

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

AKIRA KAWADA¹, MASATARO HIRUMA¹, HIROMITSU NOGUCHI¹, HIROYOSHI INOUE¹, AKIRA ISHIBASHI¹
AND JOSEPH MARSHALL²

¹Department of Dermatology, National Defense Medical College, Namiki 3-2, Tokorozawa City, Saitama 359, Japan

²The Veterans Administration Medical Center, Fresno, CA 93711, USA

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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

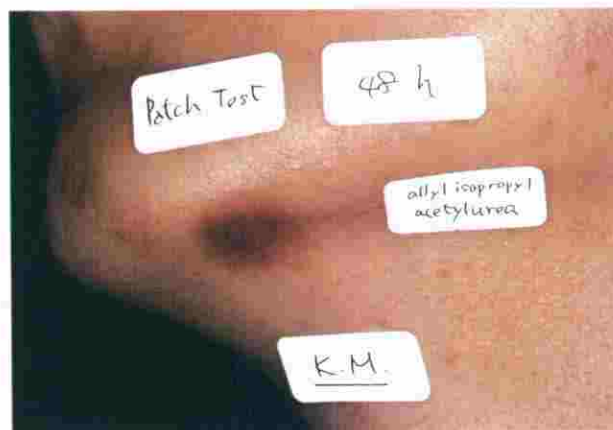


Fig. 1. Hyperpigmented lesion surrounded by erythema, following patch test with allylisopropylacetylurea 10% pet.

10% pet., though normal subjects were negative, suggesting delayed cell-mediated immunity. 10% pet. seems to be preferable, since too high a concentration for patch testing easily elicits false-positive results due to irritancy (3). DMSO is reported to be useful as a vehicle for topical provocation in fixed drug eruption due to some drugs, e.g., sulphamethoxazole and trimethoprim (4). However, allylisopropylacetylurea 10% DMSO in our case showed negative responses to an open patch test on involved skin or a closed test on unaffected skin.

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Contact dermatitis in children

EDWARD RUDZKI AND PAWEŁ REBANDEL

Department of Dermatology, Warsaw School of Medicine, ul. Koszykowa 82a, 02-008 Warsaw, Poland

Key words: allergic contact dermatitis; children; nickel; chromate; fragrance; neomycin; rubber. © Munksgaard, 1996.

During 1970–1994, we patch tested 626 children (353 girls and 273 boys) aged 3 to 16 years, 349 of whom (189 girls and 160 boys) were aged 14 years or less. Part of this material has already been published (1). Positive reactions were obtained in 42.70% (29.67% boys and 51.84% girls) and this difference was statistically significant at $p < 0.05$. As in previous reports, the frequency of contact sensitivity increased with increasing age. Our youngest patient with contact dermatitis was a 6-year-old boy positive to chromium. The frequency of sensitivity to various allergens is shown in Table 1.

Comment

We stress the following.

(a) *Nickel*. A statistically significant difference was found in the frequency of nickel sensitivity between boys (5.49%) and girls (15.30%), but only after the age of 12 years, as observed by others (2–4). Such a difference has also been reported at a younger age (5).

(b) *Chromium*. A 15-year-old boy positive to chromium, at a vocational school for locksmiths, had occupational dermatitis. Occupational dermatitis has been observed previously in children as young as 13–14 years (5).

(c) *Fragrance mix*. Contact sensitivity to fragrance mix began at the age of 9 years, and then increased, especially in girls after the age of 12 years, though not with a statistically significant difference between girls and boys. We also tested with a mixture of cassia and citronella oils (6), to which only girls were positive (2.27%).

(d) *Neomycin*. This antibiotic caused sensitivity most frequently in children aged 9–10 years (13.79%), in which age group neomycin was 2× as frequent as nickel.

Table 1. Positive patch tests in children

Age range (years)	3–14 (n=349) (%)	3–16 (n=626) (%)
Allergens		
nickel sulfate	8.02	11.02
potassium dichromate	4.87	5.43
cobalt chloride	4.87	4.79
mercuric chloride	2.58	3.04
fragrance mix	3.15	3.04
PPD	1.15	3.04
neomycin	2.87	2.40
balsam of Peru	2.87	2.24
mix of cassia and citronella oils	1.15	1.28
turpentine	0.29	1.28
propolis	0.29	1.28
IPPD	0.86	0.96
mercaptobenzothiazole	0.86	0.96
benzocaine	0.57	0.80
colophony	0.86	0.64

(e) *Rubber accelerators*. 6 patients (0.96%) were positive to MBT but none to TMTD. A greater frequency of sensitivity to MBT than to thiuram has also been observed by other authors (4, 7), though not all (2).

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