

A survey of primary care practitioners' referral habits and recommendations of allergen-specific immunotherapy for canine and feline patients with atopic dermatitis

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Background – A recent pilot study of primary care veterinarians' attitudes regarding canine atopic dermatitis and initiation of allergen-specific immunotherapy (ASIT) revealed several barriers to specialist referral (in the USA) and use of ASIT as a treatment modality.

Hypothesis/Objectives – The primary objective was to collect data on referral habits and ASIT practices among a much larger cohort of primary care veterinarians located around the world, and to explore barriers to referral and management of atopic diseases of dogs and cats with ASIT.

Methods and materials – An online survey, administered through the Veterinary Information Network (VIN, Davis, CA, USA), asked participants to self-report their referral habits and immunotherapy recommendations, and rate barriers and motivating factors using Likert-scale responses.

Results – Of 827 survey responses, 97.6% identified as primary care practitioners. A larger number of practitioners (84.5%) reported seeing atopic dogs often, compared with atopic cats (9.7%). Fewer of these veterinarians (56.6%) referred atopic cats for specialist care, compared to atopic dogs (73.5%). Timely communication, sharing long-term management of the case, and provision of local continuing education were identified as factors associated with increased willingness to refer. A higher proportion of practitioners reported recommending ASIT for dogs (44.3%) than for cats (16.0%). Only 56.0% of respondents considered success rates of ASIT to be acceptable, while 27.9% were neutral on the topic.

Conclusions and clinical relevance – Dermatology specialists might build stronger relationships with referring veterinarians through timely case follow-up and provision of continuing education regarding the long-term benefits of ASIT and symptomatic management practices.

Introduction

The American College of Veterinary Dermatology (ACVD) task force defines canine atopic dermatitis (cAD) as a genetically predisposed inflammatory and pruritic allergic skin disease with characteristic clinical features, most commonly associated with immunoglobulin (Ig)E antibodies to environmental allergens.¹ Reports estimate the prevalence of cAD to be 3–15%,^{2,3} and of feline atopic syndrome (fAS) to be approximately 12.5%.^{4,5} The severity and chronicity of both cAD and fAS may make long-term treatment challenging. Treatment is potentially complicated by client concerns about cost and adverse drug effects.^{2–8} Allergen-specific immunotherapy (ASIT) is currently the only therapeutic option with the potential ability

to reduce clinical signs of atopic disease and to prevent progression by modifying or reversing its pathogenesis.^{2,8–13}

A recent pilot study identified frequent barriers to initiation of ASIT and referral of dogs with atopic dermatitis (AD) to a veterinary dermatologist.¹⁴ Although this study demonstrated several recurring barriers, its small scale and restriction to communities within the southwestern and northwestern United States made it difficult to extrapolate data to assist a wider geographical audience. The study revealed a discordance of beliefs between surveyed primary care veterinarians and veterinary dermatologists, demonstrating that the majority of primary care practitioners perceive ASIT to be less effective than reported previously.¹⁴

The primary purpose of the present study was to perform a refined yet larger scale survey of referral habits and ASIT practices among primary care veterinarians in managing canine and feline atopic diseases, and barriers associated with those behaviours. The secondary

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purpose of this survey was to better understand beliefs and perceptions of referring veterinarians so that dermatologists might better communicate with and serve referring veterinarians and the clients they refer.

Methods and materials

Survey participants and design

Survey participants were recruited through the Veterinary Information Network (VIN, Davis, CA, USA), an online subscription veterinary community with approximately 70,000 member veterinarians. Members were solicited with two E-mails, sent two weeks apart, containing a link to the digitized survey. The survey collected responses from 18 November 2019 to 15 December 2019. All responses were collected anonymously, then collated and screened by one investigator (MR) to ensure anonymity and duplication, then analysed by the primary investigator (SF). Survey questions and design were built upon results of the previous small-scale study that assessed barriers to ASIT and dermatological referral for atopic dogs.¹⁴

The final survey consisted of 46 questions with either multiple choice or Likert-scale responses, and three questions where participants could provide additional information (see Figure S1). Some responses were only partially completed and individual responses were included if sufficient information was provided to answer the particular question.

Demographic questions

Respondents qualified for participation if they confirmed that (i) they worked, or had worked, in clinical practice with dogs and/or cats; and (ii) they were not a dermatology specialist (i.e. worked as an emergency veterinarian, first opinion or primary care veterinarian, non-dermatologist referral veterinarian, shelter veterinarian or "other"). Demographic questions to determine country of practice and year of graduation from veterinary training were included.

Primary care veterinarian questions

Initial questions examined the frequency by which participants independently recommend dermatological referral of atopic dogs and cats or consider ASIT as a treatment modality. Later questions examined perceived barriers to referral and perceptions about the reported efficacy of ASIT.

Perceived client-driven barriers

Participants were asked to describe the frequency with which clients express concerns about barriers to the pursuit of either dermatological referral or ASIT. Questions were derived from information collected in the prior study¹⁴ and intended to assess their relevance on a national and international scale. At the end of the survey, participants were invited to provide any additional information that they considered relevant as free-form comments.

Statistical methods

The self-reported nature of the study provided information on frequently observed behaviours and reported barriers. We chose to present descriptive, rather than inferential, statistics for our findings because no formal statistical hypotheses were being tested.

Results

Demographics

A total of 826 individuals participated; however, of these, 765 individuals (92.6%) completed all survey questions. All participants indicated that they worked in clinical practice including 21 of 826 (2.5%) from Australia, 91 of 826 (11.0%) from Canada, three of 826 (0.5%) from the UK, and 686 of 826 (83.1%) from the United States (Figure 1). Twenty-three of 826 (2.8%) participants indicated "other", with four participants from New Zealand, three

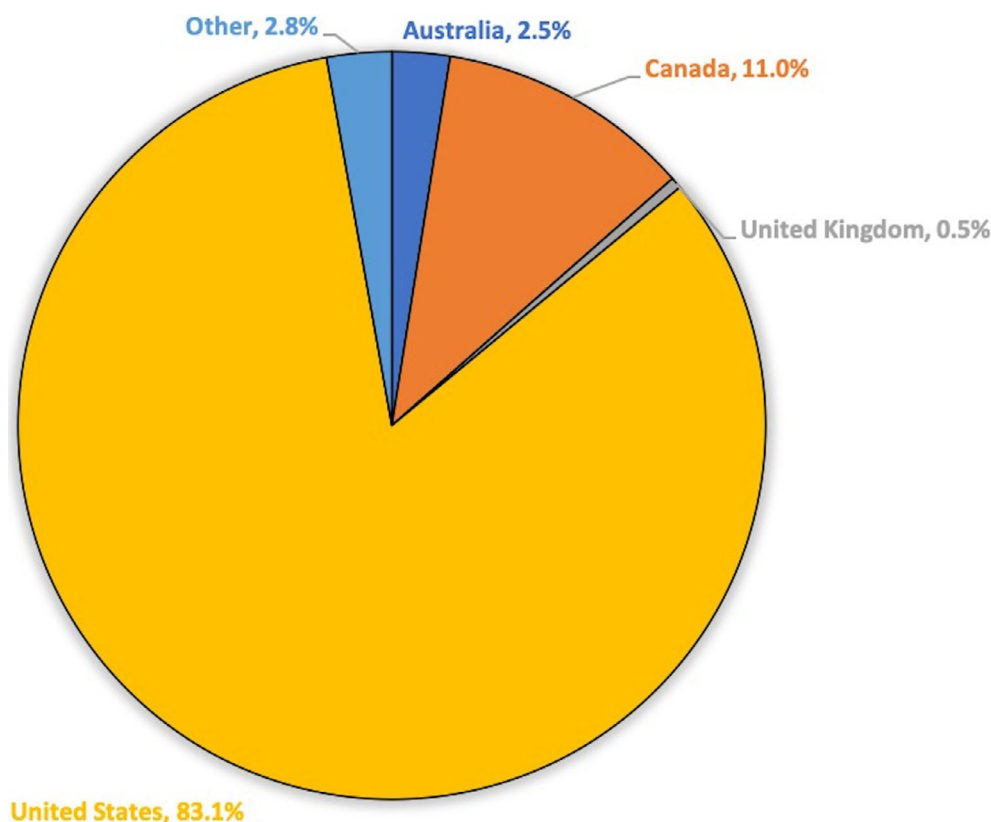


Figure 1. Country of practice as indicated by survey participants.

each from Singapore and Israel, two each from the Netherlands, Hong Kong and South Africa, and one participant each from the Cayman Islands, Thailand, Portugal, Bulgaria, Japan, Germany and Finland.

Most respondents identified as first-opinion or primary care veterinarian (803 of 823; 97.6%), while eight self-identified as emergency veterinarians, eight as nondermatologist referral veterinarians and four as shelter veterinarians. Less than 6% of survey participants completed veterinary training before 1980.

Frequency of AD and referral

When asked how frequently they saw dogs or cats with AD, 698 of 826 (84.5%) participants replied that they often examined dogs with cAD, while only 80 of 825 (9.7%) replied that they often examined cats with fAS (Table 1). When asked how frequently they discussed referral to a dermatology specialist, 26.5% replied they rarely or never discussed referral of dogs, whereas 43.4% replied that they rarely or never discussed referral of cats (Table 1). A higher percentage of respondents (26.7%) felt that none of their clients with cats complied with referral recommendations compared with 6.7% of respondents who felt that none of their clients with dogs complied. Participant responses from the three most frequently represented countries (USA, Canada and Australia) showed only minor differences regarding frequency of referral or perceived compliance (Figure S2a–d). Most participants felt that dogs and cats with atopic disease received some benefit from referral to a specialist (Table 2).

When asked how avidly primary care veterinarians recommended referral of atopic pets, 178 of 712 (25.0%) “strongly advise or recommend it”, 316 of 712 (44.4%) “advise it” and 218 of 712 (30.6%) “mention it.” Again, responses from the three most frequently represented countries showed minimal differences (Figure S3).

Perceived barriers and motivating factors of referral

Most participants reported that they were more likely to refer to a dermatologist who kept the primary care veterinarian involved in patient care post-referral (Table 3). Most participants agreed that follow-up communication

within a week of presentation increased their willingness to refer an atopic patient to a dermatologist, with the majority preferring first contact within three to seven days (552 of 703, 78.5%). A large number of participants (743 of 816, 91.0%) were either neutral or agreed that they were more likely to refer to a dermatologist involved in continuing education within the local area (Table 3).

