Cytopoint, Apoquel, and Atopica, Oh My! How Do We Decide Which Systemic Drugs to Use?

[Updated April 2026]

Mollie Mesman, DVM, DACVD
Greenville, SC, USA

***This set of notes is not a comprehensive dermatologic drug review but does provide pertinent information as it applies to allergic itch treatment. The clinician is advised to consult his or her preferred drug manual for complete drug details.

Allergen-specific immunotherapy

Allergen-specific immunotherapy (ASIT) is a foundation treatment for canine atopic dermatitis. There are few studies that have documented its effectiveness in dogs (likely due to the cost and time requirement for performing controlled studies for a complex disease that may take a year or more to help). Still, ASIT is the only current treatment for allergies that can partially modify, or reverse, the pathogenesis of the condition, reduce clinical signs, and prevent progression of the disease.

Conventional ASIT approaches consist of either subcutaneous or sublingual administration. Other routes that are less commonly used but may be promising include intralymphatic and transdermal administration (Allibre TVIT transdermal immunotherapy).

There are many positives to communicate to owners regarding the use of ASIT including: minimal adverse effects, lack of long-term effects that may accompany the use of a lifetime of allergy medications, and the potential for long-lasting effectiveness. A quality of life (QoL) study from 2023 showed that the QoL of dogs treated with ASIT and their owners seemed to improve significantly compared to dogs that are not treated with ASIT.

Based on the available studies, the response rates of canine ASIT (typically quoted as percentage of dogs that experience at least 50% improvement in clinical signs) are quoted as 60-70% (with many dermatologists experiencing even greater efficacy).

The mechanisms of action for canine ASIT have not been fully elucidated although it is suspected that they parallel those for humans: early reduction in effector cell activity (eosinophils, basophils, mast cells) followed by a long-term immunologic shift from a T helper 2 (Th2) cell to a T helper 1 (Th1) cell response and development of immunological tolerance. Additionally, there is an increase in regulatory T cells and increase in certain cytokines such as IL-10. This leads to an increase in IgG (especially IgG4) and with extended treatment a decrease in IgE (the “allergy immunoglobulin”). The end result is immune tolerance. With sublingual administration, at least in humans, there are additional effects by oral dendritic cells, which are the key cells in oral tolerance.

ASIT protocols for dogs [and cats] lack standardization and are subject to significant variation. Different allergen dosage regimes with different allergen compositions and potencies are used. Research supports that immunotherapy is more effective when managed by a veterinary dermatologist, and this is likely due to advanced knowledge of pollination periods, dosage

regimens and modifications, better compliance by owners, and reliable systems for refilling immunotherapy (most general practices have been found to have a large percentage of new immunotherapy sets that are never refilled which means these pets are never making it to a full year).

Rush immunotherapy is the process of administering increasing doses of immunotherapy over the course of 4-8 hours while being monitored for reactions in the clinic. One specific rush administration schedule has been examined in dogs and found to be equally effective to a conventional injection protocol. The benefit of rush immunotherapy is better owner compliance, potentially faster improvement, and likely better tolerance by the pet given that the pet goes home on the weekly or biweekly dose of immunotherapy (bypassing the induction phase).

Despite the fact that ASIT may be costly and take a year or longer to become effective, it should still hold an important place in the allergy therapy "tool box." Unfortunately, it is often looked at as a "last resort," but it should be viewed as a foundational and early treatment for patients that can may reverse the pathogenesis of disease and potentially provide a cure for allergies rather than only masking the clinical signs. It is important to note that, while we do have several newer allergy medications that are highly effective, these drugs may not work long-term for chronic allergies and they unfortunately allow the disease to progress over time.

Antihistamines

Strong anecdotal evidence supports that antihistamines do have some effect (perhaps 20% of pets experience improvement), either as a monotherapy or as an allergy drug-sparing agent. Limited studies support the efficacy of one antihistamine over another in veterinary patients.

I highly recommend at least starting with antihistamines in mildly pruritic patients. I do not recommend jumping immediately to a stronger allergy medication. I also find that antihistamines can be helpful in patients once their allergies are better controlled and when used in a multimodal approach.

I typically recommend choosing an antihistamine based on cost, convenience of administration, and availability of milligram size (some antihistamines are not possible in smaller pets, like fexofenadine [Allegra]).

If after 14 days there is minimal to no improvement, prescribe another antihistamine until each of the antihistamines has been tried for 14 days or an effective one has been found.

