

Short Communication

Generalized eczema in an 18-month-old boy due to phenoxyethanol in DPT vaccine

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Lovell et al. (1) reported a case of contact eczema due to 2-phenoxyethanol (2-PE) in aqueous cream. The only other reported cases of 2-PE allergy were seen in Italy (2 cases) (2), The Netherlands (3), and Germany (4). 2-PE has been compared to other preservatives in the guinea pig maximization test (5). All the aforementioned argues for a low risk of sensitization.

An 18-month-old boy was referred with a history of 2 episodes of generalized eczema starting within 24 h of routine administration of a DPT (diphtheria, pertussis and tetanus) vaccine (Infanrix[®], SmithKline-Beecham). He had a strong family history of atopic eczema and immediate-type allergy. The dermatitis was more severe the 2nd time, involving the whole body. Treatment with topical corticosteroids cleared it within 10–12 days. However, a 3rd booster vaccination was still required.

In addition to the DPT toxoids, Infanrix[®] vaccine contains polysorbate 80, formaldehyde, aluminium chlorate hexahydrate, aluminium hydroxide, and 2-PE. Patch testing was performed with the complete vaccine and all its individual components in standardized concentrations and vehicles, after the skin of the patient had completely cleared. The irritancy threshold of 2-PE has been determined previously to be >10% (5). The patch test to 2-PE (2% pet.) was positive, showing a crescendo reaction on D2 and D3. A DPT vaccine containing thimerosal as a preservative was therefore used for the subsequent booster (Merieux[®]), to which no skin reaction occurred.

2-PE is effective against a broad spectrum of microorganisms, particularly *Pseudomonas aeruginosa* (6). As early as 1944, 2-PE-soaked compresses were recommended for skin infections (7), and more recently for gram-negative cellulitis in neutropenic patients (8), and prophylaxis in burns (9). Since 1970, 2-PE has increasingly been added to cosmetics and pharmaceuticals, including vaccines (10). The antimicrobial activity of 2-PE in vaccines is well-documented (11), though it is still not widely used as such in Germany, thimerosal being more commonly used.

2-PE is frequently combined with 1,2-dibromo-2,4-dicyanobutane (DBDCB), in a ratio of 1 (DCDCP): 4 (2-PE), as Euxyl[®] K 400 (12–14). The sensitizing potential of Euxyl K 400 is low compared to Euxyl[®] K 100 (Kathon[®] CG).

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