

Occupational skin diseases in national servicemen and military personnel in Singapore, 1989–1999.

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This is a study of occupational skin disease among military personnel and conscripts in Singapore. All military personnel and conscripts diagnosed with occupational dermatoses in the National Skin Centre, Singapore, between 1989–1999 were studied retrospectively. Conscripts and regulars comprised 7.3% of all occupational skin disease patients seen. All were male, with a mean age of 23 years. Irritant contact dermatitis was more common than allergic contact dermatitis, by 4.4:1. The most common vocations associated with occupational skin diseases are those involving vehicle repairs and maintenance (48%) and food handling (19%). The most common irritants were oil/grease (66%), wet work (23%) and solvents (18%). The most common allergens were food (40%) and chromates (20%). Military personnel and conscripts make up a significant proportion of occupational skin disease patients seen in Singapore.

Key words: occupational dermatoses; allergic contact dermatitis; irritant contact dermatitis; Singapore; military. © Munksgaard, 2001.

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National service is mandatory for all able-bodied Singaporean men aged 18–20 years. Most will be drafted into the army, navy, air force, police force or civil defence force. In the 11 years studied, we have seen a significant number of personnel from these services in our occupational skin disease clinic. The patients include national service conscripts as well as regulars in these services. We have made an 11-year retrospective study of these patients.

Patients and Methods

All case records of national servicemen and military personnel from the occupational skin diseases clinic, National Skin Centre, Singapore, from 1989 to 1999 were studied. We have included regulars as well as conscripts in the study. Being the main tertiary referral centre in this country for occupational skin disease, which requires mandatory reporting by law, the statistics from our centre should be an accurate reflection of the epidemiology of occupational skin disease in Singapore.

All patients were patch tested to our standard series and additional allergens where relevant. Patch testing was done according to the protocol recommended by the International Contact Der-

matitis Research Group (1). Confirmation of allergic contact dermatitis was based on a relevant positive patch test. Irritant contact dermatitis was diagnosed on circumstantial evidence from the clinical history, examination and chemicals handled, together with negative patch testing. For contact urticaria, the diagnosis was based on a relevant positive prick test result.

We have included those with contact urticaria under contact allergy. Patients with irritant as well as allergic contact dermatitis were classified under allergic contact dermatitis.

Results

1059 patients were diagnosed as having occupational skin disease in our clinic in 1989–1999. A total of 77 conscripts and regulars were diagnosed as having occupational skin disease in this period, making up 7.3% of all occupational skin disease seen. The incidence of occupational skin diseases among the various services in 1989–1999 was as follows: army 44 (57%), air force 16 (21%), navy 7 (9%), civil defence 6 (8%), police 4 (5%).

All of these patients were male. Their ages ranged from 18 to 43 years (mean 23, median 21). The patients' ethnic groups are as follows: Chinese

Table 1. Demographics of national servicemen and military personnel diagnosed as having occupational skin diseases in Singapore from 1989 to 1999, by service

	Army	Air force	Navy	Civil defence	Police
no.	44	16	7	6	4
mean age (years)	21	27	23	19	31
Race					
Chinese	36	13	6	2	3
Malay	8	0	0	4	0
Indian	0	3	0	0	1
Eurasian	0	0	1	0	0

Table 2. Annual frequency of occupational skin disease seen in national servicemen and military personnel in Singapore, from 1989 to 1999

Year	No. seen
1989	8
1990	3
1991	5
1992	8
1993	11
1994	13
1995	10
1996	5
1997	6
1998	6
1999	2

60 (78%), Malay 12 (16%), Indian 4 (5%), Eurasian 1 (1%). Further breakdown according to the different services is shown in Table 1. The average duration of exposure was 25 months while the average duration of rash was 8 months. There was a peak of frequency in 1993–1995 (See Table 2).

The most common vocations associated with occupational skin diseases are those involving vehicle repairs and maintenance (37/77 or 48%) and food handling (15/77 or 19%). All 6 civil defence national servicemen were involved in construction work.

Of the 77 patients, 45 had no prior history of atopy. 18 had a history of allergic rhinitis, 13 had asthma and 10 had atopic dermatitis (some had more than 1 of these conditions).

61 patients had irritant contact dermatitis, 14 had allergic contact dermatitis (of whom 4 had contact urticaria) and 2 had other dermatoses. Those with other dermatoses were a civil defence bar bender with transient acantholytic dermatosis and a marine policeman with heat rash.

The most common irritants were oil/grease (40/61 or 66%), wet work (14/61 or 23%) and solvents (11/61 or 18%). Other irritants included acids/alkalis (lime burns in a civil defence serviceman), cement (in a civil defence serviceman), coolant (in an army mechanic), uniform dye, fibreglass (in an army technician), food (papaya in an army cook), friction, pesticide (in an army hygiene assistant) and resin (in an air force aircraft technician).

The most common allergens were food (4/10 or 40%) and chromates in cement (2/10 or 20%). Contact allergy to food was seen in 4 cooks. 1 army cook was patch tested positive to garlic. The others had positive prick tests: 1 army cook to prawns, chicken and fish, 1 to squid, and 1 navy cook to salted vegetables. The chromate allergy was seen in 2 civil defence servicemen. The other allergens were nickel (in a policeman's uniform buttons), epoxy (in an air force flying instructor's mask), grease and kerosene. There were also 2 patients with positive patch tests to cobalt – one was a civil defence serviceman who was also allergic to chromate in cement, while the other was the policeman who was allergic to nickel in his buttons.

Conclusion

All those national servicemen and military personnel diagnosed to have occupational skin disease by the occupational skin diseases clinic, National Skin Centre, Singapore, from 1989 to 1999, were male. Their mean age was 23 years (range 18–43). Irritant contact dermatitis was more common than allergic contact dermatitis, by 4.4:1. The most common vocations associated with occupational skin diseases are those involving vehicle repairs and maintenance (48%) and food handling (19%). The most common irritants were oil/grease (66%), wet work (23%) and solvents (18%). The most common allergens were food (40%) and chromates (20%).

Reference

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