Steroids

Historically, prior to the emergence of our newer allergy drugs, steroids were the most widely used and abused drugs in veterinary medicine, especially in reference to management of chronic allergy disease.

The pharmacology of steroids is complex. These agents affect almost all body systems. Metabolically, steroids promote protein catabolism, gluconeogenesis, glycogenesis, lipolysis, and decrease peripheral glucose utilization.

*** Steroids are not a diagnostic test for allergic disease. Glucocorticoids suppress inflammation and pruritus and therefore improve the clinical signs of many dermatologic conditions. Because of this broad anti-inflammatory effect, a positive response to steroids does not confirm an allergic etiology.

A common misconception is that if a dog improves with steroid therapy, the condition cannot be a food allergy. This is incorrect. Adverse food reactions can be steroid responsive, and improvement following glucocorticoid administration does not rule out food allergy.

Steroid response should therefore never be used as a diagnostic tool when evaluating pruritic dogs. Accurate diagnosis of allergic disease requires a systematic approach that includes ruling out parasites and infections, implementing appropriate flea control, and performing a strict elimination diet trial when food allergy is suspected.

Dermatology pearls:

1. Steroids are incredibly helpful for inflamed and/or stenotic ear canals. If you have an inflamed ear, if the dog is healthy otherwise, use high end anti-inflammatory dosing (at least 1 mg/kg/day) x 14 days then recheck the ear. There is no medication that will open an ear canal like steroids will.
2. If prednisone causes intolerable side effects, try methylprednisolone.
3. If one steroid does not work well, especially for cats, consider a different steroid like dexamethasone or methylprednisolone.
4. Consider using dexamethasone sodium phosphate (DexSP) (*use 3 mg dexamethasone/mL as the concentration when calculating*) orally for cats at 0.2 mg/kg PO SID and then tapering down from there. The volume is significantly smaller than prednisolone 15 mg/5 mL solution and cats seem to better appreciate this.

Oclacitinib (Apoquel®)

Apoquel is an anti-itch medication with some anti-inflammatory properties. The drug mitigates the clinical effects of canine atopic dermatitis through its action on the signaling pathways of Janus kinase 1 (JAK1) enzymes, which modify production of several interleukins, including IL-2, IL-6, IL-4, IL-13, and IL-31.

Dogs must be >1 year of age to use. Zoetis does not recommend the usage of Apoquel in cats. There are studies demonstrating safety in cats, however the drug is not reliably effective in cats, requires a higher dosage, and can lead to severe adverse effects.

Apoquel is not labeled for use with other drugs, though there is a study demonstrating the safety of concomitant use with cyclosporine for 3 weeks. This is a nice option to use together (off label) when you are changing over to cyclosporine and are waiting for it to take effect. Another study shows a better effect of Apoquel when a short course of steroid is used as Apoquel is started.

***If you find that combination therapy is required or that long-term twice-daily dosing of oclacitinib is necessary to control pruritus, it is important to recognize that an underlying issue may not have been fully identified or addressed. While these medications can be highly effective at controlling itch, they should not be relied upon to mask unresolved disease. In these situations,

further diagnostic investigation is warranted, and consultation or referral to a veterinary dermatologist should be strongly considered to help identify the underlying trigger and develop a more targeted long-term management plan.

There is no definitive recommendation for blood work monitoring for Apoquel. I typically recommend baseline CBC/chemistry panel to monitor overall health, and then I will monitor blood work in 1-3 months and then every 12 months thereafter.

Apoquel should not be used in the face of neoplasia or papillomas. If I diagnose neoplasia during Apoquel usage, I am typically changing therapies. Cytopoint may be a good option.

Remember that Apoquel is not a completely benign medication. Secondary infections, *Demodex*, increased ALT and ALP, azotemia with resolution after d/c drug, anemia, leukopenia, increased creatinine, histiocytoma, polyphagia, weight gain, bronchopneumonia, aggression, seizures, occult UTI, and papillomas have been reported.

Apoquel is an excellent option in dogs over 1 year of age with acute pruritus. The goal is ideally to not use Apoquel (or any drug) long-term for allergies but we know realistically a medication is often needed. New uses for Apoquel (literature review): Perianal fistulae, sebaceous adenitis (along with low dose prednisolone), pemphigus foliaceus, ischemic dermatopathy, hyperkeratotic erythema multiforme, cutaneous epitheliotropic T-cell lymphoma, ear tip ulcerative dermatitis; the list is growing!