Participants were increasingly likely to consider referral as the pet progressively failed therapy options (Table 4); however, most did not feel a pet needed to demonstrate recurrent pyoderma or a meticillin-resistant infection before considering referral. Participants reported that they more often provide referral contact information and allow clients to make first contact (658 of 701, 93.9%), rather than having office staff facilitate referral (301 of 706, 42.6%; Table S4).

Client factors

Among those surveyed, 29.8% of participants reported estimated travel time of ≤ 30 min to reach a veterinary dermatologist, while 36.9% reported an estimated travel time of < 60 min and > 30 min. The remaining 33.3% of clients would have to travel > 1 h. Despite differences in estimated travel times, participants referred patients, regardless of species, to dermatologists with similar frequencies (Table S5 and Figure S4).

Concerns for cost of initial consultation and repeated diagnostics, travel time to reach a specialist and time needed off work were frequently expressed as perceived client barriers to referral (Table 5). Fewer participants reported clients with inherent dislike for specialist professions and more frequently reported clients sometimes or often expressing faith in the abilities of their primary care veterinarian when objecting to referral.

Allergen immunotherapy

More participants always or often recommended ASIT for atopic dogs (359 of 811, 44.3%) compared with atopic cats (130 of 809, 16.0%; Table 6). Fewer participants “never or rarely recommend ASIT” for atopic dogs (154 of 811, 19.0%) compared with atopic cats (535 of 809, 66.1%; Table 6). Regionally Specific Immunotherapy (RESPIT, SkinVet Products; Lake Oswego, OR, USA) was

Table 1. Frequency of atopic dermatitis (AD) and referral

	Always	Often	Sometimes	Rarely	Never	Do not see AD in these patients	Total
How frequently do you see dogs with AD?	0	698 (84.5%)	103 (12.5%)	10 (1.2%)	15 (1.8%)	-	826
For the cases of dogs with AD that you see, how often to you discuss referral to a veterinary dermatologist with clients?	56 (6.9%)	201 (24.8%)	338 (41.7%)	185 (22.8%)	30 (3.7%)	1 (0.12%)	811
How frequently do you see cats with AD?	0	80 (9.7%)	427 (51.8%)	302 (36.6%)	16 (1.9%)	-	825
For the cases of cats with AD that you see, how frequently do you discuss referral to a veterinary dermatologist with clients?	51 (6.3%)	140 (17.3%)	266 (32.9%)	271 (33.5%)	80 (9.9%)	1 (0.12%)	809

-, answer was not an option.

Table 2. Do atopic animals benefit from referral to a veterinary dermatologist?

	Yes, all	Yes, most	Yes, some	Yes, a few	No	Totals
Do you believe that atopic dogs benefit from being referred to a veterinary dermatologist?	71 (8.8%)	247 (30.6%)	304 (37.7%)	156 (19.4%)	28 (3.5%)	806
Do you believe that atopic cats benefit from being referred to a veterinary dermatologist?	68 (8.5%)	249 (31.0%)	264 (32.8%)	183 (22.8%)	40 (5.0%)	804

Table 3. Barriers and motivating factors to referral

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
I am more likely to refer patients to a veterinary dermatologist who continues to keep me involved in patient care postreferral by sending the patient back for monitoring of the atopy, dispensing medication for the atopy, or providing ongoing immunotherapy. Do you agree with this statement?	250 (30.7%)	301 (36.9%)	191 (23.4%)	43 (5.3%)	30 (3.7%)	815
I prefer for the veterinary dermatologist to keep me informed, but to provide all the dermatologic diagnostic testing, postdiagnostic monitoring, and therapeutic interventions for the referred atopic patient. Do you agree with this statement?	103 (12.7%)	251 (30.8%)	255 (31.3%)	175 (21.5%)	30 (3.7%)	814
Communication (referral letter, phone call, copy of discharges) about exam findings and treatment strategy within a week of presentation increases my willingness to refer an atopic patient to a veterinary dermatologist. Do you agree with this statement?	352 (43.1%)	362 (44.4%)	83 (10.2%)	4 (0.49%)	15 (1.8%)	816
I am more likely to refer patients to a veterinary dermatologist who is actively involved in providing continuing education within the local area. Do you agree with this statement?	138 (16.9%)	294 (36.0%)	311 (38.1%)	55 (6.7%)	18 (2.2%)	816

Table 4. How likely are you to refer a pet with atopic dermatitis to a dermatologist? If it

	Very likely	Likely	Neither likely nor unlikely	Unlikely	Very Unlikely	Total
Fails to respond to one of your available treatment options	183 (23.5%)	214 (27.4%)	153 (19.6%)	156 (20.0%)	74 (9.5%)	780
Fails to respond to two of your available treatment options	239 (30.8%)	179 (23.1%)	139 (17.9%)	83 (10.7%)	36 (4.6%)	776
Fails to respond to more than two of your available treatment options	470 (60.3%)	228 (29.2%)	54 (6.9%)	19 (2.4%)	9 (1.2%)	780

less often recommended compared with conventional ASIT for both atopic dogs and cats (Table 6), with > 25% replying that they were unfamiliar with RESPIT.

Most practitioners (681 of 822, 82.8%) had some familiarity with sublingual immunotherapy (SLIT), while fewer (371 of 680, 54.6%) had experience using SLIT in practice. Although 681 of 776 (87.8%) of participants had clients administer ASIT, seven of 679 (1.0%), 95 of 679 (14.0%) and 326 of 679 (48.0%) “always, often, or sometimes”, respectively, witnessed clients express concern about their ability to administer allergen.

Participants were asked if they agreed with the recommendations made by the International Committee for Allergic Diseases in Animals (ICADA) and endorsed by the World Association for Veterinary Dermatology (WAVD),¹⁵ that allergen testing and ASIT should be considered in all atopic dogs with severe clinical signs or signs lasting greater than three months per year. Responses from 504 of 763 (66.1%) of participants

indicated agreement or strong agreement, while 67 of 763 (8.8%) disagreed or strongly disagreed, and 192 of 763 (25.2%) were neutral on the topic.

When asked how they felt about the statistic “approximately 2/3 of atopic dogs will have >50% improvement in clinical signs after allergen-specific immunotherapy”,¹² 428 of 764 (56.0%) participants found this success rate to be acceptable or completely acceptable, 123 of 764 (16.1%) found the rate to be unacceptable or completely unacceptable, and the remaining 213 of 764 (27.9%) were neutral on the topic.

Nearly 70% of participants replied that they were unaware of research in humans and mice showing that ASIT might be the only known treatment to delay or prevent development of neosensitization and might slow down or halt the “atopic march” of worsening clinical signs.^{16–19} However, 399 of 763 (52.3%) agreed or strongly agreed that early initiation of ASIT, with interim control of clinical signs using available therapies, helps mitigate escalation

Table 5. Perceived client-reported barriers: When clients object to referral to a veterinary dermatologist, how frequently do they mention the following factors as reasons or areas of concern?

	Always	Often	Sometimes	Infrequently	Rarely	Never	Total
Travel time	60 (7.8%)	163 (21.2%)	191 (24.8%)	65 (8.5%)	138 (17.9%)	152 (19.8%)	769
Cost of the referral consultation	161 (20.9%)	372 (48.3%)	175 (22.7%)	37 (4.8%)	14 (1.8%)	11 (1.4%)	770
Cost of repeated diagnostic tests	104 (13.6%)	299 (39.1%)	218 (28.5%)	72 (9.4%)	46 (6.0%)	26 (3.4%)	765
Cost of time taken off work	36 (4.7%)	114 (14.9%)	175 (22.9%)	142 (18.6%)	153 (20.0%)	144 (18.8%)	764
Dislike of referral specialists in general	4 (0.52%)	22 (2.9%)	111 (14.5%)	133 (17.4%)	191 (24.9%)	305 (39.8%)	766
Faith in you to handle the problem	15 (2.0%)	205 (26.7%)	308 (40.1%)	89 (11.6%)	76 (9.9%)	75 (9.8%)	768

Table 6. Allergen immunotherapy for patients with atopic dermatitis (AD)

		Always	Often	Sometimes	Rarely	Never	I have never heard of ASIT	I have never heard of RESPIT	Total
Dogs	How frequently do you recommend allergy testing (either serology or intradermal) for a dog with AD?	64 (7.9%)	295 (36.4%)	298 (36.7%)	131 (16.2%)	23 (2.8%)	-	-	811
	How frequently do you recommend Allergen-Specific Immunotherapy (ASIT) for a dog with AD?	62 (7.6%)	261 (32.2%)	283 (34.9%)	140 (17.3%)	38 (4.7%)	27 (3.3%)	-	811
	How frequently do you recommend REgionally SPecific ImmunoTherapy (RESPIT) for a dog with AD?	26 (3.2%)	86 (10.6%)	134 (16.5%)	135 (16.6%)	181 (22.3%)	-	249	811
Cats	How frequently do you recommend allergy testing (either serology or intradermal) for a cat with atopic dermatitis?	27 (3.3%)	103 (12.7%)	207 (25.6%)	343 (42.4%)	129 (15.9%)	-	-	809
	How frequently do you recommend ASIT for a cat with AD?	35 (4.3%)	75 (9.2%)	170 (21.0%)	315 (38.9%)	185 (22.9%)	29 (3.6%)	-	809
	How frequently do you recommend RESPIT for a cat with AD?	10 (1.2%)	38 (4.7%)	64 (7.9%)	170 (21.0%)	293 (36.2%)	-	234 (28.9%)	809

-, answer was not an option.

of clinical signs and neosensitization of atopic pets. A remaining 22 of 763 (2.9%) disagreed or strongly disagreed, and 342 of 763 (44.8%) were neutral on the topic.

Discussion

This is the first large-scale study on primary care veterinarians' referral habits and recommendations of ASIT for dogs and cats with atopic disease and also the largest study on veterinary referral habits. Our survey of 827 recent and seasoned first-opinion veterinarians from 17 countries illustrated that most participants discussed referral of atopic dogs and cats with clients, yet the method or avidity of recommendations may vary. In human medicine, investigators commonly perform studies to identify clinician and patient barriers to referral, as well as physician perceptions about referral and treatment options.^{20–26} Similar to our findings, these studies have identified the following commonly noted referral

barriers: perceived high cost, long travel times, delayed communication and disagreement over the specialist's role.^{20–26} Recently, studies have attempted to define veterinary referral habits and treatment perceptions, including adherence to ASIT,^{27–31} and to the best of the authors' knowledge none have examined referral habits or therapeutic recommendations for atopic dogs or cats.

