

The efficacy of cetirizine hydrochloride on the pruritus of cats with atopic dermatitis: a randomized, double-blind, placebo-controlled, crossover study

Kerstin Wildermuth*,†, Sonja Zabel‡ and Rod A. W. Rosychuk*

*Department of Clinical Sciences, Colorado State University College of Veterinary Medicine and Biomedical Sciences, 300 West Drake, Fort Collins, CO 80523, USA

†Tierdermatologie Dr. Wildermuth, Borsigstraße 7a, 65205 Wiesbaden, Germany

‡Department of Small Animal Medicine and Surgery, University of Georgia College of Veterinary Medicine, 501 DW Brooks Drive, Athens, GA 30602, USA

Correspondence: Kerstin Wildermuth, Tierdermatologie Dr. Wildermuth, Borsigstraße 7a, 65205 Wiesbaden, Germany. E-mail: kerstinw@tierdermatologie-wildermuth.de

Background – Various antihistamines have been used in the management of feline atopic dermatitis, with variable reported benefit. To date, there have been no randomized, double-blind, placebo-controlled, crossover clinical trials on the use of this drug class in cats.

Hypothesis/Objectives – To evaluate the clinical efficacy of cetirizine hydrochloride for the control of pruritus and dermatitis in cats diagnosed with atopic dermatitis.

Methods – In this randomized, double-blind, placebo-controlled crossover clinical trial, 21 client-owned cats diagnosed with mild to moderate nonseasonal atopic dermatitis were randomly assigned to two groups. Cats in each group received either 1 mg/kg cetirizine hydrochloride or placebo once daily per os for 28 days followed by a 14 day wash-out period. Treatments were then crossed over, and cats received placebo or cetirizine hydrochloride for another 28 days. Owners marked a pruritus severity scale before inclusion in the study and weekly throughout the entire study period. Lesions were scored by the clinician using a Canine Atopic Dermatitis Extent and Severity Index (CADESI)-03 modified for the cat before enrolment and at day 28 of each treatment.

Results – Nineteen cats completed the study. There were no statistically significant differences between treatment with cetirizine hydrochloride and placebo for modified CADESI-03 or pruritus scores.

Conclusion and clinical importance – This study suggests that cetirizine hydrochloride cannot be recommended for the management of feline atopic dermatitis.

Introduction

Atopic dermatitis (AD) is a common skin disorder in cats, with pruritus being one of the most characteristic signs.¹ Glucocorticoids are commonly used for the management of feline AD. Although glucocorticoid therapy is effective, high-dose or long-term therapy may be associated with adverse effects, including diabetes mellitus or skin atrophy.² Ciclosporin has been shown to be effective but is also potentially associated with significant adverse effects and is relatively expensive.³ Allergen-specific immunotherapy is considered to be a safe treatment in cats but may take several months before obvious benefit is noted, is relatively expensive and is usually given by subcutaneous administration.⁴ Essential fatty acids are

also a safe alternative but have not been shown to be effective as a single treatment.⁵ Antihistamines have been used to treat feline AD.^{6–8} Histamine receptors, specifically H₁ receptors, are found on mast cells, basophils, macrophage/dendritic cells, T lymphocytes, neutrophils, eosinophils, blood vessel endothelial cells and airway epithelial and smooth muscle cells.⁹ The H₁ antihistamines stabilize the inactive configuration of H₁ receptors and thus inhibit histamine binding to the receptor and mast cell degranulation.¹⁰ They appear to be well tolerated in cats and are relatively affordable for pet owners.^{6–8,11} There are only a few open clinical trials investigating the efficacy of antihistamines in cats with allergic pruritus. These clinical trials showed an improvement of pruritus in 50% of the cats treated with clemastine, 45% of cats treated with cyproheptadine and 77% of cats treated with chlorpheniramine.^{6–8}

Cetirizine is a second-generation antihistamine and an active metabolite of hydroxyzine. Second-generation antihistamines do not cross the blood–brain barrier and, in humans, are associated with less potential for sedation.¹² A recent pharmacokinetic study in cats has shown that a single dose of cetirizine of approximately 1 mg/kg results in high plasma concentrations and a long half-life, compatible with once daily dosing.¹¹ In a recent open clinical trial,

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41% of cats with allergic dermatitis responded to treatment with cetirizine hydrochloride at a once daily dose of 5 mg per cat.¹³ A study investigating the efficacy of cetirizine in cats with eosinophilic airway inflammation showed this antihistamine not to be effective.¹⁴ To our knowledge, no placebo-controlled studies have been performed using cetirizine in cats with AD.

The objectives of this study were to evaluate the efficacy of cetirizine hydrochloride on the pruritus and dermatitis in cats with AD, using a randomized, double-blind, placebo-controlled, crossover study design.

