

Breed and site predispositions of dogs with atopic dermatitis: a comparison of five locations in three continents

K. Jaeger*, M. Linek[†], H.T. Power[‡],
S.V. Bettenay[§], S. Zabel^{||}, R.A.W. Rosychuk^{||}
and Ralf S. Mueller*

*Medizinische Kleintierklinik, Ludwig Maximilian University, Munich, Germany

[†]Tierärztliche Spezialisten, Hamburg, Germany

[‡]Dermatology for Animals, Campbell, CA, USA

[§]Animal Skin & Allergy Clinic, Mount Waverley, Melbourne, Vic., Australia

^{||}College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, CO, USA

Correspondence: Ralf Mueller, Medizinische Kleintierklinik, Ludwig Maximilian University Munich, Veterinaerstr. 13, 80539 Munich, Germany. E-mail: ralf.muellerl@med.vetmed.uni-muenchen.de

Sources of Funding

This study was self-funded.

Conflict of Interest

None declared.

Abstract

The objectives of this multicentre study were to analyse and compare breed predispositions and lesion distributions of 552 dogs diagnosed with atopic dermatitis from five different dermatologic referral centres located in Australia, Germany (2) and the United States (2). Breeds were compared with the canine population in the respective locations. Breed predispositions varied from geographical site, although golden retrievers and German shepherd dogs were predisposed in three of five practices. Lesions were present most commonly on the paws (62%), ventrum (51%), ears (48%) and face (39%). Various breeds had specific site predilections. Based on this study, breed predispositions can vary greatly both between continents and also between different locations on the same continent. In addition, some breeds showed predispositions for certain body sites which also varied in some instances with the geographical location.

Accepted 19 May 2009

Introduction

Atopic dermatitis (AD) is a genetically predisposed inflammatory and pruritic disease with characteristic clinical features and is a common disease in the dog.¹ It reportedly affects between 3% and 15% of the canine population,² although the true prevalence and incidence of AD in the general dog population is unknown. Canine AD is a complex disease with genetic and environmental factors leading to a sensitivity to various allergens and development of clinical signs upon exposure to those allergens. Breed predilections are well documented in canine AD, but regional variations probably exist and breed predispositions may change over time. Various studies report the following breeds to be at higher relative risk: boxer, bullterrier, Cairn terrier, Chow Chow, cocker spaniel, French bulldog, fox terrier, German shepherd dog, golden retriever, Irish setter, Labrador retriever, poodle, Rhodesian ridgeback, shar-pei, Vizsla and West Highland white terrier.^{3–8} The typical clinical presentation of canine AD is erythema and pruritus of the face, paws, ventral abdomen/inguinal region, axillae, flexor surface of the tarsal joint, extensor surface of the carpal joint, pinnae and external ear canals.⁹ Otitis externa is a common complication.^{8,10} Secondary skin lesions reflect chronic pruritus, self-trauma and the frequent secondary infections and include alopecia, crusting and lichenification. It is possible that breed predisposition and clinical signs of canine AD vary between different geographical areas. The objectives of this multicentre study were to analyse and compare the breed predisposition and lesion distribution of dogs with AD in five geographically distinct locations.

Materials and methods

Study design

The medical records of dogs with AD from five different dermatological referral centres located in Australia (Melbourne, Victoria), Germany (Hamburg and Munich) and the United States (Fort Collins, Colorado and Campbell, California) were retrospectively evaluated.

Study population

Dogs were included in the study if they met the following inclusion criteria. Only purebred dogs were included to enable the comparison of breeds predisposed to develop AD between centres. All dogs had a history and clinical signs compatible with AD; for all dogs flea bite hypersensitivity, ectoparasite infestation, adverse food reaction and secondary bacterial and *Malassezia* infections were ruled out with appropriate tests and trial therapies. All dogs had a minimum of one positive reaction on intradermal testing or serum testing for allergen-specific IgE.

Present address: S.V. Bettenay, Tierdermatologie Deisenhofen, Deisenhofen, Germany.

