

Hand dermatitis among veterinarians from Queensland, Australia

PETER A. LEGGAT^{1,2}, DEREK R. SMITH^{1,2} AND RICHARD SPEARE¹

¹Anton Breinl Centre for Public Health & Tropical Medicine, James Cook University, Townsville, and

²WorkCover New South Wales Research Centre of Excellence, University of Newcastle, Ourimbah, Australia

Background: Although hand dermatitis (HD) represents a frequent occupational issue for many health professionals, little is known about the prevalence and distribution of HD among veterinarians, particularly in Australia.

Aim: We utilized a previously validated questionnaire survey to examine a cross-section of veterinarians from Queensland, Australia, to determine the prevalence of HD and its associated factors.

Method: We conducted a questionnaire-based survey of HD, which was mailed to 1094 veterinarians registered with the Veterinary Surgeons Board of Queensland during 2006 (64.0% response rate).

Results: The overall prevalence rate of HD during this study was 15.9%. HD prevalence was significantly higher in those with current allergic disease ($P < 0.001$), among female veterinarians ($P < 0.001$), and those reporting latex allergy in the past 12 months ($P < 0.001$).

Conclusions: Overall, this study suggests that HD may be more prevalent among veterinarians in Queensland than among their counterparts studied elsewhere. Veterinary practices may need to consider making non-latex gloves available or avoiding latex products wherever possible, particularly for their female staff. The importance of HD to the veterinary profession is predicted to increase as females begin to make up a greater proportion of registered veterinarians as result of a demographic shift.

Key words: Australia; epidemiology; hand dermatitis; risk factor; veterinarian. © 2009 John Wiley & Sons A/S.

Conflicts of interest: The authors have declared no conflicts.

Accepted for publication 5 March 2009

Hand dermatitis (HD) is a common occupational disease, which may affect between 5% and 10% of the population (1). Although there is also known to be a high prevalence of HD among health-care workers (HCWs) (1, 2), HD among veterinarians has not been widely investigated. In one previous study involving veterinarians with a low response rate (19.7%), a questionnaire was mailed that asked about contact dermatitis, while in another, dermatologists themselves were contacted about their experience of forearm and HD among veterinarians; however, the exact prevalence rate of this disease was not elucidated in either investigation (3, 4). Where HD prevalence rates were documented among veterinarians, it was usually as part of

a regional veterinary association survey (5, 6). In studies of veterinarians in Kansas and California, an overall HD prevalence rate of 13% was reported (5, 6); however, the definitions used varied widely. There have also been occasional case reports of novel agents responsible for contact urticaria involving HD (7, 8). As such, relatively little is known about the prevalence of HD among veterinarians, a knowledge shortfall that warrants further investigation. As they represent a large and mobile professional demographic, the most practical approach for studying HD among veterinarians is a structured self-reporting questionnaire based on previous studies. Given these considerations, we utilized a previously validated questionnaire

survey (9) to examine a cross-section of veterinarians from Queensland, Australia, to determine the prevalence of HD and its associated factors.

Subjects and Methods

This study involved a cross-sectional epidemiological analysis of HD among all veterinarians who were registered with the Veterinary Surgeons Board of Queensland during 2006. Data were obtained by means of a self-reporting questionnaire (9). Two follow-ups were conducted. All information was collected anonymously, and informed consent was implied when veterinarians completed and returned their questionnaires. Our three-page survey included questions such as age, year of study, previous employment, HD symptoms, and the self-reported presence or history of systemic allergies. HD symptoms investigated included red and swollen hands or fingers, dry and cracked hands or fingers, blisters on hands or between the fingers, scaling of hands or fingers, itchy hands or fingers, or any other skin complaint nominated by the respondent. HD was defined when two or more symptoms occurred in the past 12 months and had persisted for more than 3 weeks or reoccurred (1, 9). Information regarding latex allergy and any allergic disease over the past 12 months was also requested, as previously described (10). Data were analysed by statistical software (11) to establish the prevalence of HD as well as demographic correlates and possible risk factors. Differences in HD prevalence rates by sex and age (*P* for trend) were evaluated using the chi-squared test. *P* values below 0.05 were regarded statistically significant throughout all analyses.

Results and Discussion

A total of 664 surveys were returned from 1038 eligible veterinarians, giving a response rate of 64.0%. Demographic data are presented in Table 1. HD prevalence was determined using previously defined criteria (9). One limitation of this type of investigation is that what veterinarians report may differ from the actual situation, and there may be some responder bias. Although a relatively limited geographical area was sampled, the State of Queensland, a comprehensive database of the registration authority was used.