A higher proportion of participants indicated that they often see atopic dogs compared to atopic cats, despite similar prevalence rates for cAD and fAS reported in the literature.^{3–5,7} Ruling out food hypersensitivities by performing elimination diet trials may be more challenging in cats owing to variable palatability preferences, and therefore veterinarians may be less confident in their diagnosis for this species.^{7,32} Furthermore, pruritic cats might more often be misdiagnosed with psychogenic alopecia or other behavioural problems leading to dermatological signs.³³ Continuing education that increases awareness of the unique manifestations of hypersensitivity in cats compared to dogs⁷ and teaches veterinarians how to

trouble-shoot common diagnostic challenges of pruritic cats, may bolster the diagnostic certainty of primary care veterinarians.

More veterinarians indicated that they rarely or never discuss referral of cats compared to dogs, despite a majority sharing the perception that atopic animals benefit from referral to a specialist. Although no studies have examined outcomes of atopic animals managed by dermatology specialists versus primary care veterinarians, a recent abstract revealed that dogs with chronic otitis, a common sequela of AD,³⁴ had better long-term outcomes when managed by a specialist.³¹ Another study demonstrated that clients had improved compliance with allergen refills when managed by a veterinary dermatologist.³⁵

Statistical reports collected and analysed by the American Veterinary Medical Association have demonstrated a decreased tendency for cats to be presented to veterinarians compared over the past decade as compared to dogs,^{36,37} which may be reflected in the decreased tendency of clients with cats to follow through with referral recommendations noted in this study. When given the opportunity to provide comments, one participant expressed concern about restraint and handling techniques practiced at specialist practices that do not examine cats exclusively. Therefore, engagement of dermatology referral practices in programmes which promote reduction of patient stress, such as Cat Friendly Practice certification, might help mitigate these concerns.

Most participants indicated that communication within the first three to seven days following an appointment increased their willingness to refer atopic pets. Timely communication may not only enhance the relationship between providers, but also provide for improved continuity of care. Interprovider relationships also might be maintained and improved by referral of the pet back to the primary care veterinarian for routine wellness care. Several participants indicated this concern specifically in the comment section.

Mitigating travel burden and cost barriers is more challenging. In these instances, beyond a casual mention of referral, primary care veterinarians should be comfortable in describing the qualifications of a specialist and how a veterinary dermatologist might promote better management of a dermatological case. Many clients might not otherwise be aware such an option exists, let alone understand what benefits a veterinary dermatologists could offer. As one survey participant commented, clients may develop a disproportionate fear of specialist care costs if accurate information is not available. It befits the specialist to advertise their qualifications and ensure transparency of costs and expected visit frequency, so information is accurately conveyed to potential clients. Additionally, because multiple studies have consistently demonstrated that cost is not the most important factor for decisions about a person's own health problems or for their pets' health problems,^{30,38–40} both primary care and specialist veterinarians should be able to convey to pet owners the potentials benefits of specialist care.

When considering ASIT, severity and duration of clinical signs are only some of the factors to contemplate. As described in the 2010 clinical practice guidelines from the

International Task Force on Canine Atopic Dermatitis, even dogs which experience brief, repeated seasonal signs, and which fail other therapies or experience undesirable adverse effects, might be candidates for ASIT.⁹ Therefore, the veterinarian must advocate for the pet's best interests while educating the client on the chronic nature of AD. The client should be enabled to make an informed decision while respecting that client's unavoidable limitations, in order to reach the best management decisions for the pet.

More participants recommended ASIT for dogs with AD compared to cats. Possible barriers may include clients' concerns about administration and veterinarians' concerns about efficacy. More than half of participants felt clients "always, often, or sometimes" expressed concern about their ability to administer allergen, which could act as a potential deterrent for clients. Offering alternative methods of administration such as SLIT or in-clinic administration of allergens might ameliorate their concerns.

Multiple participants commented that most atopic animals are well-controlled on symptomatic therapies with higher efficacy in controlling signs compared with ASIT, and frequently find clients become discouraged with persistent clinical signs of atopic dermatitis while undergoing ASIT. However, dermatology specialists recognize the value of providing immediate relief to pruritic allergic patients with various antipruritic strategies, while simultaneously managing long-term ASIT, as reduced adherence to immunotherapy owing to lag time in response has been well-documented.^{41,42} This recurrent concern might represent a discrepancy in the way that dermatologists manage ASIT compared with primary care veterinarians.

Offering local continuing education potentially has numerous benefits, including solidifying specialist-referring veterinarian relationships, increasing awareness of disease specifics and diagnostic pitfalls, displaying the value of specialist training, and providing opportunities to discuss the potential value of ASIT as part of multimodal management. Many participants expressed interest in learning more about ASIT mechanisms and the potential prevention of neosensitization, while some still did not understand the difference between this approach and long-term management of patients with therapies such as lokivetmab (Cytoint, Zoetis; Kalamazoo, MI, USA). Enhanced understanding of therapeutic mechanisms could allow primary care veterinarians to have more in-depth and accurate discussions with clients when their pets are candidates for ASIT.

Limitations of the current study largely include the self-reported nature and potential for survey bias. Response bias, particularly acquiescence bias, may be present as participants might answer dermatological questions more favourably in light of the dermatological theme. Additionally, sampling bias may be present as participants were recruited through an online community, which may skew the population to those likely to participate in online information sharing. However, this survey had a greater number of participants than many similar human medicine studies^{20–26} and comparable numbers to previous surveys using the same platform^{28,31,43–46} with a range of participants including seasoned and recent graduates.

Nonresponse bias was minimized though multiple E-mail notifications to encourage participation of as many members as possible. To minimize question order bias, questions were grouped together by common topic (e.g. referral or immunotherapy).

In conclusion, veterinary dermatologists might improve relationships with referring veterinarians through timely communication, local outreach via continuing education, and referral back to primary care veterinarians for management of nondermatological conditions and wellness. Local outreach and continuing education offerings by veterinary dermatologists may improve referring veterinarians' level of understanding of atopic diseases and their management, including mechanisms and expectations for ASIT.

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Résumé

Contexte – Une étude pilote sur l'attitude des vétérinaires généralistes concernant la dermatite atopique canine et l'initiation à l'immunothérapie spécifique d'allergène (ITSA) a récemment révélé plusieurs barrières à référer à un spécialiste (aux USA) et à l'utilisation d'ITSA.

Hypothèses/Objectifs – Le premier objectif a été de collecter les données sur les habitudes de référé et les pratiques d'ITSA parmi une cohorte plus importante de vétérinaires généralistes dans le monde entier et à explorer les barrières au référé et à la gestion des dermatites atopiques du chien et du chat avec ITSA.

Matériels et méthodes – Une étude en ligne, administrée par le Veterinary Information Network (VIN, Davis, CA, USA), a demandé aux participants de rapporter leurs habitudes de référé et leurs recommandations d'ITSA et de noter les barrières et les facteurs de motivation à l'aide de réponses d'échelle Likert.

Résultats – Sur les 827 réponses, 97.6% étaient des vétérinaires généralistes. Un grand nombre de praticiens (84.5%) ont rapporté voir souvent des chiens atopiques, comparé aux chats atopiques (9.7%). Moins de ces vétérinaires (56.6%) réfèrent les chats atopiques à un spécialiste, comparé aux chiens (73.5%). L'opportunité de communiquer, partager une gestion au long cours du cas, et fournir des outils d'éducation continue a été identifié comme les facteurs associés avec l'augmentation de la volonté de référer. Une proportion plus importante de vétérinaires a rapporté recommander l'ITSA pour les chiens (44.3%) que pour les chats (16.0%). Seuls 56.0% des répondants considéraient que les taux de succès de l'ITSA étaient acceptable alors que 27.9% étaient indifférent au sujet.

Conclusions et importance clinique – Les spécialistes en dermatologie pourraient construire de plus fortes relations avec les vétérinaires référant via les suivis de cas et l'enseignement continu au vu des bénéfices au long cours de l'ITSA et des pratiques de gestion symptomatique.

Resumen

Introducción – un estudio piloto reciente de las actitudes de los veterinarios de atención primaria con respecto a la dermatitis atópica canina y el inicio de la inmunoterapia específica con alérgenos (ASIT) reveló varias barreras para la derivación a especialistas (en USA) y para el uso de ASIT como modalidad de tratamiento.

Hipótesis/Objetivos – el objetivo principal de este trabajo fue recopilar datos sobre los hábitos de derivación a especialistas y las prácticas de ASIT entre una cohorte mucho más amplia de veterinarios de atención primaria ubicados en todo el mundo, y explorar las barreras para la derivación y el tratamiento de enfermedades atópicas de perros y gatos con ASIT.

Supporting Information

Additional Supporting Information may be found in the online version of this article.

Figure S1. Allergen-specific immunotherapy survey.

Figure S2A. Frequency of dermatology referral for canines by country of practice.

Figure S2B. Frequency of dermatology referral for felines by country of practice.

Figure S2C. Frequency of dermatology referral compliance for canines by country of practice.

Figure S2D. Frequency of dermatology referral compliance for felines by country of practice.

Figure S3. Avidity of referral by country of practice.

Figure S4A. Frequency of dermatology referral for canines based on time to reach a dermatology practice.

Figure S4B. Frequency of dermatology referral for felines based on time to reach a dermatology practice.

Table S1. Initial communication following an appointment.

Table S2. Client compliance with referral.

Table S3. Recurrent pyoderma.

Table S4. When a client expresses interest in dermatological referral for their atopic pet, I.

Table S5. Client travel time to reach a dermatologist.

Métodos y materiales – una encuesta en línea, administrada a través de la Red de información veterinaria (VIN, Davis, CA, USA) pidió a los participantes que informaran por sí mismos sobre sus hábitos de derivación y recomendaciones de inmunoterapia, y calificaran las barreras y los factores motivadores utilizando respuestas en escala Likert.

Resultados – de las 827 respuestas obtenidas a la encuesta, el 97,6% se identificó como veterinario de atención primaria. Un mayor número de veterinarios (84,5%) informó haber visto perros atópicos con frecuencia, en comparación con gatos atópicos (9,7%). Menos de estos veterinarios (56,6%) remitieron gatos atópicos para atención especializada, en comparación con perros atópicos (73,5%). La comunicación oportuna, compartir el control a largo plazo del caso y la provisión de educación continua local fueron identificados como factores asociados con una mayor disposición a referir. Una mayor proporción de veterinarios informó recomendar ASIT para perros (44,3%) que para gatos (16,0%). Solo el 56,0% de los encuestados consideró que las tasas de éxito de ASIT eran aceptables, mientras que el 27,9% fue neutral sobre el tema.