Materials and methods

This multicentre study involved client-owned feline patients that presented to the Dermatology Service of the Colorado State University Veterinary Teaching Hospital and the Dermatology Service of the University of Georgia Small Animal Veterinary Teaching Hospital.

The study protocol was reviewed and approved by the Colorado State University Animal Care and Use Committee and the Clinical Research Committee of the University of Georgia. Owners signed a consent form before enrolling their cats in the study.

Inclusion criteria

All cats had to be healthy based upon physical examination, excluding signs of AD. Cats were diagnosed as having nonseasonal AD based on history and compatible clinical signs, including pruritus, self-induced alopecia, self-induced alopecia and dermatitis, and facial and/or neck dermatitis. Cats with other cutaneous diseases, including flea-bite hypersensitivity, other ectoparasite infestation, cutaneous adverse food reaction and dermatophytosis, were excluded. Each cat was treated with selamectin (Revolution®; Pfizer Animal Health, Madison, NJ, USA) once every 2 weeks for three treatments. Selamectin treatment was maintained on a monthly basis throughout the study. Cutaneous adverse food reactions were ruled out in each cat by performing an 8 week restricted diet trial using a home-prepared or veterinary prescription novel protein or hydrolysed diet. A fungal culture was performed in each cat to rule out dermatophytosis. Cytological examinations of inflammatory lesions (via impression smear or clear adhesive tape preparation) were performed prior to inclusion in the study to screen for evidence of bacterial pyoderma. All cats with evidence of secondary bacterial pyoderma were treated with at least a 3 week course of an appropriate systemic antibiotic. Resolution of infection was documented by cytological examination. Resolution of infection was required prior to inclusion in the study.

All cats had one or more positive reactions on intradermal testing or *in vitro* serological testing. A positive skin test reaction was defined as a wheal formation graded as >2 on a scale from 0 to 4, with histamine and saline serving as positive (grade 4) and negative (grade 0) controls, respectively. A positive *in vitro* serological reaction was defined according to the laboratory standards given for the test used.

Before inclusion in the study, a Canine Atopic Dermatitis Extent and Severity Index (CADESI)-03 score modified for the feline patient was established for each cat (see Figure 1).³ Owners were required to assess the cat's degree of pruritus using a pruritus severity scale adjusted for the feline patient (see Figure 2).¹⁵ This scale consisted of a 10 cm vertical line positioned alongside descriptors indicating levels of pruritus severity, frequency and behavioural changes. Owners were asked to mark this scale at the initiation of the study. The clinician positioned a ruler along the vertical line, thereby allowing the mark placed by the owner to be measured as a numerical score (1 cm representing a score of 1). Only cats with mild-to-moderate signs of AD were enrolled in the study. Each cat had to show a modified CADESI-03 score between 25 and 119 and a pruritus score between 3 and 6.9.^{15,16}

Medication withdrawal times required prior to inclusion in the study included the following: 2 weeks for antihistamines, essential

fatty acid supplementations and for topical glucocorticoids; 4 weeks for oral glucocorticoids; 8 weeks for long-acting injectable glucocorticoids; and 4 weeks for oral ciclosporin.

All cats were required to remain on their regular diet throughout the study. Cats receiving allergen-specific immunotherapy were included in the study if they had been on this therapy for at least 1 year and had not changed the administration protocol within 1 month prior to inclusion in the study. In these patients, immunotherapy was maintained throughout the study.

Exclusion criteria

Cats were excluded from the study if they had a pre-existing systemic disease and/or if they had severe signs of atopic dermatitis. A cat was defined as having severe signs of atopic dermatitis if the owner and/or the clinician evaluated the cat as having unacceptable discomfort and/or if the modified CADESI-03 score was 120 or more and/or the pruritus score was 7 or more.^{15,16}

Experimental design

Cats included in the study were randomly assigned to two groups by a staff member who was not involved in the evaluation of the animals. Beginning on day 0, all cats received either cetirizine hydrochloride (CTZ; Zyrtec®; McNeil-PPC, Skillman, NJ, USA) at a dosage of 1 mg/kg or a placebo (PBO), given once daily per os for 28 days. This treatment was followed by a 14 day wash-out period.^{14,17,18} After this wash-out period, the treatment was crossed over and cats received either PBO or CTZ per os for another 28 days. All investigators and owners were unaware of the type of treatment given during the two treatment periods. The PBO and CTZ were administered in capsules that were identical in appearance.

