

Patch test reactions and occupational dermatoses caused by hydrogen peroxide

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There is very little information on occupational and allergic contact dermatoses caused by hydrogen peroxide (1, 2).

Materials and Methods

(i) Computerized patch test results for hydrogen peroxide from the Section of Dermatology, Finnish Institute of Occupational Health (FIOH), during 1991–1997 were analyzed.

(ii) Computerized patch test results for hydrogen peroxide from the Department of Dermatology, University of Turku, during 1995–1996 were analyzed.

(iii) Data from the Finnish Register of Occupational Diseases (3, 4) during 1975–1997 were analyzed for occupational dermatoses caused by hydrogen peroxide.

Patch testing at FIOH and in Turku was performed and scored according to the ICDRG (3). Hydrogen peroxide was patch tested at 3% aq. (Chemotechnique Diagnostics, Malmö, Sweden).

Results

During 1991–1997, 130 patients (mainly hairdressers) were patch tested at FIOH because of suspected occupational skin disease. No allergic patch test reactions were observed. 1 patient had an irritant patch test reaction. 59 patients who were suspected of having eczema caused by hairdressing compounds were patch tested in Turku during 1995–1996. None of the patients had an allergic or irritant patch test reaction. The total number of occupational allergic dermatoses reported to the Finnish Register of Occupational Diseases during 1975–1997 was 10,806 cases; none of these were caused by hydrogen peroxide. In the same period, a total of 29,803 occupational dermatoses were reported to the Register, 4 having been caused by hydrogen peroxide.

Discussion

Hydrogen peroxide is a well-known oxidizing agent widely used as a topical antiseptic. In hairdressing, it is used in permanent dyes (in 3 and 5% water solution), in bleaching preparations, and as a neutralizing agent in

permanent waving. The skin-sensitizing properties of 9 different hydrogen peroxide preparations were studied in a maximization test: none induced sensitization (5). Hydrogen peroxide is not listed in the index of the standard textbook by de Groot et al. (6). It is included in the Chemotechnique hairdressers' series. 2 cases of allergic contact dermatitis have been reported from Spain (1, 2). During 1974–1993, we patch tested 35 hairdressers with hydrogen peroxide, and all were negative (7). In an epidemiologic study of hairdressers' skin and respiratory symptoms, we patch tested 54 hairdressers who had skin symptoms (out of a cohort of 355 hairdressers); none had a reaction to hydrogen peroxide (8). In conclusion, the present study and previous data indicate that hydrogen peroxide is a very rare sensitizer.

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