the most common cosmetic allergens, but the pattern of sensitivity to ingredients keeps changing,

because the composition of the products is continually changing. The cosmetic use of vitamins has increased because they are considered to be natural components.<sup>3</sup> Vitamin E is contained in many cosmetic products because of its antioxidant and anti-ageing properties. Tocopherol (CAS no. 10191-41-0 for DL-tocopherol) is a rare cause of contact dermatitis and an exceptional cause of contact urticaria.<sup>2-4</sup> Reviewing the literature, we found only 1 case of contact urticaria, reported in 1991 by de Groot et al, who described erythema and urticarial papules on the face and neck with oedema of the eyelids after the first-time use of a face cream containing tocopheryl acetate, and another article on contact urticaria caused by a vitamin E preparation in 2 siblings in 1974 by Kasssen et al.<sup>2,4</sup> The majority of cases of contact dermatitis are local reactions, although some cases have been reported of widespread lesions despite local application.<sup>5,6</sup> De Groot et al recommended tocopherol 10% pet. as a test concentration.<sup>4</sup>

Contact urticaria caused by cosmetics produces a broad spectrum of clinical manifestations; these are usually limited to contact areas, but generalized urticaria with or without extracutaneous manifestations that can be exceptionally life-threatening have been reported.<sup>7</sup>

## Conflict of interest

The authors declare no potential conflict of interests.

## ORCID

Tatiana Sanz-Sánchez  <http://orcid.org/0000-0002-5796-7680>

## REFERENCES

1. Verhulst L, Goossens A. Cosmetic components causing contact urticaria: a review and update. *Contact Dermatitis*. 2016;75:333-344.
2. Kosari P, Alikhan A, Sockolov M, Feldman SR. Vitamin E and allergic contact dermatitis. *Dermatitis*. 2010;21:148-153.

3. Ramírez Santos A, Fernández-Redondo V, Pérez Pérez L, Concheiro Cao J, Toribio J. Contact allergy from vitamins in cosmetic products. *Dermatitis*. 2008;19:154-156.
4. de Groot AC, Weyland JW, Nater JP. *Unwanted Effect of Cosmetics and Drugs Used in Dermatology*. Amsterdam, Netherlands: Elsevier; 1994.
5. Matsumura T, Nakada T, Iijima M. Widespread contact dermatitis from tocopherol acetate. *Contact Dermatitis*. 2004;51:211-212.
6. Garcia-Bravo B, Mozo P. Generalized contact dermatitis from vitamin E. *Contact Dermatitis*. 1992;26:280.
7. Pasche-Koo F, French L, Piletta-Zanin P-A, Hauser C. Contact urticaria and shock to hair dye. *Allergy*. 1998;53:904-905.

**How to cite this article:** Sanz-Sánchez T, Núñez Acevedo B, Rubio Flores C, Díaz-Díaz RM. Contact urticaria caused by tocopherol. *Contact Dermatitis*. 2018;1-2. <https://doi.org/10.1111/cod.13099>