Remember that at least 20% of dogs do not respond to Apoquel.

If Apoquel appears to "stop working," check for infections, scrape for *Demodex*, check for fleas/flea dirt, and consider the possibility of disease progression rather than decreased efficacy of the drug.

Ilunocitinib (Zenrelia®)

Zenrelia is an FDA-approved JAK inhibitor for the management of allergic pruritus in dogs 12 months and older. It differs from Apoquel by targeting JAK1/JAK2/TYK2 rather than JAK1/JAK3. It is classified as an immunomodulatory drug and can be given once daily with or without food.

- A head-to-head study with Apoquel and Zenrelia showed Zenrelia may be equal or superior in efficacy compared to Apoquel. In this study, Zenrelia was more likely to put a dog into clinical remission of itch compared to Apoquel.
- Often more cost-effective, especially in large breed dogs.
- Side effects are similar to Apoquel. Common side effects include mild GI upset and lethargy.

FDA Warning: Avoid administration for 28 days before or after vaccination. This warning is based on one study involving 8 young, unvaccinated, and unwell dogs who received a daily overdose of the drug. Follow-up studies in healthy, previously vaccinated dogs did not show compromised vaccine responses. Zenrelia is best used in healthy, adult dogs who are up-to-date on primary vaccines. Understand that outside of North America, there is no statement on the

label regarding vaccinations and dogs are being vaccinated regularly on Zenrelia.

Dosing: 0.6–0.8 mg/kg PO SID. A dosing chart is available for convenience.

Lokivetmab (Cytopoint®)

Cytopoint (Canine Atopic Dermatitis Immunotherapeutic [CADI]) is labeled for reducing clinical signs associated with "allergic dermatitis and atopic dermatitis" in dogs of any age. Cytopoint is NOT safe for use in cats.

***It is important to understand that this works for all types of allergic itch, not just environmental allergies. Cytopoint CANNOT be used as a diagnostic tool because it is NOT specific for only environmental allergies.

Cytopoint is a monoclonal antibody that blocks itch caused by IL-31. It is labeled for injection subcutaneously every 4-8 weeks. The level and duration of response varies in individual dogs. Onset of efficacy is within 1 day and may persist for up to 2 months in some patients. Elimination is via protein-degradation pathways.

The label lists no contraindications or precautions. It is safe for any age, even in dogs with concomitant diseases and medications. It has not been tested in pregnant, lactating, or breeding animals.

While Cytopoint appears to be quite safe, it is not without possible side effects. In a field safety study, reported adverse effects were noted as comparable with placebo. In rare cases, side effects include hypersensitivity-related reactions (anaphylaxis, facial edema, urticaria) and it may induce transient or persistent anti-drug antibodies which may reduce its efficacy. Transient vomiting, diarrhea, and lethargy may occur during the first few days. I have seen some profound lethargy after administration, and my own allergic Pug had an allergic reaction involving facial edema, hives, and severe pruritus.

Considerations:

- Cytopoint is potentially the best choice for a dog less than 1 year of age.
- Since Cytopoint may last up to 2 months, this should be considered when you are performing a diet trial since it may mask signs for too long when challenging the diet.
- Cytopoint, in my opinion, is *not* a good choice for severely inflamed ears and paws.

What do we do when Cytopoint runs out after 2-3 weeks?

1. Check for infection.
2. Check for fleas or other parasites.
3. Check dose of Cytopoint. Can you safely move up to next range?
4. Studies show subsequent monthly dosing of Cytopoint increases efficacy.
    a. First injection: 65% treatment success
    b. Second injection: 85% treatment success
    c. Third injection: 93% treatment success

5. Consider progression of allergic disease.
6. Consider production of neutralizing antibodies.

Cyclosporine (Atopica®, Cyclavance®, Sporimune®)

Cyclosporine acts by depressing induction of cytotoxic T-lymphocytes. Other effects include suppression of IL-2 and other cytokines such as IL-1 and blocking proliferation of activated T-lymphocytes.

Cyclosporine appears to be less commonly used than Apoquel, Cytopoint, or steroids, but it has an excellent place in our dermatology toolbox for certain types of animals, signs, and diseases.

The brand name Atopica® is reported to have better absorption in dogs. However, due to its expense, the generic alternative is often used for larger animals. When using the generic, it is imperative to use generic modified cyclosporine. There are many pharmacies that have less expensive options.