Part of this data was published as an abstract of the North American Veterinary Dermatology Forum, Veterinary Dermatology 2006; 17: 210.

Data collection and statistical analysis

All cases of the five centres were diagnosed with AD between 1995 and 2005. The data in each centre were collected by running a computer search for diagnoses with the key words 'atopy' or 'atopic dermatitis'. Approximately, the first 100 cases satisfying the inclusion criteria were chosen.

Data from medical records were reviewed for breed and for the distribution of clinical signs of AD. Only breeds with more than three affected dogs per location were included in the statistical evaluation. The breeds were compared with the general hospital population in the case of the two veterinary teaching hospitals (Munich and Fort Collins). We assumed that a large hospital population with a wide variety of services which includes primary accession general health care and numerous specialty services represented the true local dog population. In the case of the private referral centres (Melbourne, Hamburg and Campbell) the breeds were compared with the population of a large general practice in the vicinity of the referral centre.

In order to simplify the comparisons of clinical signs, we recorded lesions of three body areas – face, ventrum and paws – in addition to otitis externa, as these are most commonly seen with canine AD. Erythema was defined as a primary lesion. Secondary lesions such as excoriations, self-induced alopecia, hyperpigmentation, scaling and lichenification were also recorded.

Breed predisposition per geographical site was determined using a chi-squared test. The odds ratio and 95% confidence interval was also calculated.

The recorded data on involved lesional skin sites of AD dogs were pooled and the different breeds were compared with the pooled data from all geographical locations to evaluate differences of affected body regions between breeds. Fisher's exact test was used to analyse the data. For all statistical evaluations Graphpad Instat 3.06 was used. $P < 0.05$ was considered significant.

Results

Location and number of dogs

Five hundred and fifty-two dogs diagnosed with AD were included in the study. The number of dogs recruited per geographical location is listed in Table 1.

Breed predispositions for canine atopic dermatitis in different geographical locations

Breed predispositions seen were variable and are listed in Table 2. Golden retrievers were predisposed to canine AD in Campbell, Melbourne and Munich. German shepherd dogs were predisposed in both geographical locations in Germany and in Melbourne, Labrador retrievers in Melbourne and Munich and boxers and West Highland white terriers only in Melbourne.

Predisposition of dogs with atopic dermatitis for specific affected body regions

The most common affected skin sites of dogs with AD were the paws (62%). The ventrum and face were affected in 51% and 39% of cases respectively. The frequency of otitis externa was 48%. Some breeds had a higher likelihood of developing lesions of canine AD

at specific body sites and these results are listed in Table 3.

Discussion

In this multicentre study we analysed the breed predisposition and distribution of lesions of canine AD between three different continents. Breed predilection is cited by Willemse as one of the major criteria for the diagnosis of canine AD.⁷ To our knowledge, this is the first study that analyses the breed predispositions of a large number of dogs with AD in five geographically distinct locations on three different continents.

There are a number of publications which have reported the incidence of and predilection for AD in various dog breeds throughout the world.^{4–6,8,10–12} However, in not all of these publications is the predilection actually compared to a local population and statistics may be lacking. One study reported the breeds of dogs affected with canine AD at two geographically distinct locations in Great Britain: Edinburgh and London.¹³ In this study, Sture *et al.* did not statistically evaluate the predisposition of various breeds to develop canine AD, but rather listed the percentage of frequently represented dog breeds, namely the boxer, Labrador retriever and the West Highland white terrier. The Labrador was closely matched in both cities, whereas boxers and West Highland white terriers were more frequently represented in London.¹³

It is critical when evaluating the predisposition of a breed to develop any disease that the study results are compared with the local animal populations.^{5,14} Ideally, the whole population of dogs would be used for comparison. This has been recently performed in Switzerland, where a registry service claims to have registered more than 85% of the dogs.⁵ In some countries, most pets are insured and data from insurance agencies may be evaluated.¹⁵ Although pet insurance is available, it is not commonly used by a majority of pet owners in the three countries where this study was performed and such detailed information was unfortunately not available for our purposes.