Conclusiones y relevancia clínica – los especialistas en dermatología pueden construir relaciones más sólidas con los veterinarios que derivan casos a través del seguimiento oportuno del caso y la provisión de educación continua sobre los beneficios a largo plazo de la ASIT y las prácticas de manejo sintomático.

Zusammenfassung

Hintergrund – Eine jüngste Pilotstudie über die Einstellungen von Haustierärzten in Bezug auf die canine atopische Dermatitis sowie der Initiierung einer Allergen-spezifischen Immuntherapie (ASIT) zeigte mehrere Barrieren gegenüber Überweisungen zu SpezialistInnen (in den USA) und einem Einsatz von ASIT als Behandlungsmöglichkeit.

Hypothese/Ziele – Das primäre Ziel war es, Daten über die Überweisungsmentalitäten und den ASIT Einsatz in der Praxis von einer viel größeren Kohorte von Haustierärzten auf der ganzen Welt zu sammeln, sowie Barrieren in Bezug auf eine Überweisung oder das Management der atopischen Erkrankung bei Hunden und Katzen mittels ASIT zu untersuchen.

Methoden und Materialien – Ein Online Fragebogen, welcher durch ein Veterinärmedizinisches Informationsnetzwerk (VIN, Davis, CA, USA) zur Verfügung gestellt wurde, befragte TeilnehmerInnen über ihre eigenen Überweisungsgewohnheiten und über ihre Empfehlungen im Bezug auf Immuntherapie, sowie nach einer Einstufung ihrer Antworten im Bezug auf ihrer Barrieren und Motivationsfaktoren mittels Likert-Skala.

Ergebnisse – Von 827 Fragebogen Antworten wurden 97,6% als jene von HaustierärztInnen identifiziert. Eine große Anzahl and PraktikerInnen (84,5%) berichteten im Vergleich zu atopischen Katzen (9,7%) häufig atopische Hunde zu sehen. Es überwiesen weniger dieser TierärztInnen (56,6%) atopische Katzen zu SpezialistInnen im Vergleich zu atopischen Hunden (73,5%). Als Faktoren für einen stärkeren Willen zur Überweisung wurde eine zeitgerechte Kommunikation, eine Anteilnahme am Langzeitmanagement von Fällen, sowie die Bereitstellung von regionaler Fortbildung identifiziert. Ein höherer Prozentsatz an PraktikerInnen empfahl ASIT für Hunde (44,3%) als für Katzen (16,0%). Nur 56,0% der Antwortenden fanden die Erfolgsrate von ASIT akzeptabel, während 27,9% bei diesem Thema neutral antworteten.

Schlussfolgerungen und klinische Bedeutung – Dermatologische SpezialistInnen sollten bessere Beziehungen zu den überweisenden TierärztInnen ausbilden durch ein zeitgerechtes Follow-Up von Fällen und der Ermöglichung regionaler Fortbildung in Bezug auf die langfristigen Vorteile von ASIT und die Praktiken symptomatischer Therapie.

概要

背景 – 犬アトピー性皮膚炎およびアレルギー特異的免疫療法 (ASIT) の手引きに関する一次診療施設獣医師の態度を調査した近年のパイロット研究では、専門医紹介 (米国) および一つの治療法としてASITを用いることに対するいくつかの障壁が明らかになった。

仮説/目的 – 本研究の主な目的は、世界中にいる一次診療施設獣医師に対するはるかに大規模なコホート間で紹介の習慣およびASITの実践に関するデータを収集し、ASITを用いた犬および猫のアトピー疾患の紹介および管理の障壁を探ることであった。

材料と方法 – Veterinary Information Network(VIN, Davis, CA, USA) を通じて実施されたオンライン調査では、参加者にリッカート尺度の応答を用いて、紹介の習慣および免疫療法の推奨事項、評価の障壁および動機付け要因を自己報告するよう求めた。

結果 – 827の調査回答のうち、97.6%が一次診療施設開業医として特定された。アトピー猫 (9.7%) と比較して、より多くの開業医 (84.5%) がアトピー犬を頻繁に見ていると報告した。これらの獣医師のうち、アトピー犬 (73.5%) と比較して、アトピー猫を専門医治療に紹介した人は少なかった (56.6%)。タイムリーなコミュニケーション、症例の長期管理の共有、および地域の継続教育の提供は、紹介意欲の高まりに関する要因として特定された。猫 (16.0%) よりも犬 (44.3%) にASITを推奨する開業医の割合が高かった。ASITの成功率を許容できると考えたのは回答者の56.0%のみであったが、27.9%はこのトピックについて中立であった。

結論と臨床的関連性 — 獣医皮膚科専門医は、タイムリーな症例フォローアップおよびASITの長期的利益や対症療法の実践に関する継続教育の提供を通じて、紹介獣医師とのより強い関係を構築する可能性がある。

要約

背景 — 最近一項首診保健獣医対犬特応性皮炎和启动过敏原特异性免疫治疗(ASIT)态度的调查, 初步揭示了专家转诊(在美国) 和使用ASIT作为治疗方式的几个障碍。

假设/目的 — 主要目的是在世界各地更大范围的首诊保健兽医队伍中, 收集关于转诊习惯和ASIT的临床数据, 并探索犬和猫特应性疾病转诊和ASIT管理的障碍。

方法和材料 — 通过兽医信息网络(VIN, Davis, CA, USA)进行的在线调查, 要求参与者自我报告其转诊习惯和免疫治疗建议, 并使用李克特量表填写来评定障碍和激励因素。

结果 — 在827份调查回答中, 首诊保健医生是97.6%。与特应性猫(9.7%)相比, 更多的执业兽医(84.5%)报告经常看到特应性犬。与特应性犬(73.5%)相比, 这些兽医中转诊特应性猫进行专科护理的兽医较少(56.6%)。及时沟通、分享病例的长期管理, 以及提供当地继续教育被确定为增加转诊意愿的因素。执业兽医报告推荐犬进行ASIT的比例(44.3%)高于猫(16.0%)。只有56.0%的受访者认为ASIT的成功率是可以接受的, 而27.9%的受访者对该项目持中立态度。

结论和临床相关性 — 皮肤科专家可能通过及时的病例随访, 并提供有益的长期ASIT和临床对症管理的继续教育, 与首诊兽医建立更强的关系。

Resumo

Contexto — Um estudo piloto recente sobre o comportamento de veterinários clínicos gerais em relação à dermatite atópica canina e à implementação da imunoterapia alérgeno-específica (ASIT) revelou várias barreiras para o encaminhamento a um especialista (nos EUA) e para o uso da ASIT como uma modalidade de tratamento.

Hipótese/Objetivos — O objetivo principal do estudo foi coletar dados sobre hábitos de encaminhamento e práticas de ASIT entre uma coorte muito maior de veterinários clínicos gerais localizados em todo o mundo e explorar as barreiras para encaminhamento e manejo de doenças atópicas de cães e gatos com ASIT.

Métodos e materiais — Uma pesquisa online, administrada através da Rede de Informação Veterinária (VIN, Davis, CA, EUA), pediu aos participantes que relatassem seus hábitos de encaminhamento e recomendações de imunoterapia, e classificassem as barreiras e fatores motivadores usando respostas em escala de Likert.

Resultados — Das 827 respostas da pesquisa, 97,6% dos participantes foram identificados como profissionais clínicos gerais. Um grande número de clínicos (84,5%) relatou ver cães atópicos com frequência, em comparação com gatos atópicos (9,7%). Uma quantidade menor desses veterinários (56,6%) encaminharam gatos atópicos para cuidados especializados, em comparação com cães atópicos (73,5%). Comunicação ágil, compartilhamento do manejo a longo prazo do caso e fornecimento de educação continuada local foram identificados como fatores associados ao aumento da intenção de encaminhar. Uma proporção maior de clínicos relatou recomendar ASIT para cães (44,3%) do que para gatos (16,0%). Apenas 56,0% dos entrevistados consideraram as taxas de sucesso do ASIT aceitáveis, enquanto 27,9% foram neutros sobre o assunto.

Conclusões e relevância clínica — Os especialistas em dermatologia podem construir relacionamentos mais fortes com os veterinários clínicos gerais por meio da comunicação mais ágil sobre o caso e do fornecimento de educação continuada sobre os benefícios de longo prazo da ASIT e práticas de manejo sintomático.

Allergen-specific Immunotherapy Survey

Page: Allergen-specific Immunotherapy - barriers to referral

Page: Demographics

Q1 Are you in clinical practice?

Type: RADIO

Option Title

Yes

No

Q2 : Do you ever, in your work setting, see or consult on dogs or cats with atopic dermatitis?

Type: RADIO

Display When: #1 Question "Are you in clinical practice?" is one of the following answers ("Yes")

Option Title

Yes

No

Q3 : What best describes your current work situation?

Type: RADIO

Display When: #2 Question "Do you ever, in your work setting, see or consult on dogs or cats with **atopic dermatitis**?" is one of the following answers ("Yes")

Option Title

Yes

No

First opinion or primary care veterinarian

Non-dermatologist referral veterinarian

Veterinary dermatologist or practice
limited to dermatology

Emergency veterinarian

Shelter veterinarian

Q4 : In which country do you mostly practice?

Type: RADIO

Display When: #2 Question "Do you ever, in your work setting, see or consult on dogs or cats with **atopic dermatitis**?" is one of the following answers ("Yes")

Option Title

United States

Canada

Australia

United Kingdom

Other - Write In (Required)

Q5 : In what year did you obtain your veterinary degree?

Type: MENU

Display When: #2 Question "Do you ever, in your work setting, see or consult on dogs or cats with **atopic dermatitis**?" is one of the following answers ("Yes")

Page: Referral of atopic pets

Q6 : How frequently do you see dogs with atopic dermatitis?

Type: RADIO

Option Title

Never

Rarely

Sometimes

Often

Q7 : For the cases of dogs with atopic dermatitis that you see, how frequently do you discuss referral to a veterinary dermatologist with clients?