The overall prevalence of HD was 15.9% (Table 1). Overall, HD prevalence among our veterinarians (15.9%) was a little higher than those reported in previous studies of HD prevalence among veterinarians in Kansas (13.0%) (5) and California (13.0%) (6), although non-standard definitions of HD appeared to have been used,

Table 1. Demographics, atopy, latex allergy, and HD among veterinarians

Demographics	Female	Male	Total	<i>P</i> value ^a
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
Age (years)				
≤30	70 (24.9)	23 (6.1)	93 (14.2)	
31–40	103 (36.7)	66 (16.6)	169 (25.7)	
41–50	80 (28.5)	88 (23.4)	168 (25.6)	<0.001
>50	28 (10)	199 (52.9)	227 (34.6)	
Type of practice ^b				
Small animal	149 (52.5)	138 (36.6)	287 (43.4)	<0.001
Large animal	8 (2.8)	40 (10.6)	48 (7.3)	<0.001
Mixed animal	93 (32.7)	116 (30.8)	209 (31.6)	0.324
Specialist	20 (7.0)	31 (8.2)	51 (7.7)	0.341
Non-clinical	14 (4.9)	37 (7.7)	51 (7.7)	0.013
University	18 (6.3)	16 (4.3)	44 (5.2)	0.152
Other	4 (1.4)	24 (6.4)	28 (4.2)	<0.001
Allergy and latex ^c				
Any allergic disease	105 (37.2)	123 (32.9)	228 (34.8)	0.141
Latex allergy	13 (4.6)	5 (1.3)	18 (2.7)	0.011
HD ^d	71 (25.2)	33 (8.8)	104 (15.9)	<0.001

HD, hand dermatitis.

^a*P* for trend evaluated using the chi-squared test by sex, except for age.

^bPercentages for type of practice are percentages within sex.

^cOver the past 12 months.

^dHD cases defined according to the criteria of Smit et al. (9).

making accurate comparisons difficult. The prevalence of HD among our veterinarians was a little higher than those reported in previous studies of HD prevalence among some other HCW groups, including physicians in China (12.9%) (12) and Sweden (13.3%) (13), but somewhat lower than those found in prior research conducted among Norwegian physicians (17.6%) (14), Japanese physicians (25.1%) (15), and Taiwanese hospital nurses (22%) (16). The response rate of the aforementioned Japanese survey was only 34.3%, which may have led to incomplete coverage and responder bias.

HD was significantly more common among veterinarians with a current allergic disease (odds ratio 4.3, 95% CI: 2.7–6.6, *P* < 0.001) and among female veterinarians (odds ratio 3.5, 95% CI: 2.2–5.4, *P* < 0.001), which is consistent with the findings of a large study of HCW who underwent patch testing in Kansas (17). The gender composition of the veterinary profession is changing, with women becoming the more prevalent sex (18). This trend is also confirmed in our data from Queensland with the female:male ratio being 0.14, 0.91, 1.56, and 3.04 for age categories >50, 41–50, 31–40, and ≤30 years, respectively (Table 1). The increased prevalence of HD in female veterinarians may presage that HD will become more significant in veterinary practice as the overrepresentation of males in older cohorts gives way to an overrepresentation of

females in younger, more recently graduated veterinary cohorts. There was no association detected between HD and type of practice. The overall prevalence of symptoms on the hands and fingers among veterinarians in our study was as follows: dry and cracked (23.5%), itching (16.6%), scaling (10.9%), blisters (5.5%), redness and swelling (4.7%), and other symptoms (7.1%). HD was also significantly more common among those reporting latex allergy in the past 12 months (odds ratio 15.5, 95% CI: 5.4–44.5, $P < 0.001$); however, the categories in this particular analysis were small. The prevalence of self-reported latex allergy during the past 12 months in our veterinarians (2.7%) was similar to that reported by dentists in a previous study (2.1%) (19).

The association of systemic allergic disease and latex reactions with higher HD prevalence in this present survey was consistent with previous research showing correlations between allergy and HD development across a variety of geographical regions and occupational groups (13, 19–22). This suggests that HCW of all disciplines are at reasonable HD risk, particularly if they suffer from current allergies. Veterinary practices may need to consider making non-latex gloves available or avoiding latex products wherever possible to help reduce the burden of HD and latex allergy. Veterinarians already suffering from latex allergy and/or HD should be carefully monitored by their health-care providers to help reduce the possibility of these diseases interfering with their future career. Veterinary associations may also consider counseling atopic veterinarians in preventive techniques and, ideally, introducing greater HD and latex allergy awareness in the veterinary undergraduate and postgraduate curricula.

Acknowledgements

We are grateful to all the veterinarians who completed our questionnaire. We also thank Dr Frances Leggat for her assistance in data coding and entry. Ethical clearance was provided by the Human Research Ethics Committee, James Cook University (no. H2465).

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Address:

Professor Peter A. Leggat, MD, PhD, DrPH
School of Public Health, Tropical Medicine &
Rehabilitation Sciences
James Cook University
Townsville
Queensland 4811
Australia
Tel: +61 7 47816108
Fax: +61 7-47815254
e-mail: peter.leggat@jcu.edu.au