

Further evidence of thioctic acid (α -lipoic acid) being a strong cosmetic sensitizer

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Thioctic acid [α -lipoic acid (α -LA); CAS 1077-28-7] has been identified as a potentially important sensitizer in

cosmetics (1). We report another case of severe facial dermatitis following the use of an “anti-ageing” cream containing this ingredient.

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Case Report

A 31-year-old woman was urgently referred to us for the evaluation of facial dermatitis following daily use



Fig. 1. Clinical presentation of contact dermatitis on the face after application of a new anti-wrinkle cream.

for several weeks of a new anti-wrinkle day cream containing, among other ingredients, vitamin C and α -LA. The patient presented with an entirely erythematous and swollen face, with yellow crusts possibly indicating bacterial superinfection, accompanied by profound itching and burning sensations (Fig. 1). Topical therapy with a hydrocortisone cream, initiated by her general practitioner, had not led to any improvement. Only treatment with a topical mometasone furoate ointment, systemic flucloxacillin and methylprednisolone 0.5 mg/kg, combined with stopping the use of all of her cosmetic products, finally led to resolution.

One month after cessation of systemic corticosteroid treatment, patch tests were performed with the Belgian baseline series, a cosmetic series, and with the patient's own cosmetic products tested 'as is', including the anti-wrinkle day cream. Patch test chambers (Van Der Bend[®], Brielle, The Netherlands) were placed on the upper back for 2 days, and fixed with Fixomull[®]

stretch (BSN Medical GmbH, Hamburg, Germany). Readings, performed according to ICDRG guidelines, only showed positive reactions (++) to the day cream at day (D)2 and D4 (Fig. 2a). Approximately 4 months later, additional patch tests were performed with all single ingredients, including α -LA (supplied by the manufacturer), diluted in-house in appropriate concentrations and vehicles, following recommendations in the literature (2). This time, only α -LA 5% pet. gave strong positive reactions (again ++), at D2 and D4 (Fig. 2b).

Discussion and Conclusion

α -LA, also known as thiocetic acid (INCI) or 1,2-dithiolane-3-pentanoic acid, has antioxidant properties (3), and is therefore used in cosmetics, mainly in "anti-ageing" products. After α -LA had been identified as potential skin irritant (4), Bergqvist-Karlsson et al. reported in 2006 the first 3 patients with severe facial dermatitis caused by this ingredient contained in an "anti-ageing" cream newly launched in Sweden, and mentioned the occurrence of adverse skin reactions in at least 15 other patients. The hitherto reported skin reactions usually occur during the first weeks or months following the use of cosmetics containing this substance, and are mostly severe in nature, often requiring treatment with not only topical but also systemic corticosteroids. Moreover, patch tests with both the products and with α -LA 5% pet. often give strongly positive reactions, and, in dilution series, patients may react to low concentrations such as 0.0025% (1). Recently, a maculopapular rash caused by α -LA in a dietary supplement was reported (5).

In conclusion, we report a fourth case of severe facial dermatitis caused by α -LA in an anti-ageing cream. Clinical and patch test features point to α -LA being a strong contact allergen.

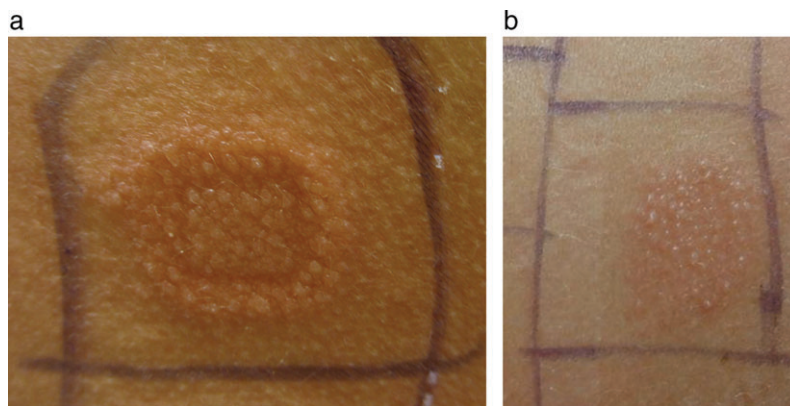


Fig. 2. (a) ++ reaction to 'anti-wrinkle' day cream as is at D4. (b) ++ reaction to α -lipoic acid 5% pet. at D4.

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