Owners were asked to evaluate the intensity of the animal's pruritus once weekly using the pruritus severity scale (Figure 2).¹⁵

Each cat was re-examined by the investigators at the beginning and end of the first treatment period as well as at the beginning and end of the second treatment period. At each examination, the investigator assessed the presence and severity of erythema, excoriations, thickening and self-induced alopecia from 40 different body sites using the modified CADESI-03. The total score at days 0 and 28 of each treatment period were compared in order to evaluate the percentage of clinical improvement or deterioration. A >50% reduction from baseline in modified CADESI-03 or pruritus score was considered significant (good to excellent response).¹⁹

Statistical analysis

A power calculation was performed, suggesting that 24 cats be included in the study, based on the hypothesis that 30% would improve. Owing to the time constraints of the study, only 21 cats were included. Data on all enrolled cats were included in the analysis, whether the cats completed the study or not (intention-to-treat analysis). The data were assessed for normality by using the Shapiro-Wilk test and visual assessment of the normal quantile plot for the two outcomes (pruritus score and modified CADESI-03). For each outcome, if the assumption of normality was met, the effect of CTZ treatment compared with placebo was evaluated using mixed-effects linear regression, with cat as a random effect to account for repeated measures on cats, and treatment (CTZ versus PBO) as a fixed effect. Treatment sequence (PBO first versus CTZ first) was added as a fixed effect to test the hypothesis that treatment sequence affected outcome. If the assumption of normality was not met, outcomes were dichotomized (moderately to severely pruritic versus mildly pruritic or nonpruritic, with a pruritus score of ≤4 being mild, and moderate to severe dermatitis versus mild to nonexisting dermatitis, with a modified CADESI score of ≤59 being mild). Analyses were performed at each time separately. Dichotomized data were then analysed using mixed-effects logistic regression, with cat as a random effect, and treatment and treatment sequence and treatment sequence as fixed effects as described for linear regression. All hypothesis tests were two sided. All analyses were performed using SAS version 9.2 (Cary, NC, USA).

			Erythema	Thickening	Excoriations	Self-induced Alopecia	TOTAL
Face	Preauricular						
	Periocular						
	Perilabial						
	Muzzle						
	Chin						
Head	Dorsal						
Ear Pinna	Left	Convex					
		Concave					
	Right	Convex					
		Concave					
Neck	Dorsal						
	Ventral						
	Lateral	Left					
		Right					
Axilla	Left						
	Right						
Sternum							
Thorax	Dorsal						
	Lateral	Left					
		Right					
Inguinal	Left						
	Right						
Abdomen							
Lumbar	Dorsal						
Flank	Left						
	Right						
Front Limb	Left	Medial					
		Lateral					
		Antebrachial Flexure					
		Carpal Flexure					
	Right	Medial					
		Lateral					
		Antebrachial Flexure					
		Carpal Flexure					
Front Foot	Left	Metacarpal Flexure					
		Dorsal Metacarpal					
		Palmar					
		Dorsal Interdigital					
	Right	Metacarpal Flexure					
		Dorsal Metacarpal					
		Palmar					
		Dorsal Interdigital					
Hind Limb	Left	Medial					
		Lateral					
		Stifle Flexure					
		Tarsal Flexure					
	Right	Medial					
		Lateral					
		Stifle Flexure					
		Tarsal Flexure					
Hind Foot	Left	Metatarsal Flexure					
		Dorsal Metatarsal					
		Plantar					
		Dorsal Interdigital					
	Right	Metatarsal Flexure					
		Dorsal Metatarsal					
		Plantar					
		Dorsal Interdigital					
Perianal							
Perigenital							
Tail	Ventral						
	Dorsal						
none = 0 mild = 1 moderate = 2 - 3 severe = 4 - 5					TOTAL Score (1240 max.)		

Figure 1. CADESI-03 modified for the feline patient to evaluate severity of lesions.

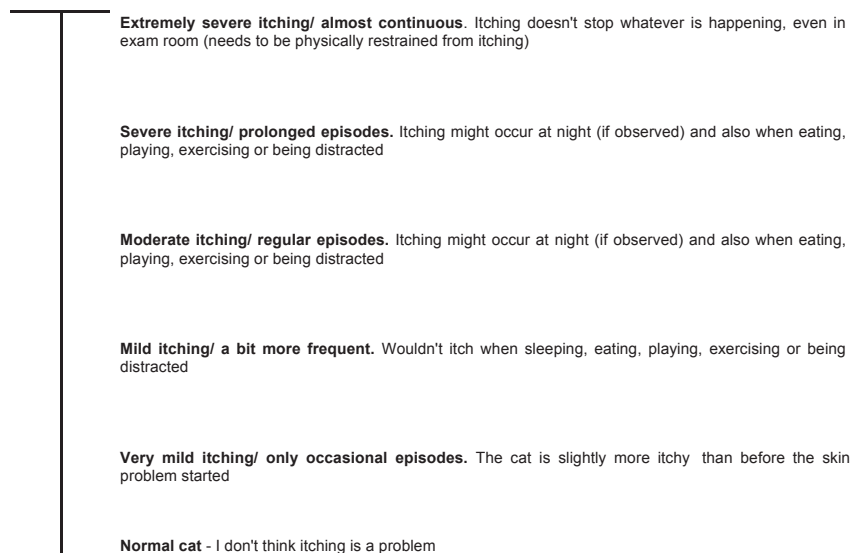


Figure 2. Scale used by owners to evaluate level of pruritus.

