

Itchy dogs!

Itchy dogs are some of the most frequent patients we see in general practice. Pruritis (itchiness) is a symptom of an underlying disease process. Although treatment with anti-pruritic medication can be given in the short term to ease an acute itching problem, without further investigation into the underlying cause, a skin disorder can be frustrating for the dog, the owner and the vet, when it becomes a chronic problem.

The most common pruritic conditions are associated with;

- ectoparasites e.g. fleas, mites (*Demodex* or *Sarcoptes*), walking dandruff (*Cheyletiella*)
- flea allergic dermatitis
- bacterial infections
- *Malassezia* (yeast) infections or hypersensitivity
- atopic dermatitis (equivalent to eczema in people)
- food allergy.



Some of the common skin conditions can co-exist, e.g. atopic dermatitis with a secondary skin infection.

Itching can also be a feature of other inflammatory or neoplastic (cancerous) processes such as pemphigus foliaceus, mast cell tumours and epitheliotrophic lymphoma.

Symptoms

- itching and scratching
- head shaking
- recurrent ear infections
- chewing / nibbling
- licking feet
- hair loss (alopecia)

Canine atopic dermatitis (CAD) is a common skin disorder defined as a hereditary predisposition to develop pruritic inflammatory skin disease associated with IgE antibodies, which typically target **environmental allergens**.

CAD typically affects dogs from 6 months to 3 years of age. It is characterised by pruritus (itching) and secondary skin lesions, often with a characteristic distribution including the face, inside of the ear flaps, underside of the abdomen, inside the elbows, the skin in between the toes and the perineal area / anal glands.

The pathogenesis is complex. The skin of an atopic dog has a defective outer layer (epidermis). Percutaneous sensitisation (through the skin) to environmental allergens such as house dust mites, mould and pollen, and/or allergens from food, induce the production of local inflammatory and itch mediators.

Various factors can exacerbate CAD including:

- ectoparasites especially fleas
- colonisation and infection of the skin by bacteria (*Staphylococcus pseudintermedius*)
- colonisation and infection of the skin by yeast (*Malassezia pachydermatitis*)
- environmental factors e.g. an increase in seasonal allergens
- dysfunction of the skin barrier.

Food allergies

Some patients with Canine Atopic Dermatitis exhibit flares when exposed to food allergens. They are likely to have year-round clinical signs and sometimes gastro-intestinal signs (soft stools, increased faecal frequency, vomiting and diarrhoea). These dogs should undergo a food elimination trial to determine whether food contributes to the clinical signs.

The food trial should be performed for a minimum of 8 weeks and needs to be an exclusion diet so nothing else is fed except the new food and water. We do however normally recommend introducing the new diet over a week by feeding it 50:50 with the existing kibble to allow the pet's gastrointestinal tract to get use to it and hopefully avoid gastrointestinal upsets. Once the trial is started, no treats or titbits should be given.

A novel protein and carbohydrate source should be used, meaning a protein that hasn't been fed before, such as venison or duck. An off-the-shelf pet shop diets should not be used as it can't be guaranteed that it hasn't been contaminated with other proteins.

Hydrolysed diets are used for the diagnosis and management of dogs with food allergies. The proteins are hydrolysed (broken down) into the smallest possible particles so the body is less likely to produce an immune response.



Investigations

Initial diagnostic tests for pruritis (itching) include:

- flea combings
- cellotape strips
- blood tests to check for the present of mites
- blood tests to rule out thyroid disease or hyperadrenocorticism (Cushing's disease)
- treatment with ectoparasiticides against flea, ticks and mites
- skin scrapings
- skin cytology
- food elimination / diet trial with a hydrolysed or novel protein diet.

Skin biopsies are usually reserved for refractory cases or for animals in which there is a suspicion of an inflammatory or neoplastic cause.

Intradermal skin testing (IDST) and/or allergy blood (serum) tests are useful tests for formulating allergen specific immunotherapy vaccines, but are not diagnostic tests.



Despite significant efforts to identify a diagnostic test for Canine Atopic Dermatitis, there is no single quick test and the diagnosis remains clinical, based on the following:

Important details in the history of dogs suspected of having CAD:

- age at onset
- seasonal pattern to clinical signs
- pruritus (itching) with no skin changes at the onset
- familial or breed predisposition (e.g. Westie, Labrador, Frenchie)
- previous response to steroids (glucocorticoids).

Favrot's criteria has been implemented to aid the diagnosis of CAD, and if 5 of the 8 criteria are fulfilled there is an 80% chance that the dog has CAD. Combining this with a careful work up for the exclusion of other differentials, e.g. ectoparasites and skin infections, the specificity of the diagnosis is increased.

