IWBDA 2023 Breeders Workshop

Skin Allergy

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ICADA Guidelines on Diagnosis of Atopy.

- ICADA is the International Committee on Allergic Diseases of Animals.
- Three distinct but complementary approaches to diagnosing Canine Atopic Dermatitis (CAD). Misdiagnosis can be reduced by utilisation of these in combination, rather than solo.
 - **1**. Traditional Work-up
 - 2. Detailed interpretation of history and clinical signs using "Favrot's criteria"
 - 3. Allergy testing

Traditional Work-Up

- History age of onset and duration, seasonality, breed, flea control. What came first – lesions or itch?
- Rule out other conditions such as parasites and infection using skin scrapes, cytology etc.
- Identify types of lesions and body regions involved



Clinical Signs and Lesions

- Alopecia Abnormal loss of hair coat. Multiple causes include hormonal, staphylococcal folliculitis (bacterial), insect bite hypersensitivity, demodex, ringworm.
- *Hyperpigmentation* Darkened skin, usually in response to chronic itch.





 Salivary Staining Evident on light coloured dogs as pinkish coat discolouration Dogs that are itchy prior to the development of lesions usually have an allergic component.
 Dogs that develop lesions prior to pruritus can have primary bacterial or yeast infections.

- **Otitis Externa** Infection of the external ear canal. Recurrent in 50% of food allergic or atopic dogs.
- Interdigital dermatitis
 Inflammation or infection of the feet or paws.



- Pustules Small raised lesions with white "head". Evidence of bacterial infection, usually Staphylococcus.
 - PapulesSmall raised red lesions. Evidence of bacterial infection, usually Staphylococcus.
- Epidermal Collarette a burst pustule.
- Circular region of healing skin with a raised edge of dead skin or scale. Results from
- Target lesions Circular, flat lesions that are red but can become hyperpigmented. Generally see with Staph pyoderma, flea hypersensitivity or contact dermatitis.



 Hotspot A rapidly developing moist region of skin with infection and excoriations/ ulcerations. Hotspots develop secondary to self-trauma with the inciting cause generally fleas, mouthing wounds from other dogs, or ear infections.



- **&** Conjunctivitis
- Inflammation of the conjunctiva of the eye. Conjunctivitis can be allergic in origin but due to the many different causes, it is not generally considered part of the diagnostic process of allergic skin disease.



Common Features of Pruritic Skin Diseases

| | Fleas | Other parasites | Demodex | Ringworm | Scabies | Bacterial (staph) | Malassezia | Contact | Atopy | Food |
|---------------------------------------|-------|--------------------|---------|----------|---------|----------------------|------------|---------|-------|------|
| Alesional Pruritus | XX | XX | | | | | | XX | XX | XX |
| Papules | XX | Х | | | XX | XX | | XX | XX | XX |
| Target lesions | Х | | | | | Х | | Х | | |
| Erythema | Х | | Х | | Х | | XX | XX | XX | XX |
| Pustules/ Epidermal Collarettes | | | | | | XX | | | | |
| Furunculosis | | | Х | | | Х | | | | |
| Focal alopecia | | | XX | XX | | XX | | | | |
| Alopecia | XXX | | | | | | | XX | XXX | XXX |
| Blackhead s | | | Х | | | | | | | |
| Hotspots | XXX | | | | | Х | | | | |
| Salivary staining | | | | | | | XX | | XX | XX |







Three conditions with similar distributions:

- 1. Canine AD and food allergy
- 2. Malassezia dermatitis
- 3. Trombiculiasis

Diagrams reproduced from:

Hensel et al. Canine atopic dermatitis: detailed guidelines for diagnosis and allergen identification. *BMC Veterinary Research* (2015) 11:196 Open access under Creative Commons http://creativecommons.org/licenses/by/4.0

Breed differences in distribution of atopic dermatitis lesions



Favrot's Criteria

<u>Set 1 (5 criteria – sens 85.4%, spec 79.1%)</u>

- Age at onset <3years
- Mostly indoor
- Corticosteroid-responsive pruritus
- Chronic or recurrent Malassezia infections
- Affected front feet
- Affected ear pinnae
- Non-affected ear margins
- Non-affected dorso-lumbar area

<u>Set 2 (5 criteria – sens 77.2%, spec 83%)</u>

- Age at onset <3years
- Mostly indoor
- "Alesional" pruritus at onset
- Affected front feet
- Affected ear pinnae
- Non-affected ear margins
- Non-affected dorso-lumbar area

Allergy Testing

- Novel protein diet trials recommended for suspected food allergies due to poor results from Intradermal testing (IDT) and Allergen Specific IgE Serology (ASIS).
- Need to withdraw medications prior to IDT 1-4 weeks for oral meds.
- ASIS and IDT approx. 70% accurate.
- Recommended for selecting allergens for immunotherapy rather than diagnosis.





Prevention of development of CAD

• Genetics and environment.



Increased Atopic Dermatitis

- Commercial diets
- Exposure to smoke
- City environments
- Gut dysbiosis

Decreased Atopic Dermatitis

- Non-commercial diets
- Rural environments
- ?probiotics



Gut- Skin Axis



Prevention of flares in an atopic dog.

- The pruritic threshold is the point at which a dog will feel "itchy" and need to scratch.
- It is the cumulative effect of the level of atopy and other factors that will determine clinical signs.



Increases "itchiness"

- Hot weather/ skin
- Anxiety or stress
- Boredom
- Dry skin
- Secondary skin infections

Decreases "itchiness"

- Cool weather/ skin
- Calm environment
- Mental stimulation
- Moist skin



Prevention of flare-ups

- 1. Basic coat care
 - Wash off allergens in soap-free shampoo.
 - Maintain moisture in skin "bricks and mortar" analogy
 - Prevent/ treat secondary infections.
 - Contact time 10 minutes to hydrate, shorter = dehydration, longer = maceration.
 - Leave-on conditioners.
- 2. Dust mite control
 - 60% of allergic dogs have reactions to house dust mite.
 - Temperatures over 60° Celcius
 - Regular vacuuming and washing of bedding.

Prevention of flare-ups

3. Storage mite control

- Present in all dry dog foods, multiplies over time and if not stored correctly (heat).
- Buy small bags of food or place in freezer.
- Cross reactivity to house dust mite.
- 4. Otitis preventative
 - At GDN all dogs placed on an otitis preventative have not had another ear infection.
 - Kleo™ plus 3ml Dexamethasone (5mg/ml) plus 3ml Enilconazole (100mg/ml)
 - Essential infection is cleared before starting (preventative not treatment)
 - 1ml into each ear weekly or fortnightly.

Prevention of flare-ups.

5. Flea control

• Reduce pruritic threshold.

6. Nutrition

- Commercial diets either hydrolysed protein or sensitive skin diets.
- Balanced biome to improve gut tolerance to food proteins.

Thank you