Cyclosporine is an excellent option for allergic cats and small dogs, dogs with severe pododermatitis (interdigital nodular furunculosis), allergic animals with recurrent infections, and generally in more inflamed presentations of allergies. I also prefer to use cyclosporine as my long-term medication in dogs with recurrent otitis as to reduce the need for long-term steroids.

Side effects: Cyclosporine can cause vomiting, diarrhea, anorexia, histiocytoma, secondary infection, and gingival hyperplasia. The GI effects are most common. Nephrotoxicity has been reported in humans. Side effects are rare in animals at the antipruritic dosing of 5-7 mg/kg/day. Side effects seen at higher doses such as 10-20 mg/kg/day include papillomatosis, lymphoplasmacytic dermatitis, malignancy, gingival hyperplasia, bone marrow suppression, insulin resistance, pyoderma, bacteriuria, nephrotoxicity, and hepatotoxicity.

The typical “goal” dose for canine allergies is 5 mg/kg once daily. The goal is then to put the animal’s signs into remission and then slowly taper the dose. I typically recommend starting off low and working up to 5 mg/kg/day over the course of 7-10 days. This helps to decrease the chances of GI upset. It is also recommended to put the entire box of capsules in the freezer. This appears to reduce GI upset while not affecting the efficacy of the drug.

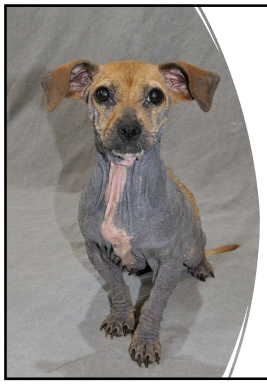
Ketoconazole will decrease the metabolism of cyclosporine (i.e. raise the blood level). It is used deliberately to reduce the amount of cyclosporine needed. An equivalent of 5 mg/kg cyclosporine = ketoconazole 2.5 mg/kg SID + cyclosporine 2.5 mg/kg SID. Use a 5-10 mg/kg dose of ketoconazole if active fungal infection is present. I find that side effects are more likely when combining ketoconazole and cyclosporine so I would only recommend this for significant financial challenges.

Blood work monitoring: baseline CBC/chemistry panel, repeat at 1 month, then repeat q 6-12 months thereafter. Monitoring will also depend upon patient’s age, concurrent diseases, and concurrent medications.

It is prudent for the veterinarian to look up drug interactions when using cyclosporine due to actions on the cytochrome p450 activity.

References

1. DeBoer, D. The future of immunotherapy for canine atopic dermatitis: a review. 8th World Congress of Veterinary Dermatology, 2016 May. DOI: 10.1111/vde.12416
2. Weitzer, T. The safety of rush immunotherapy in the management of canine atopic dermatitis – 230 cases. Veterinary Dermatology, 34(5): 385-392. DOI: 10.1111/vde.13170
3. Tater KC. Allergen-specific immunotherapy prescription patterns in veterinary practice: a US population-based cohort study. Veterinary Dermatology, 28(4): 362-e82.
4. Prada, J. Quality of Life of Allergic Dogs Treated with Allergen-Specific Immunotherapy –A Retrospective Study. Vet Sci, 10(2): 72. DOI: 10.3390/vetsci10020072
5. Harvey, R. Successful treatment of perianal fistulas in two dogs with oclacitinib. Veterinary Dermatology, 34(5).
6. Perez-Aranda, M. Successful treatment of sebaceous adenitis with oclacitinib and low-dose prednisolone in a dog. Veterinary Dermatology, 35(2).
7. Panteri, A. Repeated oral dose tolerance in dogs treated concomitantly with ciclosporin and oclacitinib for three weeks. Veterinary Dermatology, 27(1): 22-e7.

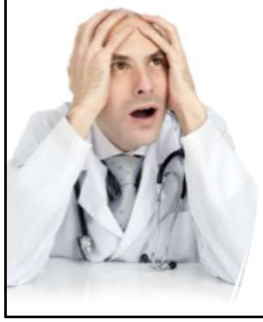


It looks like allergies, but it's not

Diseases that may mimic hypersensitivity disorders

Mollie Mesman, DVM, DACVD
Greenville, SC

1



AGENDA

- Why does it matter?
- Specific conditions
  - Immune-mediated diseases
  - Neoplasia
  - Endocrinopathies
  - Parasitic diseases
  - Miscellaneous
- Pearls for differentiating