Two of the participating centres were veterinary teaching hospitals (Fort Collins, Munich) and in these geographical regions the dog breeds were compared with the general hospital population. As these veterinary teaching hospitals provide a wide range of veterinary services including emergency and routine health care, it was assumed that their general hospital population probably reflected the normal dog population in each respective area. In contrast, data collected from the three private dermatological referral centres (Campbell, Hamburg and Melbourne) were compared with dog populations from general veterinary practices in the same respective geographical locations in an effort to avoid a possible bias associated with dog selection from a dermatology referral clinic.

With respect to breed predilection, our study concluded that German shepherd dogs and golden retrievers are breeds predisposed to canine AD in most geographical locations, consistent with published reports.^{8,12,16} There are similarities in these breed predispositions between individual locations. In contrast, other breed predilections

Table 1. Location and number of dogs included in the study

	Hamburg, Germany	Munich, Germany	Melbourne, Australia	Campbell, CA, USA	Fort Collins, CO, USA
Dogs	112	80	145	120	95

Table 2. Breed predisposition for canine atopic dermatitis in different geographical locations

	Hamburg, Germany	Munich, Germany	Melbourne, Australia	Campbell, CA, USA	Fort Collins, CO, USA
Bichon frise	0/112*	0/80*	3/145*	5/120 ($P = 0.003$, OR 4.5, CI 1.7–11.6)	2/95*
Boxer	5/112 ($P = 0.1251$, OR 2.3, CI 0.9–5.7)	1/80*	5/145 ($P = 0.0069$, OR 3.9, CI 1.6–9.6)	2/120*	0/95*
Bullterrier	1/112*	0/80*	4/145 ($P = 0.0011$, OR 7.6, CI 2.3–25.6)	1/120*	1/95*
Cavalier King Charles Spaniel	0/112*	0/80*	8/145 ($P < 0.0001$, OR 6.9, CI 3.0–16.2)	0/120*	0/95*
French bulldog	5/112 ($P < 0.0001$, OR 46.9, CI 16.7–131.3)	0/80*	0/145*	1/120*	1/95*
German shepherd dog	17/112 ($P < 0.0001$, OR 6.6, CI 3.9–11.2)	16/80 ($P < 0.0001$, OR 5.0, CI 2.9–8.6)	19/145 ($P = 0.0019$, OR 2.4, CI 1.4–4.1)	9/120 ($P = 0.154$, OR 1.8, CI 0.9–3.6)	4/95 ($P = 0.968$, OR 1.177, CI 0.4–3.2)
Golden retriever	7/112 ($P = 0.641$, OR 1.3, CI 0.6–2.8)	13/80 ($P < 0.0001$, OR 8.6, CI 4.7–15.6)	6/145 ($P = 0.006$, OR 0.3, CI 0.1–0.6)	20/120 ($P < 0.0001$, OR 5.1, CI 3.1–8.4)	10/95 ($P = 0.082$, OR 3.017, CI 1.0–3.7)
Great Dane	0/112*	0/80*	4/145 ($P < 0.0001$, OR 20.3, CI 4.5–91.4)	1/120*	0/95*
Jack Russell terrier	7/112 ($P = 0.087$, OR 2.1, CI 1.0–4.6)	5/80 ($P = 0.0003$, OR 5.5, CI 2.2–13.7)	3/145*	2/120*	0/95*
Labrador retriever	7/112 ($P = 0.063$, OR 2.3, CI 1.0–4.9)	6/80 ($P = 0.004$, OR 3.7, CI 1.6–8.5)	9/145 ($P = 0.0007$, OR 0.3, CI 0.2–0.6)	19/120 ($P = 0.264$, OR 1.377, CI 0.8–2.3)	10/95 ($P = 0.562$, OR 0.8, CI 0.4–1.5)
Silky terrier	0/112*	0/80*	4/145 ($P = 0.0022$, OR 6.8, CI 2.1–22.2)	0/120*	0/95*
West Highland white terrier	9/112 ($P = 0.1507$, OR 1.8, CI 0.9–3.5)	4/80 ($P = 0.39$, OR 1.8, CI 0.7–5.0)	6/145 ($P < 0.0001$, OR 10.3, CI 3.6–29.3)	2/120*	1/95*

OR, odds ratio; CI, 95% confidence interval.

