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Occupational dermatitis from isothiazolinones in diesel oil

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Key words: Kathon® FP 1.5; isothiazolinones; diesel oil; mechanic; occupational; allergic contact dermatitis. © Munksgaard, 1996.

Kathon® CG in cosmetics caused many complaints in the late 80s in Europe. The very effective isothiazolinones are also widely used in household and industrial situations (1), often causing dermatitis unsuspected by the dermatologist (2, 3). There is not always cross-sensitization between different isothiazolinones (4).

Case Report

A man, aged 43 years, presented with hand eczema of 15 months duration. He had never had any skin complaints before. During the 1st year of the complaints, he did not consult his doctor. The clinical picture had started with vesicular eczema of the fingers; gradually the palms also became involved. The lesions were now becoming hyperkeratotic and showing fissures.

He had been a diesel mechanic at the maintenance garage of a large bus company for 25 years. In his work, he had continuous contact with diesel oil, among many other products. He was unable to work with gloves. Topical treatment with clobetasol-17-propionate did not help much. Initially, the eczema improved during days off and holidays, but by this time, it took 7 weeks to achieve significant improvement. He had recently had an exacerbation after using moist toilet paper.

Patch tests elsewhere had shown a reaction to thimerosal. He was patch tested again with an additional

standard series and a series containing a wide range of materials found in oils, grease and metalworking fluids (mainly from Chemotechnique).

Positive reactions were seen on D3 and D7 to:

	D3	D7
Cl+Me-isothiazolinone 0.01% aq.	++	++
2-methyl-4-isothiazolin-3-one 0.02% aq.	++	++
thimerosal 0.1% pet.	+	+
arnica tincture 10% aq.	?+	+

The reactions to thimerosal and arnica tincture were not relevant. Those to the isothiazolinones were immediately relevant in so far as the moist toilet paper that caused an exacerbation of the hand eczema contained Kathon® CG. Consultation with his occupational physician and the diesel oil supplier revealed the following additional information. For 3 years, Kathon® FP 1.5 had been added, on demand, to the diesel oil in the storage tanks of the bus company, to prevent deterioration, and for the last 4 months, routinely. It is not known exactly how much was added or what the end concentration in the storage tanks was. Kathon® FP contains a mixture of 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one (1.5%) in, mainly, dipropylene glycol. The isothiazolinones are the same as those in Kathon® CG.

Discussion

Petrochemical products like diesel oil are high-grade products vulnerable to micro-organisms. Diesel oil now contains more cyclic hydrocarbons and can therefore contain more water. This, and an increase in the amount of unsaturated hydrocarbons and alkyl nitrates in diesel oil, favours the growth of micro-organisms. To prevent such deterioration, biocides can and are being added. The patient presented had a clearly work-related contact dermatitis, with worsening of the eczema since Kathon[®] FP was added routinely and improvement when not working. In the meantime, the bus company has decided to switch over to another biocide.

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Fixed drug eruption induced by allylisopropylacetylurea

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Key words: fixed drug eruption; allylisopropylacetylurea; sedative; hypnotic; medicaments; positive lesional patch test; drug reactions. © Munksgaard, 1996.

Allylisopropylacetylurea (apronal) is a mild sedative and hypnotic, e.g., Sedormid[®] (Roche). Purpura is its best-known adverse effect (1).

Case Report

A 26-year-old woman presented with round light-brown patches on the cheeks, chin and right shoulder. 4 months previously, she had bought Eve A[®] (SS Pharmaceutical Co. Ltd.) from a drugstore and taken 2 tablets at night for menstrual pain. 2 h later, she got pruritic erythema, followed by pigmented lesions. 2 months and 1 month previously, she had taken 2 tablets of the same drug and developed erythema on the same sites as before, followed by similar pigmented lesions. More recently, she had also had the same erythema after taking 2 tablets of Bufferin L[®] (Lion Co. Ltd.).

She was patch tested on unaffected skin of the back with 10 and 0.1% pet., and on involved skin with 10% pet., of 5 chemicals contained in Eve A[®] and Bufferin L[®]: allylisopropylacetylurea, acetaminophen, caffeine, ethenzamide, and ibuprofen. Only allylisopropylacetylurea 10% pet. was positive on involved skin of the chin (Fig. 1) at 2 and 3 days after application. As a control, allylisopropylacetylurea 10% pet. was applied on 5 normal subjects, resulting in negative response. Then, using allylisopropylacetylurea 10% in dimethylsulphoxide (DMSO), we performed an open patch test on involved skin and a closed patch test on unaffected skin

of the patient, but these were negative. A lymphocyte stimulation test with allylisopropylacetylurea was negative (stimulation index 86%); allylisopropylacetylurea 626 cpm, control 724 cpm.

Discussion

A previous report of fixed drug eruption due to allylisopropylacetylurea (2) showed a positive patch test with 50% pet. Our case demonstrated a positive result with

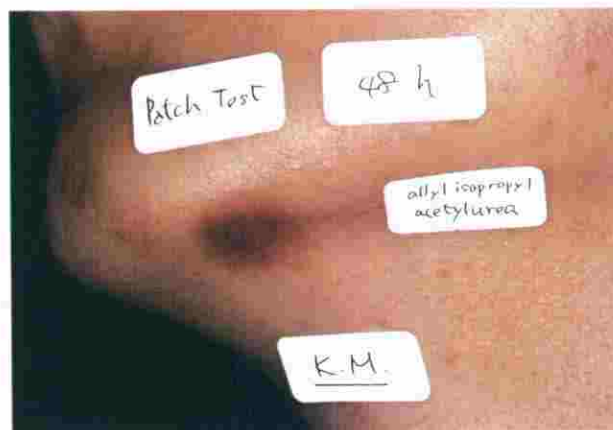


Fig. 1. Hyperpigmented lesion surrounded by erythema, following patch test with allylisopropylacetylurea 10% pet.

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