Results

Cats

Twenty-one cats (10 male castrated and 11 female spayed) met the inclusion criteria and were enrolled in the study. They showed the following clinical signs in addition to pruritus: self-induced alopecia (10 of 21 cats), self-induced alopecia with dermatitis (7 of 21 cats), facial dermatitis (2 of 21 cats) and self-induced alopecia with facial dermatitis (2 of 21 cats). Nineteen cats completed the study. One cat was excluded after day 28 of the first treatment period due to severity of clinical signs. One cat was lost to follow-up after day 28 of the first treatment period for unknown reasons. The owners of this cat did not return the forms with the pruritus scales for any of the visits and therefore only the modified CADESI-03 data on days 0 and 28 of the first treatment period were available for analysis.

The age range of the study cats was 2–16 years (mean 7.9 years, median 7 years). The cats weighed between 3.1 and 6.6 kg (mean 5.8 kg, median 5.5 kg).

Modified CADESI-03 and pruritus scores

Upon inclusion in the study, the modified CADESI-03 scores ranged from 26 to 112 (mean 45.5). Two of the 19 cats (10.5%) showed a modified CADESI-03 score improvement of >50% at day 28 of treatment with CTZ. In one cat (5.3%), the modified CADESI score worsened by >50% at day 28 of treatment with CTZ. Four of 19 placebo-treated cats (21%) showed improvement of >50% at day 28. In one placebo-treated cat (5.3%), the modified CADESI-03 score worsened by >50% at day 28. There were no statistical differences in modified CADESI-03 scores between the CTZ- or PBO-treated cats when data were either evaluated continuously or dichotomized.

Pruritus scores at the beginning of the study ranged from 4.0 to 7.5 (mean 5.1). In two of 19 CTZ-treated cats (10.5%), pruritus scores improved by >50% at day 28. None of the CTZ-treated cats had an increase in pruritus score of >50%.

One PBO-treated cat (5.2%) showed an improvement of >50% at day 28. One PBO-treated cat (5.2%) showed an increase of pruritus score by >50% at day 28; this cat was one of the patients that showed a > 50% improvement in pruritus score and also a > 50% improvement in the modified CADESI-03 score while being treated with CTZ.

There were no significant statistical differences between the CTZ- and PBO-treated cat pruritus scores when the data were considered continuously or dichotomized. Changes in modified CADESI-03 and pruritus scores over time are shown in Figures 3 and 4.

Adverse events

None of the cats showed adverse effects to CTZ during the study period.

Discussion

In this study, CTZ-treated cats showed a >50% improvement of modified CADESI-03 scores and pruritus scores

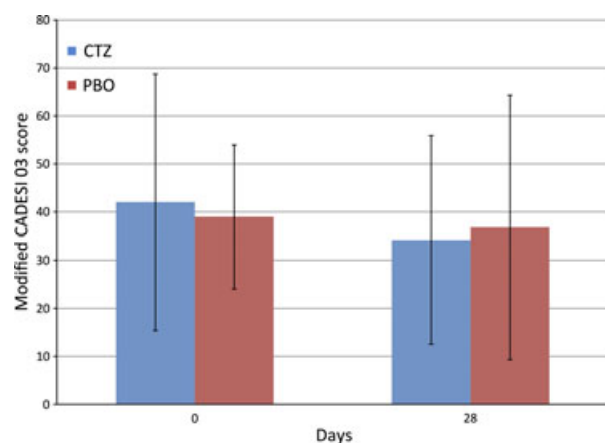


Figure 3. Modified CADESI-03 scores before and after treatment with cetirizine hydrochloride (CTZ; $n = 19$) and placebo (PBO; $n = 21$). Values are means $\pm$ SD.

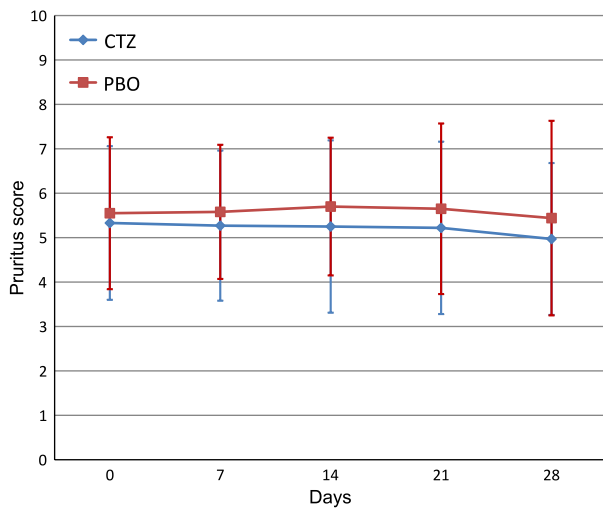


Figure 4. Change of pruritus scores over time during treatment with cetirizine hydrochloride (CTZ; $n = 19$) and placebo (PBO; $n = 20$). Values are means $\pm$ SD.

in two of 19 (10.5%) and two of 19 (10.5%) cats, respectively. One of these cats showed improvement of both scores. There were no significant statistical differences in clinical responses between CTZ and PBO treatments.