In Munich and Fort Collins (veterinary teaching hospitals) breeds were compared with the general hospital population. In Melbourne, Hamburg and Campbell (private referral centres) breeds were compared with the population of a large general practice in the vicinity of the referral centres. The chi-squared test was used to analyse the data and $P < 0.05$ was considered significant (numbers in bold).

*Only breeds with more than three affected dogs per location were included in the statistical evaluation.

varied markedly between the different continents as well as between sites on the same continent, even within the same country. The French bulldog was exclusively predisposed in Hamburg and Cavalier King Charles spaniels, Great Danes and Silky terriers in Melbourne. This may be due to variations in breed incidence between different geographical regions⁸ or different genetic pools in these areas.¹² On the basis of this study, small animal practitioners cannot assume that reported breed predilections for canine AD necessarily reflect their local regional bias.

A breed predisposition can change over time in any given geographical location. In one previous report, data were compared at the same university 4 years apart, and one breed, the English setter was predisposed on only one occasion.¹⁷ One active stud dog within an individual breed could potentially alter the genetic profile in a particular geographical location. Theoretically, a strict breeding programme excluding even mildly affected atopic dogs could contribute to a decrease in the incidence of AD in certain breeds regionally.

The data in our report were collected from dogs within the previous 10 years to increase the number of dogs evaluated for each breed and obtain more significant and reliable results. However, it cannot be excluded that a shift in breed predispositions may have occurred during the time span of the data collection. In this light, it would seem logical to regularly repeat studies that evaluate the breed predilections of canine AD in an effort to identify such changes.

The cardinal clinical sign of canine AD is pruritus. A typical dog with AD will exhibit pruritus of the face, ears, dorsal and ventral aspect of the paws, axillae, abdomen, inguinal area and medial thighs.^{1,10,14} Secondary lesions

such as alopecia, hyperpigmentation, lichenification and excoriations are common and principally observed at sites of pruritus.^{1,10,14} Unfortunately, most published reports do not give a detailed description of the distribution of the lesions of canine AD.

In this study, we evaluated lesions which were recorded to have affected three broadly defined anatomical areas, namely the face, ventrum and paws, and also noted the presence of otitis externa. As none of the lesion sites was an inclusion criterion and the study evaluated the distribution of lesions between atopic dogs seen at the study sites rather than comparing with other conditions, a relevant bias seems unlikely. The paws were the most commonly affected site and were involved in 62% of dogs included in this study. This percentage is consistent with some previously published reports.^{8,12} One hypothesis for the frequent occurrence of lesions affecting the paws is the high density of cutaneous mast cells present in the ventral interdigital skin,¹⁸ as mast cells play a key role in type I hypersensitivity reactions. In addition, a predilection for involvement of this site could also be explained by the direct percutaneous absorption of environmental allergens.^{7,19} Similarly the tendency for lesions to involve the sparsely haired regions of the ventrum may also reflect epidermal allergen contact.²⁰ Facial pruritus either with or without lesions is commonly reported as a feature of canine AD.^{1,7,14} In our study, we recorded lesions affecting the face in approximately one-third of dogs with AD which seems low compared to previously published reports.^{10,21} Willemse reported that 60–70% of atopic dogs have visible skin lesions on the face or digits.⁷ Another study described facial pruritus in all

Table 3. Breed predisposition of dogs with atopic dermatitis for specific affected body regions