- Onset of signs under 3 years of age
- Dog living mostly indoors
- Steroid-responsive pruritus
- Pruritus (itching) with no skin changes (i.e. aseasonal pruritus)
- Affected front feet
- Affected ear pinnae
- Non-affected ear margins
- Non-affected dorsolumbar area

Treatment options

CAD is a multifactorial chronic disease that requires a multimodal treatment approach to decrease pruritus and inflammation below the threshold of clinical signs.

A rational approach to treatment is required; the keys to success are client education and a combination of interventional measures specific for flare factors and symptomatic treatment.



Management starts with:

- identifying and addressing (or, if possible, avoiding) the associated flare factors
- using a topical and/or systemic treatment to decrease inflammation and pruritus.

Managing flare ups:

Specific avoidance interventions depend on identification of all the factors associated with a flare for clinical signs in an individual dog. Common flare factors include fleas and flea bite hypersensitivity, bacterial or yeast overgrowth, and food and environmental allergens. CAD due to food and environmental allergens can present with identical clinical signs and may both be present concurrently.

- **Flea treatment**

Dogs with Canine Atopic Dermatitis (CAD) are predisposed to flea bite hypersensitivity if repeatedly exposed to flea salivary antigens.

All dogs with atopy should be protected with year-round preventative flea treatment as well as relevant environmental measures such as household sprays.

Some dogs may present with concurrent signs of CAD (e.g. licking feet, ear infections) and flea bite hypersensitivity (e.g. pruritus and hot spots at the tail base). These dogs should be treated with aggressive flea control themselves, as well as treating all in-contact animals and the household.

- **Topical antibacterial and antifungal shampoos**

Specific antibacterial and antifungal treatments should be based on regular cytologic evaluation (impression smears or ear swabs under the microscope) of atopic skin lesions and on documentation of the presence of bacteria and/or yeast at these sites.

Because atopic patients frequently develop recurrent ear and skin infections with *Staphylococcus* and *Malassezia* species, topical treatment once to twice weekly therapy using antimicrobial shampoos (e.g., chlorhexidine, benzoyl peroxide, miconazole, ketoconazole) and ear cleansers are recommended as an essential component in the long-term management of secondary infected CAD.



- **Other topical therapies**

Various products are available such as shampoos, rinses, mousses and medicated wipes which can help to remove allergens, moisturise the skin and treat the secondary bacterial and yeast infections.

Some products also contain antihistamines and corticosteroids to help reduce the inflammation.

- **Oral medications**

Oral treatments can help reduce inflammation.

Corticosteroids (prednisolone) are very effective and can be given in acute flare ups to reduce the itching. Steroids however can have marked side effects, including increased drinking, increased urination and increased appetite, as well as changes to the liver. Therefore it is best to use the lowest effective dose for the shortest amount of time.

Cyclosporine is another immunosuppressant which is effective in reducing the itchiness. **Oclacitinib** is a newer treatment option which inhibits an enzyme within skin cells, to stop the continuous cycle of itching and further inflammation. Both have fewer side effects compared to steroids but regular blood tests should be performed while a dog is on either of these medications.

Antihistamines (e.g. chlorphenamine, cetirizine) can be useful to prevent mild itchiness, but are less effective when excessive itchiness is already present.

Essential fatty acid (EFA) supplements can be used in conjunction with other therapies to improve the skin barrier.

Antibiotics are sometimes required so cases with secondary bacterial infections (pyoderma) or in cases with “hot spots”.

- **Injectable medication**

Lokivetmab is a **monoclonal antibody** which targets and neutralises the key itch-inducing cytokine in CAD. It is given by subcutaneous injection and starts working within 8 hours. The injection lasts 4 weeks, or in some cases up to 8 weeks. The injection can be used seasonally in the case of environmental allergies (e.g. pollens, grasses) or all year round if required.

- **Allergen-specific immunotherapy (ASIT)**

Intradermal skin testing or allergen (IgE) blood tests can be performed to identify what is causing your dog’s allergic skin reaction. It might then be possible to reduce your dog’s exposure to certain allergens such as removing plants from the garden, changing from carpets to hardwood floors, using household sprays against dust mites etc. In many cases, these allergens often can’t be avoided due to their prevalence in the environment.

Based on allergy testing, an immunotherapy vaccine can be made specifically for your dog against the things they are sensitive to e.g. house dust mites, certain grasses and pollens. This vaccine is then administered by subcutaneous injection (under the skin) in increasing volumes until a standard 1ml dose is given monthly. The aim is for their immune system to build up tolerance to the allergens.



Summary

Atopy can negatively impact a dog's quality of life. It can also be frustrating, time-consuming, and costly for dog owners to manage. The good news is that most atopic dogs can be treated successfully by working closely with us to prevent and manage flare-ups.

To book in for your pet in for a health check please call us on 01423 228080 or visit www.clarohillvets.co.uk