These results contradict those of a recently published open clinical trial wherein 41% of cats with allergic dermatitis showed an improvement in pruritus with cetirizine therapy.¹³ In that study, eight of 14 (57%) atopic cats and five of 16 (31%) cats with allergic dermatitis of undetermined origin showed some degree of improvement. Improvement was judged as nonexistent, mild (<25% reduction), moderate (25–50% reduction) or marked (>50% reduction). Using our more stringent criteria for improvement (>50% improvement), only three of 14 (21%) of the better defined atopic cats in that study showed significant improvement. This was, in fact, relatively similar to our findings. We chose to define our improvement cut-off as a >50% reduction from baseline of pruritus and lesional scores because the degree of improvement (good to excellent) is believed to represent a clinically relevant threshold above which both clinician and owners are satisfied with treatment effects. This cut-off has been used in an evidence-based review of pharmacotherapy of canine atopic dermatitis.¹⁹ By reporting lesser degrees of improvement, the open cetirizine trial may have inflated the degree of positive clinical response; additionally, the nonrandomized, nonblind and nonplacebo-controlled nature of the study may have introduced a significant amount of owner bias in the evaluation of their cats' pruritus.¹³ The potential for owner bias in scoring of pruritus was illustrated by a recent study evaluating the efficacy of ciclosporin in cats with hypersensitivity dermatitis, in which 23% of placebo-treated cats had >50% improvement of owner-assessed pruritus scores.²⁰

Our study is the first randomized, double-blind, placebo-controlled crossover study evaluating the effect of an H_1 receptor antagonist on the pruritus in atopic cats. To our knowledge, this is also the first study to assess the efficacy of an H_1 receptor antagonist on the severity of dermatitis in cats. An explanation for the lack of a

significant degree of response to CTZ therapy in these cats is unclear. It is noted that, at this time, the criteria for the diagnosis of feline AD are controversial. The heterogeneous clinical presentation and histological features of this disease in cats differ from AD in both humans and dogs.^{21,22} The importance of IgE in the pathogenesis of the disease is also unclear. For these reasons, some have suggested that the term 'atopic dermatitis' should not be used for this disease until it has been better defined. It has been suggested that affected cats instead be diagnosed with 'hypersensitivity dermatitis' or 'nonflea, non-food hypersensitivity'.^{23,24} A lack of response to CTZ therapy may suggest that mechanisms other than H_1 receptor binding are involved in the development of pruritus and dermatitis in feline AD. There may be various subsets within this disease designation whose pathogenesis may differ, as may the potential benefits of CTZ therapy.

The poor clinical response of our patient group to CTZ may have also been due to factors such as poor owner compliance with prior restricted diet trials or administration of medication. Eight week restricted diet trials are difficult to perform, and some dietary indiscretion could have occurred. This may have resulted in the misdiagnosis of some food-sensitive individuals. The efficacy of antihistamine therapy in canine or feline adverse food reaction is unknown. It is also possible that a lack of owner compliance with medicating may have reduced the incidence of significant improvement. Although all owners reported compliance with treatment protocols, cats can be difficult to medicate and some may not have received all their medications as intended. An owner medication diary and unused capsule counts at each recheck evaluation time may have been beneficial in better assessing compliance.

Other factors that may have affected our case recruitment and assessment of response included the pruritus and modified CADESI-03 scores used. The pruritus scale used in our study has been validated only for dogs, but a previous study has shown this scale also to be useful when assessing feline pruritus.²⁵ The CADESI-03 is a reliable tool in assessing the severity of dermatitis in canine AD, with good intra- and interobserver reliability.²⁶ Another prior study demonstrated that the CADESI could be modified for the feline patient.³ Cut-off scores used to determine case inclusion criteria (mild-to-moderate signs of AD), exclusion criteria (unacceptable discomfort) and significant improvement (>50% reduction from baseline) were established for the dog.^{15,16,19} No such criteria have been established for the cat. Further studies are necessary to validate scoring methods for feline pruritus and dermatitis.