	Face	Paws	Otitis externa	Ventrum
Beagle	2/6 ($P = 1.0$, OR 0.8, CI 0.1–4.4)	6/6 ($P = 0.088$, OR 8.1, CI 0.5–143.8)	6/6 ($P = 0.013$, OR 14.1, CI 0.8–251.3)	1/6 ($P = 0.116$, OR 0.2, CI 0–1.6)
Boxer	9/13 ($P = 0.049$, OR 3.6, CI 1.1–11.7)	11/13 ($P = 0.146$, OR 3.4, CI 0.7–15.5)	7/13 ($P = 0.782$, OR 1.3, CI 0.4–3.8)	6/13 ($P = 0.784$, OR 0.8, CI 0.3–2.4)
French bulldog	5/5 ($P = 0.009$, OR 17.4, CI 1.0–315.7)	5/5 ($P = 0.162$, OR 6.8, CI 0.4–123.9)	5/5 ($P = 0.026$, OR 11.9, CI 0.7–216.6)	5/5 ($P = 0.062$, OR 10.4, CI 0.6–188.8)
German shepherd dog	24/55 ($P = 0.474$, OR 1.2, CI 0.7–2.1)	36/55 ($P = 0.663$, OR 1.2, CI 0.7–2.1)	35/55 ($P = 0.033$, OR 1.9, CI 1.1–3.7)	44/55 ($P < 0.0001$, OR 3.8, CI 1.9–7.5)
Golden retriever	20/56 ($P = 0.773$, OR 0.9, CI 0.5–1.6)	41/56 ($P = 0.11$, OR 1.7, CI 0.9–3.1)	29/56 ($P = 0.674$, OR 1.2, CI 0.7–2.0)	28/56 ($P = 0.889$, OR 0.9, CI 0.5–1.6)
Jack Russell terrier	6/17 ($P = 1.0$, OR 0.9, CI 0.3–2.4)	10/17 ($P = 0.805$, OR 0.9, CI 0.3–2.4)	3/17 ($P = 0.014$, OR 0.2, CI 0.1–0.8)	10/17 ($P = 0.627$, OR 1.3, CI 0.5–3.6)
West Highland white terrier	10/22 ($P = 0.515$, OR 1.3, CI 0.6–3.1)	12/22 ($P = 0.509$, OR 0.7, CI 0.3–1.7)	13/22 ($P = 0.386$, OR 1.6, CI 0.7–3.7)	13/22 ($P = 0.521$, OR 1.4, CI 0.6–3.2)

OR, odds ratio; CI, confidence interval.

Breeds were compared with the pooled data where in 214 of the 552 dogs included in the study the face was affected, in 341 the paws were affected, in 284 the ventrum and in 265 the ears were affected (otitis externa). Fisher's exact test was used to analyse the data. $P < 0.05$ was considered significant (numbers in bold).

dogs but 33% exhibited no lesions.²¹ The disparate findings between our results and previous reports may be because pruritus in the absence of lesions was not evaluated in this study and some subtle clues such as face rubbing may not have been recorded in the case records.

Otitis externa or aural pruritus is very common in atopic dogs reportedly occurring in 17–80% of affected cases.^{10,12,21} AD is cited as the most common cause of otitis externa.²² In our study we recorded otitis externa as a feature in approximately 50% of affected dogs which is consistent with published reports.^{10,12,21} It is possible that elevated cutaneous mast cell numbers in the lateral and medial pinnae could be a contributing factor for the development of otitis externa in dogs with AD.¹⁸

This was a retrospective study and thus the data presented on lesion sites were dependent on the written medical records. Retrospective studies have to be always interpreted with caution because the recording of clinical signs may not be as thorough and detailed and variations can be anticipated between individual clinicians as well as between practices and record systems. In contrast, with prospective studies information requirements are typically clearly defined and uniformity between clinician records is ensured. All clinics in our study except Colorado State University had computerized records.

In summary, this study suggests that a number of breeds are predisposed to canine AD and that canine AD is characterised by prominent lesional involvement of the face, paws and ventrum and the presence of concurrent otitis externa. It also demonstrates a marked variation in breed predisposition depending on geographical location and differences in the location of lesions in different breeds that may represent regional variability. Based on these results, veterinary practitioners and dermatologists are encouraged to interpret information regarding breed predilections cautiously and in the context of local or regional information.

Acknowledgements

We thank Patricia Werhahn, Kerrie Lay and Andrea Cannon for providing the data on the normal hospital populations in Northern Germany, Victoria and California respectively.

