How to correctly diagnose canine and feline allergic dermatitis

Canine Atopic Dermatitis (CAD)

Pathogenesis
Based on recent advances in veterinary medicine, it appears that CAD is more of a syndrome than a single disease entity. The pathogenesis of CAD is multi-factorial and not well understood. Factors that seem to cause or contribute to the development of CAD include a genetic predisposition, skin barrier abnormalities, as well as environmental factors, such as exposure to allergens and the life-style of the individual pet.

Some of the breeds thought to have a genetic breed predisposition toward CAD include the West Highland white terrier, Labrador retriever, golden retriever, boxer and French bulldog. Regional popularity of certain dog breeds has an impact on these data and must thus be taken into account when interpreting this information.

Common triggers for CAD include the following allergens: house dust mites (Dermatophagoides farinae, Dermatophagoides pteronyssinus), storage mites (Acarus siro, Tyrophagus putrescentiae) and epidermal allergens (human, horse, cat, dog). Additional allergens include regional tree and grass pollens. Furthermore, dietary allergens are capable of triggering food-induced CAD symptoms in selected individuals.

Role of IgE
Despite extensive research, the role of IgE is not yet completely understood. Evidence suggests that total IgE is a poor indicator for disease. Thus, allergen-specific IgE are to be evaluated. However, allergen-specific IgE testing must not be viewed as a screening test for skin allergies because healthy dogs may exhibit allergen-specific IgE; conversely, atopic dogs may test negative for allergen-specific IgE. Atopic dermatitis remains to be a clinical diagnosis. However, testing for IgE-antibodies is indicated in selected patients; e.g.: those patients receiving Allergen Specific Immunotherapy or dogs entering into selected clinical trials.
Definition of Canine Atopic Dermatitis (CAD)

Definition of Canine Atopic Dermatitis (CAD) according to the ACVD Task Force on Canine Atopic Dermatitis, 2006:

“A genetically-predisposed inflammatory and pruritic allergic skin disease with characteristic clinical features associated with IgE antibodies, most commonly directed against environmental allergens.”

Prevalence of CAD

Canine Atopic Dermatitis is the 2nd most common cause of pruritus in dogs, in the US. Canine Atopic Dermatitis is suspected to affect approximately 10% of the general dog population in the US. A recent study that surveyed 52 private practices in the US, total of 31,484 dogs, concluded that 8.7% of dogs had atopic/allergic dermatitis.

Clinical Signs and Criteria

Most dogs exhibit symptoms of CAD before 3 years of age. These symptoms may be seasonal or non-seasonal. Some dogs may initially display seasonal symptoms that over time become non-seasonal.

One of the key features of CAD is pruritus. Typically, this pruritus is responsive to anti-inflammatory dosages of corticosteroids.

The body areas most commonly affected by CAD are the axillary regions, the ventrum, medial and distal extremities, as well as the face and ears. Skin lesions that can be observed in the areas include erythema, papules, urticaria, alopecia, lichenification and hyperpigmentation.

Concurrent bacterial and fungal skin infections are common and have to be identified and treated accordingly.

Aside from the dermatological signs, dogs with CAD may suffer concurrently from rhinitis and/or conjunctivitis.

In 2010, Claude Favrot et al. published the most current, accepted diagnostic clinical criteria for canine atopic dermatitis. The clinician may choose between two sets of criteria.
How Do I Correctly Diagnose Canine Atopic Dermatitis?

To correctly diagnose a patient with atopic dermatitis one must evaluate following criteria:

1. History
2. Clinical signs
3. Results of a thorough and complete physical, dermatological and otoscopic examination
4. Exclusion of other causes for the patient’s symptoms
5. If indicated, one may complete the diagnostic work-up with Intradermal Testing and/or serum allergy testing

Differential diagnoses for canine atopic dermatitis:

- Other allergic dermatitis: cutaneous adverse food reaction, flea allergy dermatitis, contact allergic dermatitis
- Parasites: fleas, sarcoptic mange, demodectic mange, Cheyletiellosis, Otocariosis
- Bacterial and fungal skin infections

Allergy Testing

Three main reasons for allergy testing are:

1. Identification and subsequent avoidance of the allergens that are triggering the patient’s atopic dermatitis
2. Research
3. Formulation of Allergen Specific Immunotherapy (ASIT)
Ten questions to ask prior to allergy testing any patient:

1. Is the patient truly atopic?
   Remember: CAD is a clinical diagnosis.
2. Is the owner willing and able to perform ASIT?
3. Is the patient healthy enough to sustain sedation for the duration of the IDT?
4. Has the patient had clinical signs consistent with AD for at least one year?
5. Has the patient lived for at least one year (i.e. four seasons) in this particular area of the country?
6. Is the patient maximally middle aged at the time of intradermal/serum allergy testing?
7. Does the patient consistently live in the same geographic (allergenic) environment?
8. Does the patient have any pertinent drug history?
9. Is there any evidence of inflammation or infection on the skin at the site and time of intradermal testing?
10. Is it best to test at the end of peak allergy season?

How Reliable Is A Positive IDT For The Diagnosis Of Environmental Allergic Dermatitis?

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**Feline Allergic Dermatitis**

Feline allergic dermatitis includes a heterogeneous group of clinical manifestations, such as eosinophilic granuloma complex, miliary dermatitis, self-induced alopecia and/or excoriations. None of these clinical presentations appear to be pathognomonic.

Triggers for feline allergic dermatitis include environmental and dietary allergens, as well as flea salivary antigens.

Feline atopic dermatitis was reported to have a prevalence of 12.5%. The age of onset is variable, with some cats demonstrating clinical signs as early as 3 months, whereas others do not show symptoms until 12 years of age.

The diagnostic work-up for an allergic cat is similar to that of the allergic dog. Due to the diversity of clinical signs associated with the underlying disease complex, it is of pivotal importance to exclude flea-induced and dietary-induced allergic dermatitis prior to making the diagnosis of environmentally-induced allergic dermatitis. Special attention must also be given to the presence of concurrent diseases, such as bacterial and fungal skin and ear infections.