None of the cats in our study showed adverse reactions to CTZ. This is consistent with the findings in the previously mentioned study and a recent pharmacological study.^{11,13}

In conclusion, the results of the present study suggest that CTZ is, at best, minimally effective in the treatment of feline AD. Based on evidence-based criteria that are available for canine AD, CTZ cannot be recommended for the treatment of feline AD.¹⁹ Future studies are warranted, looking at larger numbers of atopic cats with each of the many clinical manifestations of this disease being

well represented. The value of CTZ as an adjunctive therapy with possible steroid-sparing effects should also be evaluated.

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References

- Marsella R. Hypersensitivity disorders In: Miller WH, Griffin CE, Campbell KL, eds. *Muller and Kirk's Small Animal Dermatology*. 7th edition. Philadelphia, PA:W.B. Saunders Co., 2013; 363–431.
- Lowe AD, Campbell KL, Graves T. Glucocorticoids in the cat. *Vet Dermatol* 2008; 19: 340–347.
- Wisselink MA, Willemse T. The efficacy of cyclosporine A in cats with presumed atopic dermatitis: a double blind, randomised prednisolone-controlled study. *Vet J* 2009; 180: 55–59.
- Trimmer AM, Griffin CE, Rosenkrantz WS. Feline immunotherapy. *Clin Tech Small Anim Pract* 2006; 21: 157–161.
- Logas DB, Kunkle GA. Double-blinded study examining the effects of evening primrose oil on feline pruritic dermatitis. *Vet Dermatol* 1993; 4: 181–184.
- Miller WH Jr, Scott DW. Efficacy of chlorpheniramine maleate for management of pruritus in cats. *J Am Vet Med Assoc* 1990; 197: 67–70.
- Miller WH Jr, Scott DW. Clemastine fumarate as an antipruritic agent in pruritic cats: results of an open clinical trial. *Can Vet J* 1994; 35: 502–504.
- Scott DW, Rothstein E, Beningo KE *et al.* Observations on the use of cyproheptadine hydrochloride as an antipruritic agent in allergic cats. *Can Vet J* 1998; 39: 634–637.
- Thurmond RL, Gelfand EW, Dunford PJ. The role of histamine H₁ and H₄ receptors in allergic inflammation: the search for new antihistamines. *Nat Rev Drug Discov* 2008; 7: 41–53.
- Camelo-Nunes IC. New antihistamines: a critical view. *J Pediatr (Rio J)* 2006; 82: S173–S180.
- Papich MG, Schooley EK, Reinero CR. Pharmacokinetics of cetirizine in healthy cats. *Am J Vet Res* 2008; 69: 670–674.
- Golightly LK, Greos LS. Second-generation antihistamines: actions and efficacy in the management of allergic disorders. *Drugs* 2005; 65: 341–384.
- Griffin JS, Scott DW, Miller WH Jr *et al.* An open clinical trial on the efficacy of cetirizine hydrochloride in the management of allergic pruritus in cats. *Can Vet J* 2012; 53: 47–50.
- Schooley EK, McGee Turner JB, Jiji RD *et al.* Effects of cyproheptadine and cetirizine on eosinophilic airway inflammation in cats with experimentally induced asthma. *Am J Vet Res* 2007; 68: 1265–1271.
- Rybníček J, Lau-Gillard PJ, Harvey R *et al.* Further validation of a pruritus severity scale for use in dogs. *Vet Dermatol* 2009; 20: 115–122.
- Olivry T, Mueller R, Nuttall T *et al.* Determination of CADESI-03 thresholds for increasing severity levels of canine atopic dermatitis. *Vet Dermatol* 2008; 19: 115–119.
- Purohit A, Melac M, Pauli G *et al.* Comparative activity of cetirizine and mizolastine on histamine-induced skin wheal and flare responses at 24 h. *Br J Clin Pharmacol* 2002; 53: 250–254.
- Barbet JL, Halliwell RE. Duration of inhibition of immediate skin test reactivity by hydroxyzine hydrochloride in dogs. *J Am Vet Med Assoc* 1989; 194: 1565–1569.
- Olivry T, Mueller RS, International Task Force on Canine Atopic Dermatitis. Evidence-based veterinary dermatology: a systematic review of the pharmacotherapy of canine atopic dermatitis. *Vet Dermatol* 2003; 14: 121–146.
- King S, Favrot C, Messinger L *et al.* A randomized double-blinded placebo-controlled study to evaluate an effective ciclosporin dose for the treatment of feline hypersensitivity dermatitis. *Vet Dermatol* 2012; 23: 440–484.
- Taglinger K, Day MJ, Foster AP. Characterization of inflammatory cell infiltration in feline allergic skin disease. *J Comp Pathol* 2007; 137: 211–223.
- Marsella R, Girolomoni G. Canine models of atopic dermatitis: a useful tool with untapped potential. *J Invest Dermatol* 2009; 129: 2351–2357.
- Favrot C, Steffan J, Seewald W *et al.* Establishment of diagnostic criteria for feline nonflea-induced hypersensitivity dermatitis. *Vet Dermatol* 2012; 23: 45–50.
- Hobi S, Linek M, Marignac G *et al.* Clinical characteristics and causes of pruritus in cats: a multicentre study on feline hypersensitivity-associated dermatoses. *Vet Dermatol* 2011; 22: 406–413.
- Schmidt V, Buckley LM, McEwan NA *et al.* Efficacy of a 0.0584% hydrocortisone aceponate spray in presumed feline allergic dermatitis: an open label pilot study. *Vet Dermatol* 2012; 23: 11–16.
- Olivry T, Marsella R, Iwasaki T *et al.* Validation of CADESI-03, a severity scale for clinical trials enrolling dogs with atopic dermatitis. *Vet Dermatol* 2007; 18: 78–86.

