

Table 1. % of patients with occupational allergens detected after various periods

Latent period	All patients		Health service workers	
	1979–82 (n=300)	1993–98 (n=139)	1979–82 (n=30)	1993–98 (n=35)
under:				
3 months	15.7	15.8	36.7	37.1 ²⁾
1 year	39.7	56.1 ¹⁾	63.4	71.4 ²⁾
5 years	70.0	79.1 ¹⁾	90.0	100.0 ²⁾
10 years	87.0	93.5 ¹⁾	96.7	–

¹⁾ $p < 0.05$ (comparison of total patients during 2 periods: 1979–82 and 1993–98).

²⁾ $p < 0.05$ (comparison during the period 1993–98 – all patients and health service workers).

mation about sometimes even rare contactants. Currently, the situation has changed due to increasing privatization of the economy. The patients, afraid of losing their jobs when compensation for occupational diseases is relatively low, more often decline to be tested and do not attend for follow-up examinations. It is difficult, therefore, to be sure how much the decrease in recognition of occupational dermatitis cases is due to improvement in working conditions, and how much the result of changed social conditions.

The delay in recognizing occupational allergic contact dermatitis has changed relatively little. In 1993, we reported that in Warsaw (1), cases of occupational derma-

titis were being recognized significantly later than in Lund 1975 (2).

Table 1 compares the situation in Warsaw in 2 periods: 1979–82 and 1993–98, with regard to total number of patients and health service workers. For the total number of patients, the situation improved only in patients who were sick for longer than 3 months, and the observed differences were statistically significant ($p < 0.05$). However, it is still rare to recognize occupational dermatitis during the 1st 3 months of the illness. The situation is much better among the health service workers, who have easier access to specialists. In this group, in comparison with the total number of patients, occupational dermatitis was recognized in a statistically significant higher % of patients, the same after 3 months as after 1-year and 5-year periods.

During the 5-year period of allergic contact dermatitis duration, its occupational character was recognized among all patients only in the group of health service workers. Both before and now, the main reason for delay in recognizing occupational dermatitis was late referral for specialist opinion and patch testing.

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Occupational dermatoses among laboratory assistants

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Key words: rubber chemicals; natural rubber latex; allergic contact dermatitis; occupational; epidemiology; laboratory workers. © Munksgaard, 1999.

Laboratory workers run a high risk of occupational dermatoses but little, besides case reports, has been published (1).

Methods and Results

Data on occupational dermatoses among laboratory workers in Finland during 1990–1996 were analyzed. Statistics on occupational diseases and classification of occupations from the Finnish Register of Occupational diseases were compiled as previously described (2–5). Allergic dermatoses diagnosed during 1975–1996 at the Finnish Institute of Occupational Health (FIOH) among laboratory assistants in chemical laboratories were compiled from case records. Diagnostic criteria have been reported earlier (2). The cases at FIOH during 1990–1996 are among those in the whole country.

Altogether, 83 cases of occupational dermatoses were reported to the Finnish Register of Occupational Dis-

eases during 1990–1996 from among about 12,000 employed laboratory assistants. Of the 83 cases, 31 were allergic contact dermatitis (ACD), 20 irritant contact dermatitis (ICD), and 18 contact urticaria (CU, including protein contact dermatitis). In addition, 6 cases were unspecified (allergic/irritant) contact dermatitis, 7 other dermatoses (mainly chemical burns), and 1 not specified.

The causes of ACD and CU are given in Table 1. The causes of ICD (20 cases) were: wet work (3 cases), soaps and detergents (3 cases), physical and mechanical (3 cases), barley flour, grains or animal feed (2 cases), and clay, inorganic acids and alkalis, molds, phenol-formaldehyde resin and salicylic acid (1 case each), not notified chemical agents (3 cases), and other not notified agents (1 case).

The incidence rate of contact urticaria from natural rubber latex per 10,000 employed worker years in laboratory assistants was 1.0, compared to 0.2 in all occu-

Table 1. Occupational allergic dermatoses among laboratory assistants during 1990–1996 in Finland

Allergic contact dermatitis	No. 31	Ref.
rubber chemicals	6	
nickel	5	
phenol-formaldehyde resin	3	
epoxy resin	3	
formaldehyde	2	
medications	2	
chromate	1	
dibutylthiourea	1	(14)
4,4'-diphenylmethane diisocyanate (MDI)	1	(15)
glutaraldehyde	1	
hydroxyl ammonium chloride	1	(16)
methacrylates	1	
N-methyl-N-nitroso-p-toluenesulfonamide	1	(7)
potassium persulfate	1	(17)
not notified agents	2	
Contact urticaria	No. 18	
natural rubber latex	8	
cellulase	3	(13)
other enzymes	2	
decorative plants	1	
flour, grains or feed (not specified)	1	
medications	1	
rat	1	
not notified agents	1	

pations (5). The causes of the allergic dermatoses at FIOH during 1975–1996 are given in Table 2. All but 7 patients were laboratory technicians in industrial laboratories.