References

- Scott DW, Miller WH, Griffin CE. Small Animal Dermatology, 6th edn. Philadelphia: W B Saunders, 2001. p. 574–608.
- Reedy LM, Miller WH Jr, Willemse A. Allergic Skin Diseases of Dogs and Cats, 2nd edn. Philadelphia: W B Saunders, 1997. p. 44–5.
- Koch H-J, Peters S. 207 Intrakutantests bei Hunden mit Verdacht auf atopische Dermatitis. Kleintierpraxis 1994; 39: 25–36.
- Mueller RS, Bettenay SV. Long-term immunotherapy of 146 dogs with atopic dermatitis – a retrospective study. Australian Veterinary Practitioner 1996; 26: 128–32.
- Picco F, Zini E, Nett C *et al.* A prospective study on canine atopic dermatitis and food-induced allergic dermatitis in Switzerland. Veterinary Dermatology 2008; 19: 150–5.
- Sousa CA, Marsella R. The ACVD task force on canine atopic dermatitis (III): genetic factors. Veterinary Immunology and Immunopathology 2001; 81: 153–7.

7. Willemse A. Atopic skin disease: a review and reconsideration of diagnostic criteria. *Journal of Small Animal Practice* 1986; 27: 771–8.
8. Zur G, Ihrke PJ, White SD *et al.* Canine atopic dermatitis: a retrospective study of 266 cases examined at the University of California, Davis, 1992–1998. Part I. Clinical features and allergy testing results. *Veterinary Dermatology* 2002; 13: 89–102.
9. Rosser EJ. Advances in the diagnosis and treatment of atopy. *The Veterinary Clinics of North America. Small Animal Practice* 1999; 29: 1437–47.
10. Saridomichelakis MN, Koutinas AF, Gioulekas D *et al.* Canine atopic dermatitis in Greece: clinical observations and the prevalence of positive intradermal test reactions in 91 spontaneous cases. *Veterinary Immunology and Immunopathology* 1999; 69: 61–73.
11. Prelaud P, Guaguere E, Alhaidari Z *et al.* Reevaluation des critères de diagnostic de la dermite atopique. *Revue Medicale Veterinaire* 1998; 149: 1057–64.
12. Scott DW. Observations on canine atopy. *Journal of the American Animal Hospital Association* 1981; 17: 91–100.
13. Sture GH, Halliwell RE, Thoday KL *et al.* Canine atopic disease: the prevalence of positive intradermal skin tests at two sites in the north and south of Great Britain. *Veterinary Immunology and Immunopathology* 1995; 44: 293–308.
14. Griffin CE, DeBoer DJ. The ACVD task force on canine atopic dermatitis (XIV): clinical manifestations of canine atopic dermatitis. *Veterinary Immunology and Immunopathology* 2001; 81: 255–69.
15. Nodtvedt A, Egenvall A, Bergvall K *et al.* Incidence of and risk factors for atopic dermatitis in a Swedish population of insured dogs. *Veterinary Record* 2006; 159: 241–6.
16. Schick RO, Fadok VA. Responses of atopic dogs to regional allergens: 268 cases (1981–1984). *Journal of the American Veterinary Medical Association* 1986; 189: 1493–6.
17. Halliwell REW, Gorman N. *Veterinary Clinical Immunology*. Philadelphia: W B Saunders, 1989. p. 232–52.
18. Auxilia ST, Hill PB. Mast cell distribution, epidermal thickness and hair follicle density in normal canine skin: possible explanations for the predilection sites of atopic dermatitis? *Veterinary Dermatology* 2000; 11: 247–54.
19. Marsella R, Nicklin C, Lopez J. Studies on the role of routes of allergen exposure in high IgE-producing beagle dogs sensitized to house dust mites. *Veterinary Dermatology* 2006; 17: 306–12.
20. Olivry T. The ACVD Taskforce on canine atopic dermatitis (IX): the controversy surrounding the route of allergen challenge in canine atopic dermatitis. *Veterinary Immunology Immunopathology* 2001; 81: 219–25.
21. Willemse A, Van den Broom WE. Investigations of the symptomatology and the significance of immediate skin test reactivity in canine atopic dermatitis. *Research Veterinary Science* 1983; 34: 261–5.
22. Griffin CE. Canine atopic disease. In: Griffin CE, Kwochka KW, MacDonald JM. eds. *Current Veterinary Dermatology*. St. Louis: Mosby, 1993: 99–120.