Résumé

Contexte – Différents antihistaminiques ont été utilisés pour gérer la dermatite atopique féline, avec des effets rapportés variables. A ce jour, aucune étude clinique croisée, randomisée, en double aveugle, contre placebo n'existe sur l'utilisation de cette classe de médicament chez le chat.

Hypothèses/Objectifs – Évaluer l'efficacité clinique de la cétirizine dichlorhydrate pour le contrôle du prurit et de la dermatite chez les chats atteints de dermatite atopique.

Méthodes – Dans cette étude croisée contre placebo, en double aveugle, randomisée, 21 chats de propriétaires atteints de dermatite atopique non-saisonnière faible à modérée ont été répartis au hasard en deux groupes. Les chats de chaque groupe ont reçu, soit 1 mg/kg de cétirizine dichlorhydrate, soit le placebo une fois par jour per os pendant 28 jours, suivi par une période de sevrage de 14 jours. Les traitements ont ensuite été intervertis, et les chats ont reçu le placebo ou la cétirizine pendant 28 jours supplémentaires. Les propriétaires notaient le prurit sur une échelle avant l'inclusion dans l'étude et chaque semaine pendant toute l'étude. Les lésions étaient évaluées par le clinicien par un CADESI-03 (Canine Atopic Dermatitis Extent and Severity Index) modifié pour le chat après enrôlement et à jour 28 de chaque traitement.

Résultats – Dix neuf chats ont complétés l'étude. Il n'y avait aucune différence significative entre les traitements avec la cétirizine et le placebo concernant le CADESI-03 ou les scores de prurit.

Conclusion et importance clinique – Cette étude suggère que la cétirizine ne peut pas être recommandée pour la gestion de la dermatite atopique féline.

Resumen

Introducción – varios antihistamínicos se han utilizado en el manejo de la dermatitis atópica felina, con efecto beneficioso variable. Hasta hoy no se han hecho estudios al azar, doble-ciego, controlados con placebo, y cruzados acerca del uso de estos fármacos en gatos.

Hipótesis/Objetivos – evaluar la eficacia clínica de hidrocloruro de cetirizina para el control del prurito y de la dermatitis en gatos diagnosticados con dermatitis atópica.

Métodos – en este estudio al azar, doble-ciego, controlado con placebo, y cruzado se incluyeron 21 gatos de propietarios particulares diagnosticados con dermatitis atópica estacional de leve a moderada. Los animales se asignaron al azar en dos grupos. Los gatos en cada grupo recibieron o bien 1 mg/kg de hidrocloruro de cetirizina o placebo una vez al día por vía oral durante 28 días, seguido de un periodo de lavado de 14 días. Entonces se cruzaron los tratamientos, y los gatos recibieron placebo o hidrocloruro de cetirizina durante otros 28 días. Los propietarios marcaron una escala de prurito antes de empezar el estudio y semanalmente durante el periodo de estudio. Las lesiones se evaluaron por el clínico utilizando un índice de severidad y extensión de dermatitis atópica canina (CADESI)-03 modificado para el gato antes de la inclusión en el estudio y al día 28 de cada tratamiento.

Resultados – diecinueve gatos completaron el estudio. No hubo diferencias estadísticas significativas entre el tratamiento con hidrocloruro de cetirizina y el placebo para el CADESI-03 modificado o los valores de prurito.

Conclusiones e importancia clínica – Este estudio sugiere que el hidrocloruro de cetirizina no debe ser recomendado en el tratamiento de la dermatitis atópica felina.

Zusammenfassung

Hintergrund – Zahlreiche Antihistamine sind bei der Behandlung der atopischen Dermatitis der Katze verwendet worden, wobei die Wirksamkeit unterschiedlich beschrieben wurde. Bis zum heutigen Tag gibt es keine klinische randomisierte, doppel-blinde, Placebo-kontrollierte, Cross-over Studie über die Verwendung dieser Wirkstoffklasse bei Katzen.