Discussion

Innumerable allergens are used in laboratories (1), but sensitization documented in chemical laboratories was mostly to well-known allergens, namely rubber chemi-

cals and natural rubber latex, nickel, formaldehyde, phenol-formaldehyde resin and epoxy resin compounds. Contact allergy from accidental exposure to a chemical is often the first clue that other chemicals are potential contact sensitizers (6, 7). Careful patch testing is required to minimize the risk of active sensitization (8–12).

Widespread causes of irritant contact dermatitis are frequent hand washing (wet work, soaps and disinfectants), protective gloves, organic solvents, acids and alkalis.

Contact urticaria is commonly diagnosed among laboratory assistants (3, 4) from natural rubber latex. Other non-infectious biological risks include animal and plant proteins, and enzymes (13).

Some of the cases in this study have previously been described in short reports (Table 1 (7, 13–17), Table 2 (18–20)). Causes of occupational dermatoses among laboratory technicians were recently reviewed in detail (1).

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Table 2. Causes of the allergic dermatoses of 23 laboratory assistants in chemical laboratories, diagnosed as having an occupational skin disease at the Finnish Institute of Occupational Health during 1975–1996

Cause	Male	Female	Total	Ref.
<i>Allergic contact dermatitis</i>				
formaldehyde	0	4	4	
epoxy resin compounds	1	1	2	
phenol-formaldehyde resins	0	2	2	
diisocyanates	0	2	2	(16)
isophorone diisocyanate		1		
4,4'-diphenylmethane diisocyanate (MDI)		1		
rubber chemicals	0	2	2	
chromate	0	1	1	
nickel	1	0	1	
epoxypropyl trimethyl ammonium chloride	0	1	1	(18,19)
mercury	0	1	1	(20)
hydroxylammonium chloride	0	1	1	(16)
N-methyl-N-nitroso-p-toluenesulfonamide	0	1	1	(7)
potassium persulfate	0	1	1	(17)
<i>Contact urticaria</i>				
cellulase/xylanase	0	4	4	(13)
total	2	21	23	

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Benign familial chronic pemphigus (Hailey-Hailey) provoked by contact sensitivity in 2 patients

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Benign familial chronic pemphigus (Hailey-Hailey) is a rare hereditary condition characterized by development of blisters at sites of friction and in the intertriginous areas.

Case Reports

Case no. 1

A 47-year-old man had had Hailey-Hailey for 8 years. His son, father and grandmother also had the disease. He observed that some creams caused irritation and induced blister formation when applied. He was tested when he was symptom-free.

On patch testing, PPD and MCI/MI showed erythema and infiltration at D2 and blisters at D3. Biopsy of the bullous reaction elicited by MCI/MI showed a hyperplastic epidermis, with split formation in the stratum spinosum, and in the papillary dermis, a chronic inflammatory reaction. On electron-microscopy, in the stratum spinosum, early acantholysis with partial separation of the keratinocytes and, in some places, intraepidermal lymphocytes were detected. Between the keratinocytes, the desmosomal connection within the stratum spinosum was opened, with internalization of desmosomes becoming apparent. There was no sign of intraepidermal spongiotic vesicle formation.

um was opened, with internalization of desmosomes becoming apparent. There was no sign of intraepidermal spongiotic vesicle formation.

Case no. 2

Many of a 54-year-old woman's relatives had Hailey-Hailey. Her skin symptoms had started 34 years ago, Hailey-Hailey being verified by histology in 1994. She observed that, particularly after the use of some deodorants and cosmetics, confluent, itchy blisters, then superinfected erosions, developed in the intertriginous areas. When seen in our department, under the breast and in the armpits, 1–2 cm large, extended erosions, erythema, fissures and moderate scaling were noted.

On patch testing, fragrance mix showed infiltration at D1 and a blistering reaction at D3. Biopsy of the positive patch test at D3 showed a hyperplastic epidermis, acantholysis, and perivascular infiltration in the upper dermis.

Discussion

There are few reports of Hailey-Hailey patients having contact allergies (1, 2). Peppiat et al. (1) even suggest that