Type: RADIO

Display When: #6 Question "How frequently do you see dogs with atopic dermatitis?" is one of the following answers ("Rarely", "Sometimes", "Often")

Option Title

Never

Rarely

Sometimes

Often

Always

I don't see atopic dogs

Q8 : What proportion of clients with atopic dogs comply with your recommendation of referral to a veterinary dermatologist?

Type: RADIO

Display When: #7 Question "For the cases of dogs with atopic dermatitis that you see, how frequently do you discuss referral to a veterinary dermatologist with clients?" is one of the following answers ("Rarely", "Sometimes", "Often", "Always")

Option Title

None

Few

Some

Most

All

Q9 : How frequently do you see cats with atopic dermatitis?

Type: RADIO

Display When: #8 Question "What proportion of clients with atopic dogs comply with your recommendation of referral to a veterinary dermatologist?" OR) #7 Question "For the cases of dogs with atopic dermatitis that you see, how frequently do you discuss referral to a veterinary dermatologist with clients?" is one of the following answers ("Never") OR #6 Question "How frequently do you see dogs with atopic dermatitis?" is one of the following answers ("Never") (

Option Title

Never

Rarely

Sometimes

Often

Q10 : For the cases of cats with atopic dermatitis that you see, how frequently do you discuss referral to a veterinary dermatologist with clients?

Type: RADIO

Display When: #9 Question "How frequently do you see cats with atopic dermatitis?" is one of the following answers ("Rarely", "Sometimes", "Often")

Option Title

Never

Rarely

Sometimes

Often

Always

I don't see atopic cats

Q11 : What proportion of clients with atopic cats comply with your recommendation of referral to a veterinary dermatologist?

Type: RADIO

Display When: #10 Question "For the cases of cats with atopic dermatitis that you see, how frequently do you discuss referral to a veterinary dermatologist with clients?" is one of the following answers ("Rarely", "Sometimes", "Often", "Always")

Option Title

None

Few

Some

Most

All

Page: Benefits and expectations of referral

Q12 : Do you believe that atopic dogs benefit from being referred to a veterinary dermatologist?

Type: RADIO

Display When: #6 Question "How frequently do you see dogs with atopic dermatitis?" is one of the following answers ("Rarely", "Sometimes", "Often")

Option Title

No

Yes, a few dogs

Yes, some dogs

Yes, most dogs

Yes, all dogs

Q13 :

Do you believe that atopic cats benefit from being referred to a veterinary dermatologist?

Type: RADIO

Display When: #9 Question "How frequently do you see cats with atopic dermatitis?" is one of the following answers ("Rarely", "Sometimes", "Often")

Option Title

No

Yes, a few cats

Yes, some cats

Yes, most cats

Yes, all cats

Page:

Display When: #13 Question "Do you believe that atopic cats benefit from being referred to a veterinary dermatologist?" is one of the following answers ("Yes, a few cats", "Yes, some cats", "Yes, most cats", "Yes, all cats") OR) #12 Question "Do you believe that atopic dogs benefit from being referred to a veterinary dermatologist?" is one of the following answers ("Yes, a few dogs", "Yes, some dogs", "Yes, most dogs", "Yes, all dogs") OR) #10 Question "For the cases of cats with atopic dermatitis that you see, how frequently do you discuss referral to a veterinary dermatologist with clients?" is one of the following answers ("Rarely", "Sometimes", "Often", "Always", "I don't see atopic cats") OR #7 Question "For the cases of dogs with atopic dermatitis that you see, how frequently do you discuss referral to a veterinary dermatologist with clients?" is one of the following answers ("Rarely", "Sometimes", "Often", "Always") ((

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Q14 : I am more likely to refer patients to a veterinary dermatologist who continues to keep me involved in patient care post-referral by sending the patient back for monitoring of the atopy, dispensing medication for the atopy, or providing ongoing immunotherapy.

Do you agree with this statement?

Type: RADIO

Option Title

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

Q15 : I prefer for the veterinary dermatologist to keep me informed, but to provide all the dermatologic diagnostic testing, post-diagnostic monitoring, and therapeutic interventions for the referred atopic patient

Do you agree with this statement?

Type: RADIO

Option Title

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

Q16 : Communication (referral letter, phone call, copy of discharges) about exam findings and treatment strategy within a week of presentation increases my willingness to refer an atopic patient to a veterinary dermatologist.

Do you agree with this statement?

Type: RADIO

Option Title

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

Q17 : I am more likely to refer patients to a veterinary dermatologist who is actively involved in providing continuing education within the local area.

Do you agree with this statement?

Type: RADIO

Option Title

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

Page: Allergy testing, ASIT and RESPIT

Q18 : How frequently do you recommend allergy testing (either serology or intradermal) for a dog with atopic dermatitis?

Type: RADIO

Display When: #6 Question "How frequently do you see dogs with atopic dermatitis?" is one of the following answers ("Rarely", "Sometimes", "Often")

Option Title

Never

Rarely

Sometimes

Often

Always

Q19 : How frequently do you recommend Allergen-Specific Immunotherapy (ASIT) for a dog with atopic dermatitis?

Type: RADIO

Display When: #18 Question "How frequently do you recommend **allergy testing** (either serology or intradermal) for a dog with atopic dermatitis?" AND #6 Question "How frequently do you see dogs with atopic dermatitis?" is one of the following answers ("Rarely", "Sometimes", "Often")

Option Title

Never

Rarely

Sometimes

Often

Always

I have never heard of ASIT

Q20 : How frequently do you recommend REgionally SPecific ImmunoTherapy (RESPIT®) for a dog with atopic dermatitis?

Type: RADIO

Display When: #19 Question "How frequently do you recommend **Allergen-Specific Immunotherapy** (ASIT) for a dog with atopic dermatitis?" AND) #18 Question "How frequently do you recommend **allergy testing** (either serology or intradermal) for a dog with atopic dermatitis?" AND #6 Question "How frequently do you see dogs with atopic dermatitis?" is one of the following answers ("Rarely", "Sometimes", "Often") (

Option Title

Never

Rarely

Sometimes

Often

Always

I have never heard of RESPIT

Q21 : How frequently do you recommend allergy testing (either serology or intradermal) for a cat with atopic dermatitis?

Type: RADIO

Display When: #9 Question "How frequently do you see cats with atopic dermatitis?" is one of the following answers ("Rarely", "Sometimes", "Often")

Option Title

Never

Rarely

Sometimes

Often

Always

Q22 : How frequently do you recommend Allergen-Specific Immunotherapy (ASIT) for a cat with atopic dermatitis?

Type: RADIO

Display When: #21 Question "How frequently do you recommend **allergy testing** (either serology or intradermal) for a cat with atopic dermatitis?" AND #9 Question "How frequently do you see cats with atopic dermatitis?" is one of the following answers ("Rarely", "Sometimes", "Often")

Option Title

Never

Rarely

Sometimes

Often

Always

I have never heard of ASIT

Q23 : How frequently do you recommend REgionally SPecific ImmunoTherapy (RESPIT®) for a cat with atopic dermatitis?

Type: RADIO

Display When: #22 Question "How frequently do you recommend **Allergen-Specific Immunotherapy** (ASIT) for a cat with atopic dermatitis?" AND) #21 Question "How frequently do you recommend **allergy testing** (either serology or intradermal) for a cat with atopic dermatitis?" AND #9 Question "How frequently do you see cats with atopic dermatitis?" is one of the following answers ("Rarely", "Sometimes", "Often") (

Option Title

Never

Rarely

Sometimes

Often

Always

I have never heard of RESPIT

Page: Sublingual immunotherapy

Display When: #21 Question "How frequently do you recommend **allergy testing** (either serology or intradermal) for a cat with atopic dermatitis?" OR #18 Question "How frequently do you recommend **allergy testing** (either serology or intradermal) for a dog with atopic dermatitis?"

Q24 : Are you aware of sublingual immunotherapy for treating atopic dermatitis in dogs or cats?

Type: RADIO

Option Title

Yes

No

Q25 : Do you have experience using sublingual immunotherapy?

Type: RADIO

Display When: #24 Question "Are you aware of sublingual immunotherapy for treating atopic dermatitis in dogs or cats?" is one of the following answers ("Yes")

Option Title

Yes

No

Page: Referral practices and preferences

Display When: #11 Question "What proportion of clients with atopic cats comply with your recommendation of referral to a veterinary dermatologist?" is one of the following answers ("Few", "Some", "Most", "All") OR #8 Question "What proportion of clients with atopic dogs comply with your recommendation of referral to a veterinary dermatologist?" is one of the following answers ("Few", "Some", "Most", "All")

Q26 : How soon after the referral appointment do you prefer to have initial (not final) communication about the case from the veterinary dermatologist?

Type: RADIO

Option Title

- Same day
- Next day
- Within 3 days
- Within a week
- Prior to the dog's next scheduled appointment
- I don't have a preference

Q27 : When presenting referral to clients, how avidly do you recommend or promote referral to a dermatologist for clients with atopic pets?

Type: RADIO

Option Title

- I strongly advise or recommend it
- I advise it
- I mention it

Q28 : Why do you do this?

Type: ESSAY

Display When: #27 Question "When presenting referral to clients, **how avidly** do you recommend or promote referral to a dermatologist for clients with atopic pets?"

Q29 : When a client expresses interest in dermatologic referral for their atopic pet, how often do you do the following:

Suggest my usual/favorite dermatology specialist and provide contact information for the client to arrange an appointment

Type: RADIO

Option Title

Never

Rarely

Sometimes

Often

Always

Have my office contact the dermatology specialist's office to determine appointment availability and schedule the appointment for the client

Type: RADIO

Option Title

Never

Rarely

Sometimes

Often

Always

Page: (untitled)

Q30 : How likely are you to refer a pet with atopic dermatitis to a dermatologist if it

Fails to respond to one of your available treatment options (e.g. antihistamines, Apoquel, Atopica, Cytopoint, glucocorticoids)

Type: RADIO

Option Title

Very unlikely

Unlikely

Neither likely nor unlikely

Likely

Very likely

Fails to respond to two of your available treatment options

Type: RADIO

Option Title

Very unlikely

Unlikely

Neither likely nor unlikely

Likely

Very likely

Fails to respond to more than two of your available treatment options

Type: RADIO

Option Title

Very unlikely

Unlikely

Neither likely nor unlikely

Likely

Very likely

Q 31 : Pets with atopic dermatitis typically need to demonstrate recurring infections or develop a methicillin-resistant Staphylococcus infection prior to me referring the patient to a veterinary dermatologist.

