

BRIEF REPORT

Allergic contact dermatitis caused by capryloyl glycine in an atopic dermatitis patient

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INTRODUCTION

A wide range of personal care products for atopic dermatitis is now available. Although attempts are made to use ingredients with low sensitizing potential, these products are not exempt from developing allergic contact dermatitis in atopic dermatitis patients.

MAIN TEXT

A 72-year-old man was referred to our Contact Eczema Department due to a worsening and change of pattern of eczematous lesions of his atopic dermatitis in the last 4 months. The patient stated that he had changed his body moisturizer 6 months ago on the recommendation of his dermatologist. The product was Lipikar Baume AP+ emollient (La Roche Posay; L'Oréal). The change in the pattern of atopic dermatitis, presenting lesions on the trunk and generalized extremities, appeared 3 weeks after starting Lipikar Baume. We advised him to avoid the new body moisturizer and to start treatment with oral prednisone (30 mg per day for 7 days). Full improvement was observed at 7 days. The repeat open application test (ROAT) was performed on the antecubital flexural surface twice daily. An eczematous rash was observed 3 days after

starting the ROAT. The manufacturer was contacted and kindly provided the ingredients individually to schedule the patch test.

Patch tests were performed with the European Comprehensive Baseline Series (Chemotechnique Diagnostics), cosmetics series (Chemotechnique Diagnostics), Lipikar Baume AP+ 'as is' and all individual Lipikar Baume AP+ ingredients provided by the manufacturer. Patches were occluded with Finn Chambers® Aqua on Scanpor (AllergEAZE, Smart Practice) for 48 h and read at 96 h. Results were interpreted according to the criteria of the International Contact Dermatitis Research Group. Patch tests were read on day (D) 2 and D4. The patient showed a positive patch test reaction to the Lipikar Baume AP+ emollient (+++/+++), and capryloyl glycine 1% in 50% aq./50% eth. (+/+++; edge pattern), both at D2 and D4 (Figure 1). Fourteen controls subjected to the patch test with Lipikar Baume AP+ and capryloyl glycine were all negative. The caprylic/capric triglyceride 10% pet (in-house prepared) patch test was performed on our patient, who was negative for D4.

Allergic contact dermatitis caused by capryloyl glycine as an ingredient of Lipikar Baume AP+ emollient was diagnosed. The use of a different emollient that does not contain capryloyl glycine was recommended. A review at 3 months showed good control of atopic dermatitis.

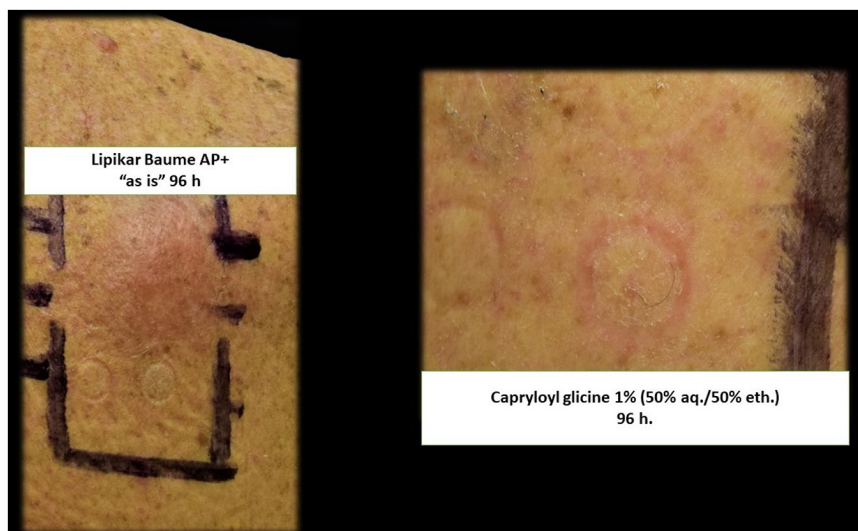


FIGURE 1 (a) Positive patch test to D4 for Lipikar Baume AP+ 'as is' (+++/+++). (b). Patch test positive to D4 for capryloyl glycine 1% aq. (50% aq./50% eth.) (+/+++; edge pattern)

Capryloyl glycine (CG) (CAS n°. 14246-53-8) is a lip amino acid or amino acid alkyl amide (AAAA) used in the cosmetic field for its many properties. It is made up of glycine and caprylic acid. It is present in both rinse-off and leave-on products. CG has surfactant and preservative properties. CG appears as an ingredient in products for acne, seborrheic dermatitis and atopic dermatitis,¹ as it is able to inhibit the proliferation of *Staphylococcus aureus*, amongst other microorganisms. Recent studies extend the use of CG 4% cream (associated with soy isoflavonoids) for the treatment of hypertrichosis,² although it is not yet marketed. Mangodt et al.³ published the first allergic contact dermatitis case caused by CG in 2019. Since then, no further cases have been reported. CG is not marketed for patching. In relation to the chemical properties of the molecule, it would be advisable to patch it at 1% diluted in equal parts with water/ethanol (50% aq./50% eth.), as recommended by the same authors. There are currently no studies available on how to patch this allergen, nor is there any information available on the sensitisation potential of this allergen. In addition, it might be useful to patch it at concentrations above 1%, suggesting 2% in petrolatum to minimize the irritant effect of the allergen, although no study on this has yet been reported.

Caprylic acid is used for the manufacture of CG and capric/caprylic triglyceride. Although it has not been proven, there could be a cross-reaction between the two allergens, although this should be interpreted with caution. Allergic contact dermatitis to capric/caprylic triglyceride present in cosmetics has been reported in the literature.^{4,5} Oleoyl tyrosine, which is an AAAA, has recently been reported as a new allergen present in sunscreens.⁶

CONCLUSION

In summary, we present a new case of allergic contact dermatitis to capryloyl glycine. This allergen is present in cosmetic products targeting diseases such as atopic dermatitis. The usual tendency of the patient is to change products when they do not 'do well', which possibly directly affects the identification of new cases of sensitisation to capryloyl glycine.

ACKNOWLEDGEMENTS

We are very grateful to L'Oréal for their willingness to provide us with cosmetic ingredients for the patch tests.

CONFLICT OF INTEREST

None to declare.

INFORMED CONSENT

Written informed consent was obtained from the tutor of the patient for publication of this case report.

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