Hypothese/Ziele – Eine Evaluierung der klinischen Wirksamkeit von Cetirizinhydrochlorid zur Kontrolle von Juckreiz und Dermatitis bei Katzen, die mit einer atopischen Dermatitis diagnostiziert worden waren.

Methoden – In dieser klinischen randomisierten, doppelblinden, Placebo-kontrollierten Cross-over Studie wurden 21 Katzen in Privatbesitz, die mit einer milden bis moderaten nicht-saisonalen atopischen Dermatitis diagnostiziert worden waren, zufällig in zwei Gruppen eingeteilt. Die Katzen in jeder Gruppe erhielten entweder 28 Tage lang 1 mg/kg Cetirizinhydrochlorid oder Placebo einmal täglich per os, gefolgt von einer 14-tägigen Wash-out Periode. Danach wurde das Behandlungsschema gewechselt und die Katzen erhielten Placebo oder Cetirizinhydrochlorid für weitere 28 Tage. Die BesitzerInnen füllten eine Juckreizskala vor Beginn der Studie aus und danach machten sie wöchentlich während der gesamten Studiendauer einen Eintrag. Die Veränderungen wurden von den Klinikern mittels Canine Atopic Dermatitis Extent and Severity Index (CADESI)-03, der für die Katze modifiziert worden war, am Beginn der Studie und am Tag 28 der jeweiligen Behandlung beurteilt.

Ergebnisse – Neunzehn Katzen beendeten die Studie. Es bestand kein signifikanter Unterschied bei den modifizierten CADESI-03 oder den Juckreizwerten zwischen den Behandlungsschematas mit Cetirizinhydrochlorid und Placebo.

Schlußfolgerungen und klinische Bedeutung – Diese Studie weist darauf hin, dass Cetirizinhydrochlorid nicht für die Behandlung der atopischen Dermatitis der Katze empfohlen werden kann.

要約

背景 – 様々な抗ヒスタミン剤が異なる報告での利点によってネコのアトピー性皮膚炎の維持に使用されている。今まで、ネコにおけるこれらの薬剤類の使用に関するランダム化、二重盲検、プラセボ対照、クロスオーバー臨床試験は行われていなかった。

仮説/目的 – アトピー性皮膚炎と診断されたネコのそう痒および皮膚炎のコントロールにおけるセチリジン塩酸塩の臨床的な効果を評価すること。

方法 – このランダム化、二重盲検、プラセボ対照クロスオーバー臨床試験においては、軽度から中等度の非季節性アトピー性皮膚炎と診断された21頭の飼い猫を無作為に2つの群に割り当てた。それぞれの群のネコは1mg/kgのセチリジン塩酸塩またはプラセボのいずれかを28日間1日1回経口投与し、続いて14日間のウォッシュアウト期間とした。治療はその後、クロスオーバーし、ネコはプラセボもしくはセチリジン塩酸塩をさらに28日間投与された。飼い主は掻痒重度スケールを試験組み入れ前、および試験中毎週記録した。病変は臨床医によって組み入れ前およびそれぞれの治療の28日目にCanine Atopic Dermatitis Extent and Severity Index (CADESI)-03をネコに修正したもので記録した。

結果 – 19頭のネコが試験を完了した。セチリジン塩酸塩で治療した群とプラセボ群の間で修正版CADESI-03あるいは掻痒スコアには統計学的な有意差は認められなかった。

結論および臨床的な重要性 – この研究により、セチリジン塩酸塩はネコのアトピー性皮膚炎の維持には推奨されないことが示唆された。

摘要

背景 - 用于管理猫异位性皮炎的多种抗组胺药,其效果报道各不相同。至今为止,还没有猫使用此类药物的随机法、双盲法、安慰剂对照、交叉临床试验。

假设/目的 - 评估盐酸西替利嗪对异位性皮炎猫的瘙痒和皮炎的临床效果。

方法 - 将诊断为轻度或中度非季节性异位性皮炎的21只猫随机分为两组,进行随机、双盲、安慰剂对照临床试验。每组猫接受1 mg/kg 盐酸西替利嗪或安慰剂口服,每日一次,持续28天,之后接受14天的停药期。停药期后的另一个28天让猫再接受安慰剂或盐酸西替利嗪治疗。主人记录研究前和整个研究期间每周的瘙痒严重程度。在治疗前和每治疗28天时使用临床改良的犬异位性皮炎程度和严重指数(CADESI)-03,为猫进行病变评分。

结果 - 19只猫完成研究。盐酸西替利嗪治疗组和安慰剂组在改良的CADESI-03或瘙痒评分没有统计学显著差异。

结论和临床价值 - 本研究表明盐酸西替利嗪不能作为管理猫异位性皮炎的推荐用药。