Do you agree with this statement?

Type: RADIO

Option Title

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

Q32 : To reach a veterinary dermatologist, my clients must travel approximately

Type: RADIO

Option Title

30 minutes or less

30 minutes to an hour

1 to 2 hours

2 to 3 hours

3 or more hours

Q33 : When clients object to referral to a veterinary dermatologist, how frequently do they mention the following factors as reasons or areas of concern?

Type: TABLE

Travel time

Option Title

Never

Rarely

Infrequently

Sometimes

Often

Always

Cost of the referral consultation

Option Title

Never

Rarely

Infrequently

Sometimes

Often

Always

Cost of repeated diagnostic tests

Option Title

Never

Rarely

Infrequently

Sometimes

Often

Always

Cost of time taken off work

Option Title

Never

Rarely

Infrequently
Sometimes
Often
Always

Dislike of referral specialists in general

Option Title

Never
Rarely
Infrequently
Sometimes
Often
Always

Faith in you to handle the problem

Option Title

Never
Rarely
Infrequently
Sometimes
Often
Always

Q34 : Have you ever had clients administer allergen-specific immunotherapy to their pets?

Type: RADIO

Option Title

Yes

No

Q35 : How often do clients express concerns regarding their ability to administer allergen immunotherapy to their pets?

Type: RADIO

Display When: #34 Question "Have you ever had clients administer allergen-specific immunotherapy to their pets?" is one of the following answers ("Yes")

Option Title

Never

Rarely

Sometimes

Often

Always

Page: (untitled)

Q36 : The World Association for Veterinary Dermatologists (WAVD) has suggested recommending allergen-specific testing and immunotherapy in all atopic dogs with severe clinical signs or signs lasting greater than three months per year (Hensel et al).

Do you agree with this statement?

Type: RADIO

Option Title

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

Q37 : Approximately 2/3 of atopic dogs will have >50% improvement in clinical signs after allergen-specific immunotherapy (DeBoer 2017). How acceptable do you find this success rate?

Type: RADIO

Option Title

Completely unacceptable

Unacceptable

Neutral

Acceptable

Completely acceptable

Q38 : Are you aware of the following theory?

According to research in humans and mice (Des Roches 1997, Mondoulet 2015, Pajno 2001, Paller 2019), allergen-specific immunotherapy may be the only known treatment that delays or prevents the development of neosensitization to new allergens and may perhaps slow down or halt the “atopic march” of worsening clinical signs.

Type: RADIO

Option Title

Yes

No

Q39 : Early initiation of allergen-specific immunotherapy and desensitization with interim control of clinical signs using available therapies helps mitigate the escalation of clinical signs and neosensitization of atopic pets.

Do you agree with this statement?

Type: RADIO

Option Title

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

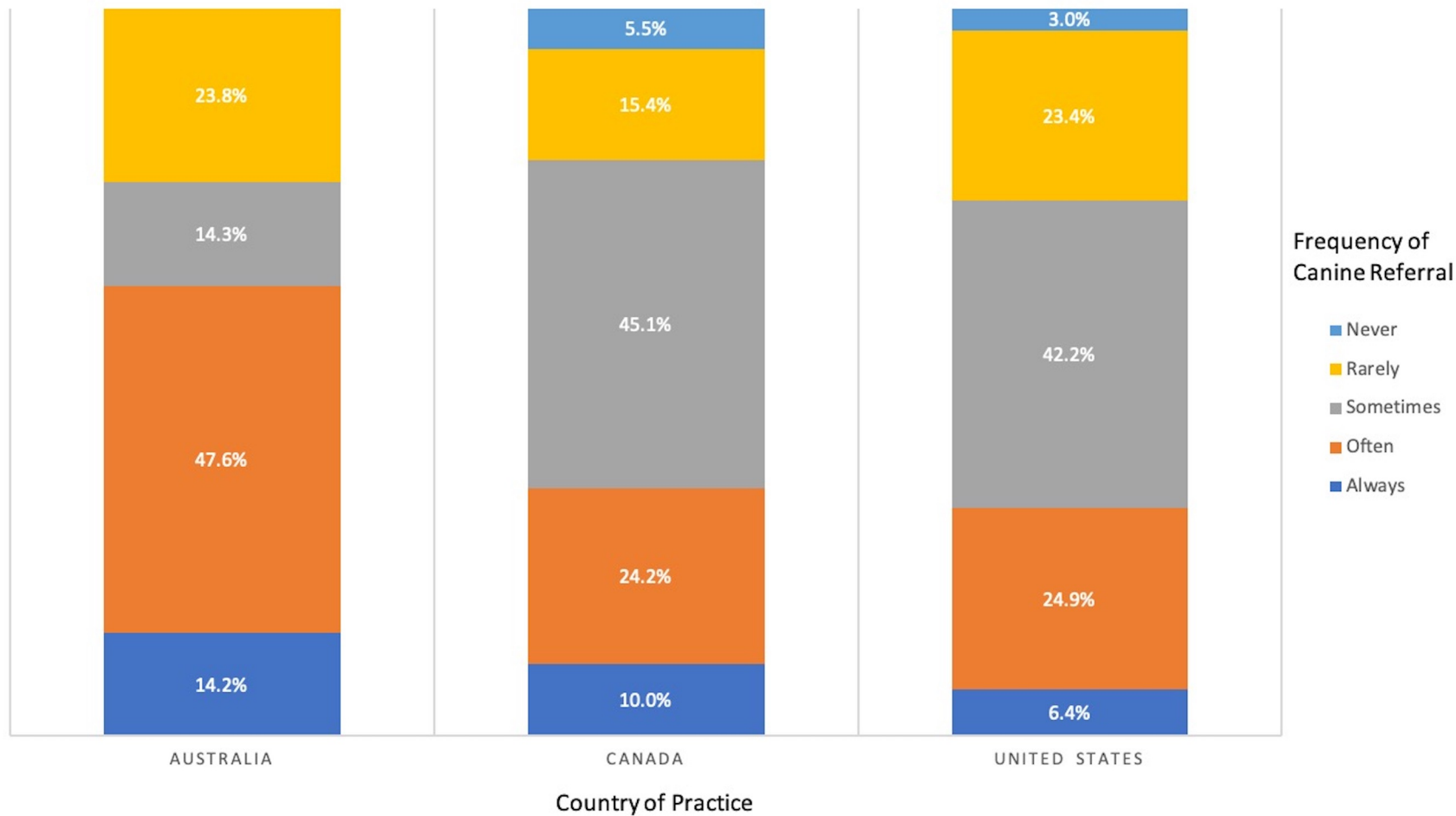
Page: Final thoughts

Q40 : Do you have any additional comments about Allergen-Specific Immunotherapy and referral to Dermatologists?

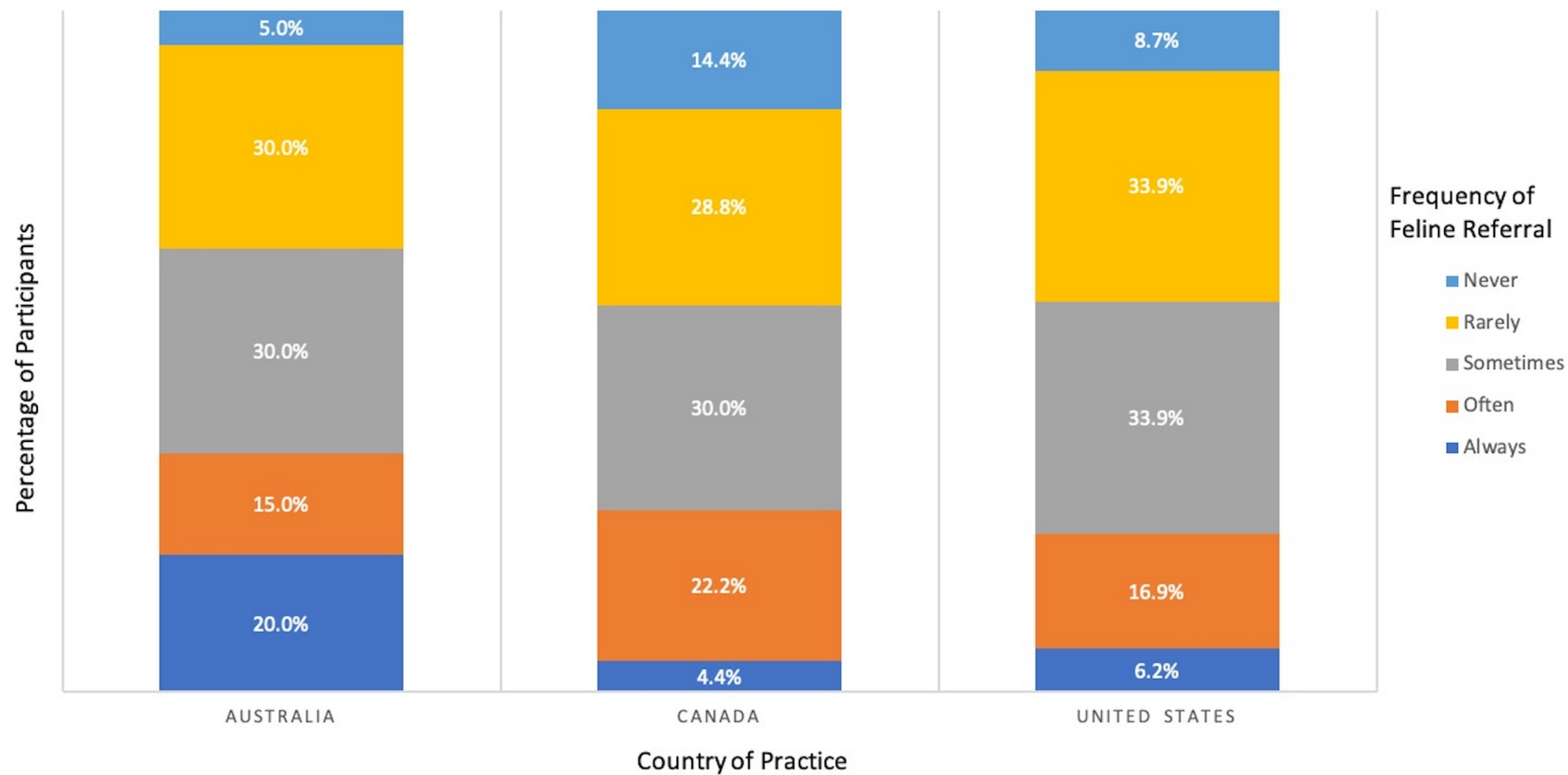
Type: ESSAY

a.