Résumé Cette étude multicentrique avait pour but d'analyser et de comparer les prédispositions raciales et la distribution des lésions de 552 chiens atopiques issus de cinq centres de dermatologie référée d'Australie, d'Allemagne (2) et des Etats-Unis. Les races étaient comparées aux populations canines locales respectives. Les prédispositions raciales variaient avec le lieu bien que les golden retrievers et les bergers allemands soient prédisposés pour 3 des 5 centres. Les lésions étaient présentes le plus souvent sur les pattes (62%), le ventre (51%), les oreilles (48%) et la face (39%). Différentes races avaient des zones de prédilection. Cette étude révèle que les prédispositions raciales peuvent varier considérablement entre les continents mais aussi entre différents lieux sur le même continent. En outre, certaines races présentent des prédispositions pour certaines zones corporelles qui varient aussi dans ce cas, en fonction du lieu géographique.

Resumen Se trató la dermatofitosis enzoótica en un refugio de gatos con 140 animales de acuerdo con un protocolo que combinó identificación, aislamiento y tratamiento de portadores subclínicos y de animales afectados, siguiendo un sistema de tres áreas: animales sanos (sin lesiones y con cultivos negativos), portadores subclínicos (sin lesiones pero con cultivos positivos) y animales clínicamente afectados (con lesiones y con cultivos positivos). Los gatos fueron examinados e inspeccionados bajo lámpara de Wood y se tomaron muestras para cultivo cada dos semanas. Un 33% de los gatos tuvieron cultivo positivo al inicio del estudio. Los animales clínicamente afectados y los portadores fueron tratados con una loción de 0.2% enilconazol (Imaveral®) dos veces por semana y se les administró itraconazol (Itrafungol®) 5 mg/kg dos veces al día por vía oral en semanas alternas. El ambiente fue tratado una vez al día con una solución al 1% de lejía y una vez a la semana con una solución al 0.6% de enilconazol (Clinafarm®). Los animales tratados se consideraron curados tras dos cultivos negativos consecutivos. Todos los gatos se curaron en 56 días. Se implementaron medidas preventivas contra la dermatofitosis para nuevos animales que consistían en cuarentena individual y el muestreo para cultivo fúngico. No se observaron recidivas basado en los cultivos tomados de los animales y del ambiente durante los primeros 10 meses.

Zusammenfassung Die Ziele dieser Multi-Center Studie waren die Analyse und der Vergleich von Rassenprädispositionen und der Verteilung von Läsionen bei 552 Hunden aus fünf verschiedenen Überweisungszentren für Dermatologie in Australien, Deutschland (2) und den Vereinigten Staaten (2), bei denen eine atopische Dermatitis diagnostiziert worden war. Die Rassen wurden mit der Hundepopulation in den entsprechenden Gebieten verglichen. Rassenprädispositionen variierten mit der geografischen Lage, obwohl Golden Retriever und Deutsche Schäferhunde in 3 von 5 Praxen prädisponiert waren. Die Hautveränderungen befanden sich hauptsächlich an den Pfoten (62%), am Ventrum (51%), an den Ohren (48%) und im Gesicht (39%). Zahlreiche Rassen zeigten spezielle Verteilungsmuster. Basierend auf dieser Studie kann gesagt werden, dass die Rassenprädispositionen zwischen den Kontinenten, aber auch zwischen den unterschiedlichen Gebieten desselben Kontinents stark variieren können. Zusätzlich zeigten einige Rassen Prädispositionen für bestimmte Körperregionen, was in manchen Fällen auch mit der geografischen Region variierte.