Percentage of Participants



b.

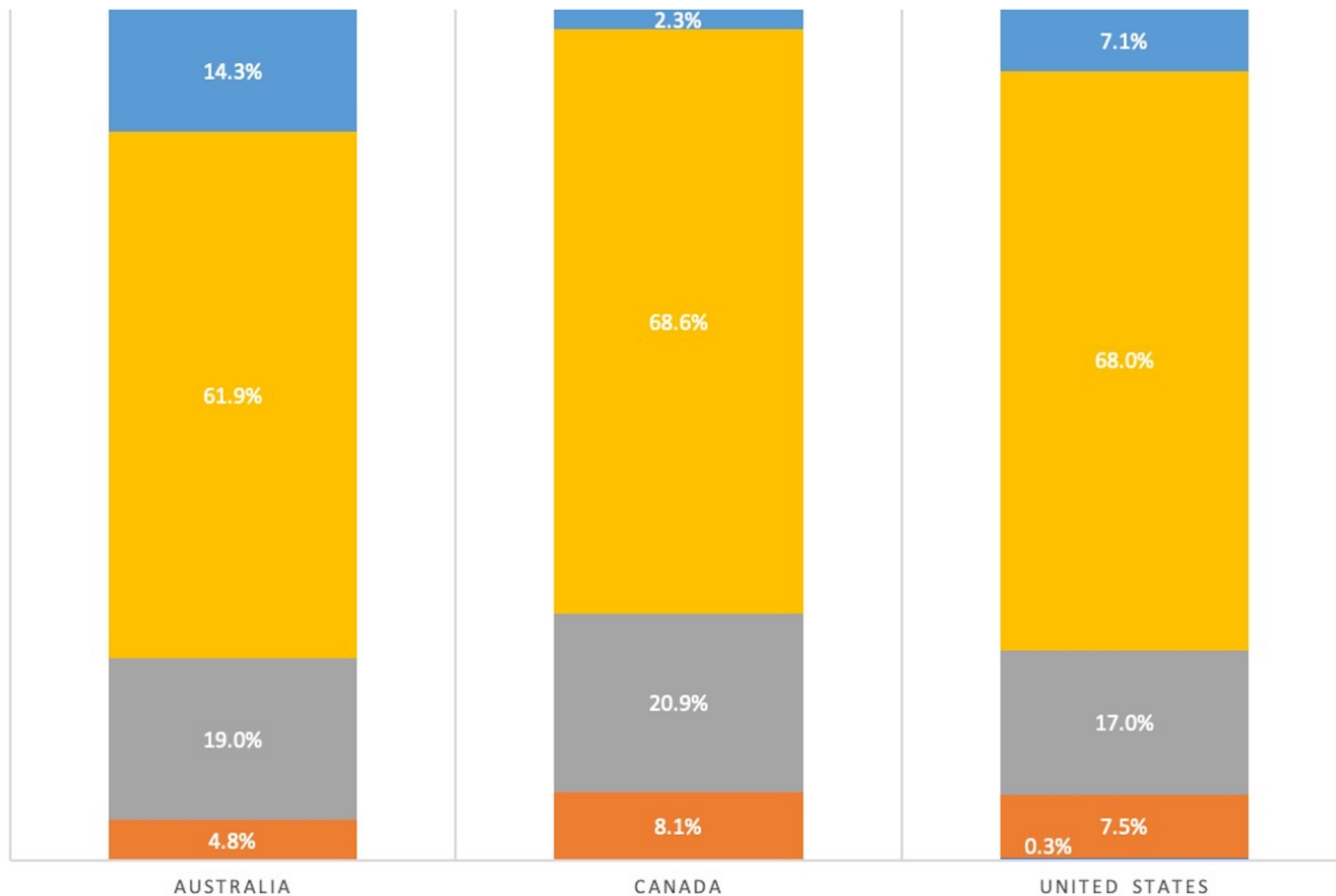


c.

Percentage of Participants

Frequency of Referral
Compliance - Canine

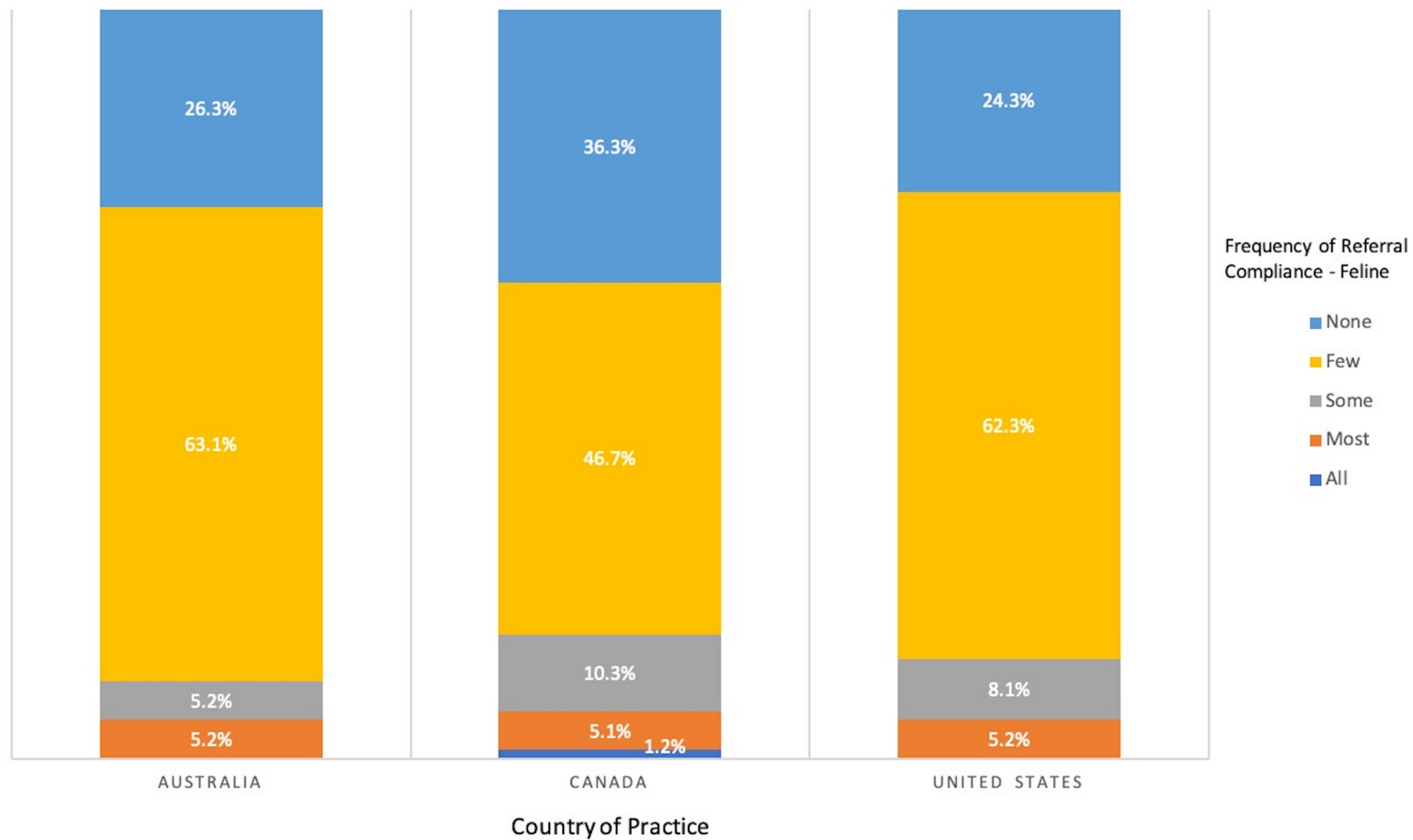
- None
- Few
- Some
- Most
- All



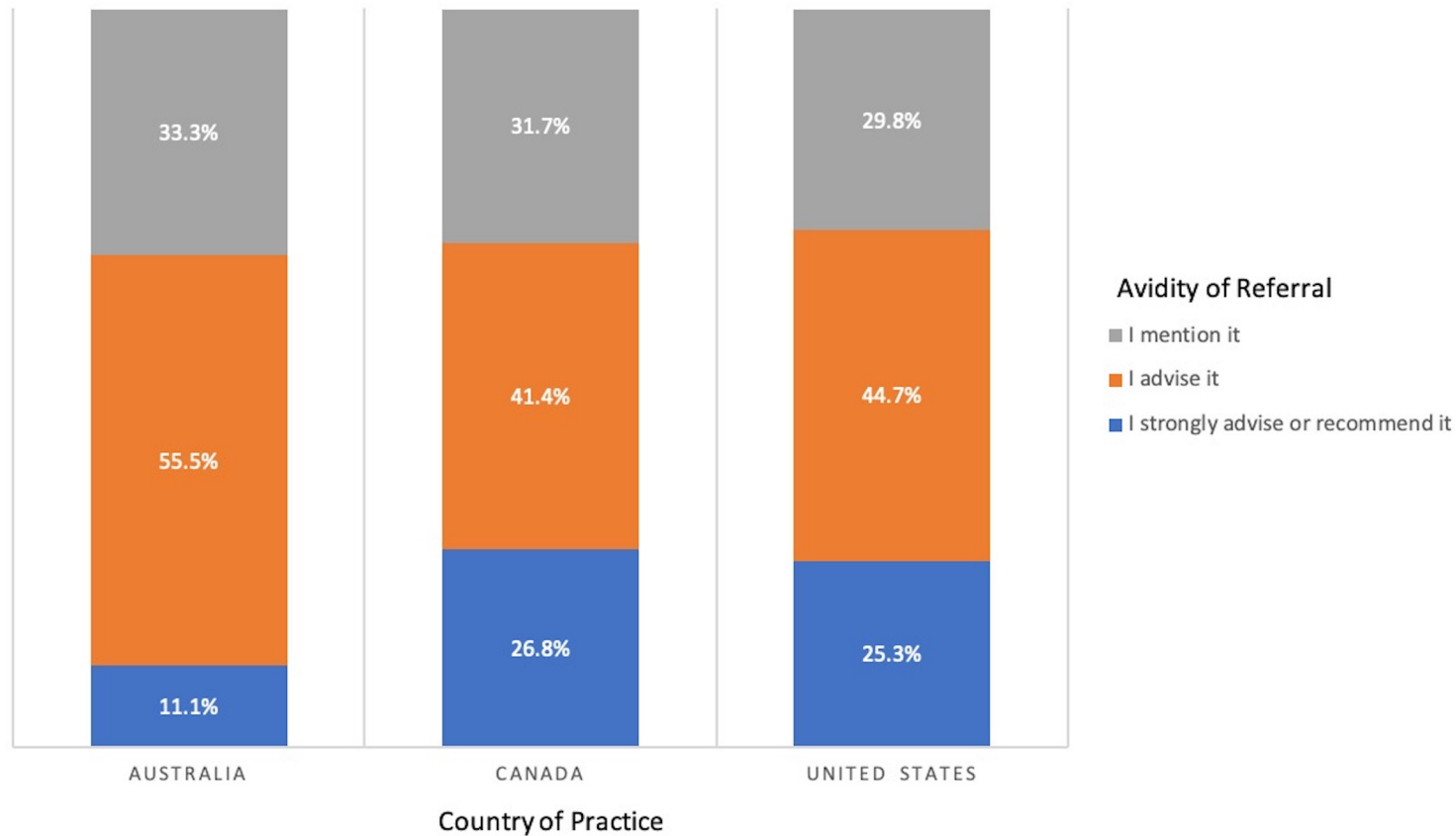
Country of Practice

d.

Percentage of Participants

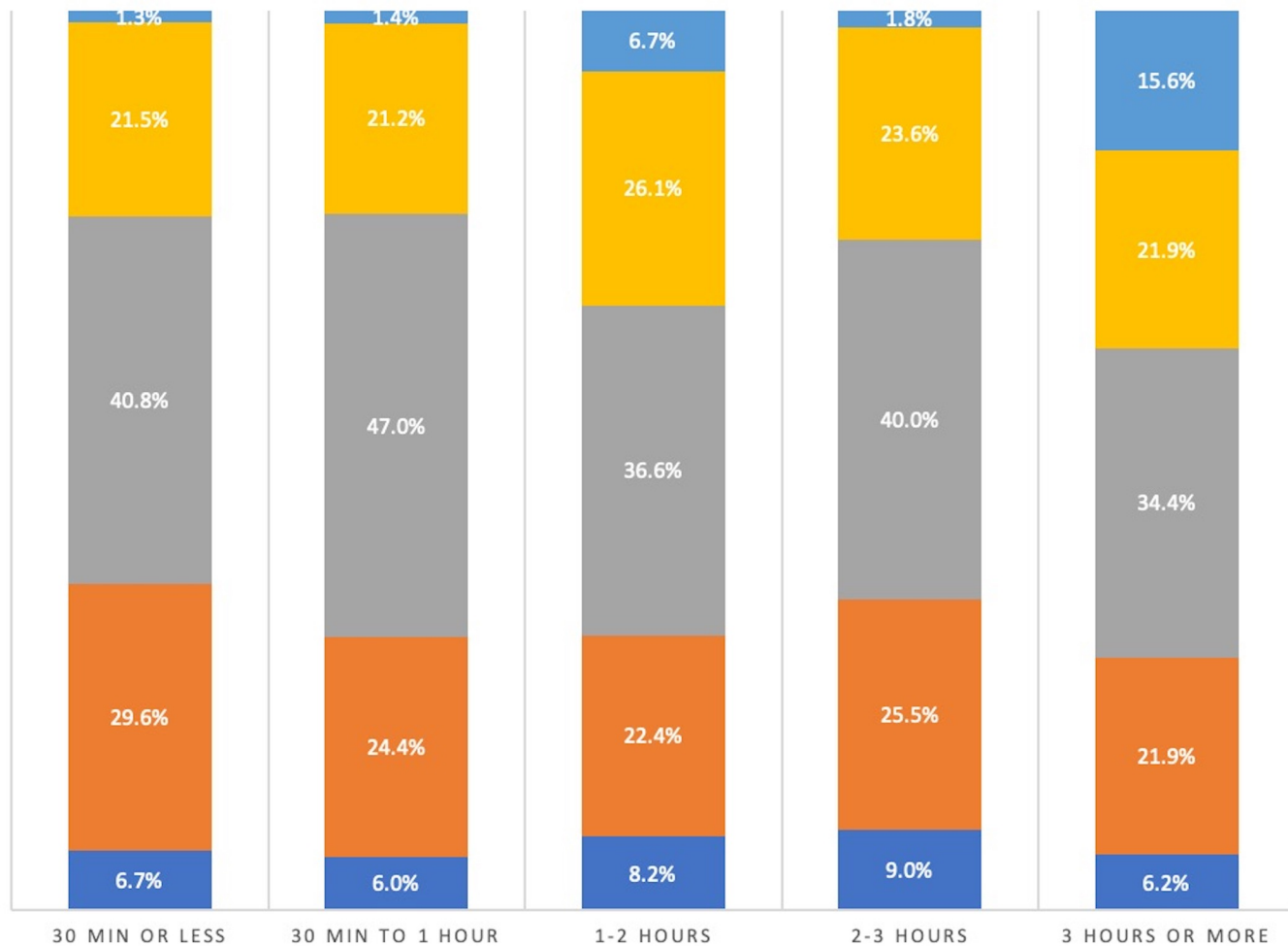


Percentage of Participants



a.

Percentage of Participants



Time to reach a dermatologist

Frequency of Referral - Canine

- Never
- Rarely
- Sometimes
- Often
- Always

b.

Percentage of Participants

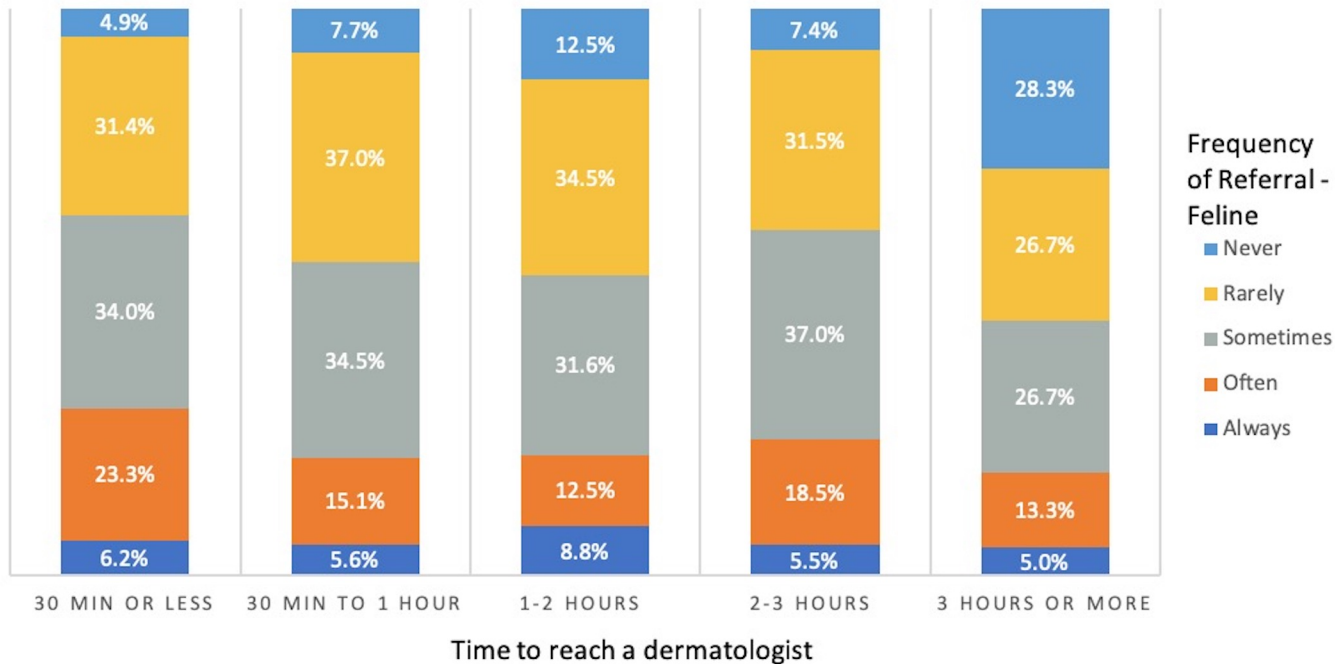


Table S1. Initial communication following an appointment

	Same day	Next day	Within three days	Within a week	Before the dog's next scheduled appointment	I don't have a preference	Total
How soon after the referral appointment do you prefer to have initial (not final) communication about the case from the veterinary dermatologist?	19 (2.7%)	85 (12.1%)	261 (37.1%)	291 (41.4%)	28 (4.0%)	19 (2.7%)	703

Table S2. Client compliance with referral

	All	Most	Some	Few	None	Total
What proportion of clients with atopic dogs comply with your recommendation of referral to a veterinary dermatologist?	5 (0.64%)	63 (8.1%)	136 (17.4%)	524 (67.2%)	52 (6.7%)	780
What proportion of clients with atopic cats comply with your recommendation of referral to a veterinary dermatologist?	3 (0.41%)	44 (6.1%)	64 (8.8%)	422 (58.0%)	194 (26.7%)	727

Table S3. Recurrent pyoderma

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Pets with atopic dermatitis typically need to demonstrate recurring infections or develop a meticillin-resistant <i>Staphylococcus</i> infection before me referring the patient to a veterinary	14 (1.8%)	72 (9.2%)	124 (15.8%)	356 (45.4%)	218 (27.8%)	784

dermatologist. Do you agree with this statement?						
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Table S4. When a client expresses interest in dermatological referral for their atopic pet, I:

	Always	Often	Sometimes	Rarely	Never	Total
Suggest my usual/favourite dermatology specialist and provide contact information for the client to arrange an appointment	423 (60.3%)	175 (25.0%)	60 (8.6%)	19 (2.7%)	24 (3.4%)	701
Have my office contact the specialist dermatology office to determine appointment availability and schedule the appointment for the client	66 (9.3%)	89 (12.6%)	146 (20.7%)	173 (24.5%)	232 (32.9%)	706

Table S5. Client travel time to reach a dermatologist

	≤30 min	30 min to 1 h	1–2 h	2–3 h	≥3 h	Total
To reach a veterinary dermatologist, my clients must travel	231 (29.8%)	286 (36.9%)	138 (17.8%)	55 (7.1%)	65 (8.4%)	775