2

Overview of the Issue

- Allergies make up large percentage of skin cases in general and dermatology practices
- Management can be challenging!
- Allergies often a **diagnosis of exclusion**
- We must be able to recognize diseases that can mimic allergies, in order to:
  - **Prevent misdiagnosis**
  - **Provide appropriate treatments**
  - **Determine prognosis**
  - **Hasten resolution of condition**
  - **Save time and money!**

3

Remember the "3-visit rule"

- We want to get our cases "right" as quickly as possible.
- ACVD study regarding early referral
  - 46% of dermatological diagnoses made by primary care veterinarians did not match dermatologists' diagnoses
  - Tipping point of frustration (73% of clients)
    - 3 visits
    - $925

4

Overview of the Issue

- **Important points to keep in mind:**
  - Not every pruritic dog is allergic (**PAIN acronym**)
    - Allergy drugs mask other diseases.
  - Not every dog with hair loss or inflammation is pruritic
    - Is the owner ACTUALLY observing pruritus?

5

Overview of the Issue

- **Important points to keep in mind:**
  - Opportunistic infections may be caused by more than just allergies
  - Not all patients with inflammatory skin lesions are infected

6

Causes of Pruritus (PAIN Acronym)

- **P**arasites
  - Fleas, Scabies, Cheyletiellosis, lice, chiggers, *Otodectes*, *Demodex injai*
- **A**llergies
  - Food, environmental, contact, flea
- **I**nflammation
  - Bacteria, yeast, fungus, drug reactions, immune-mediated, calcinosis cutis
- **N**eurogenic
  - Psychogenic, sensory neuropathies
  - or
- **N**eoplastic
  - Epitheliotropic lymphoma, mast cell tumor

7

Dermatology Pearl

- "If it doesn't look like an allergy, biopsy."
  - Adult-onset, asymmetric, severe, or poorly responsive disease should trigger a diagnostic reset.

8

9

Immune-mediated diseases

- Pemphigus foliaceus


10

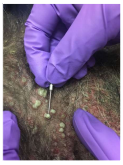
Pemphigus foliaceus

- Most common canine immune-mediated skin disease
- Production of autoantibodies against a component of desmosomes (desmocollin-1) on keratinocytes
- Detachment of cells in upper epidermis (acantholysis)
- Usually **idiopathic**
  - May be **drug-induced, paraneoplastic, sequela to chronic inflammatory disease**

11

Pemphigus foliaceus

- Clinical signs
  - Middle-aged to older dogs, rarely < 1-year-old
  - Akitas, Chows, Cocker spaniels, Dachshunds, Labrador retrievers, English bulldogs
  - Evolution of pustule
  - **Pruritus in up to 40%**
  - +/- depression, lethargy, fever, lymphadenopathy
  - Head, face, ears; may be generalized
  - Paw pad fissures, crusting
  - Secondary bacterial pyoderma

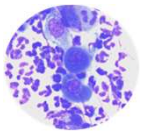


12



13

Pemphigus foliaceus



- Diagnosis
  - DDx: bacterial pyoderma, demodicosis, dermatophytosis (especially *Trichophyton*), systemic and discoid lupus erythematosus
  - Investigate systemic/topical drug history
  - Cytology of intact pustule: **Acantholytic cells suggestive, not definitive**
  - Biopsy of intact pustule (if possible)
    - Subcorneal pustule with acantholytic cells, non-degenerate neutrophils, and eosinophils
      - **Add on PAS stain** to rule out pustular acantholytic dermatophytosis

14

Dermatology Pearls

- Do not clip hair or scrub skin before biopsy.
  - The answer may be in the crust.
- If needed, use scissors to trim hair.
- Use a **dermatopathologist** for everything that is not a mass
  - Ask your local dermatologist
  - Use a vet school diagnostic lab with a dermatology service

15

Pemphigus foliaceus

- Treatment
  - **Treat secondary bacterial pyoderma**
  - **Prednisone 2-6 mg/kg PO SID initially**
    - Most cases improve over 10-14 days, taper by 25% q 2 weeks
    - Goal: EOD regimen of <1 mg/kg
  - **When do I add in a second or third drug?**
    - Almost always
    - More severe cases
    - Minimal to no improvement in first 10-14 days
    - Flare when tapering steroid
  - Steroid sparing agents: **Apoquel® (off-label), azathioprine, cyclosporine**, chlorambucil, mycophenolate mofetil, Human IVIG
- Blood work monitoring dependent on drug, usually q 2-4 weeks

16

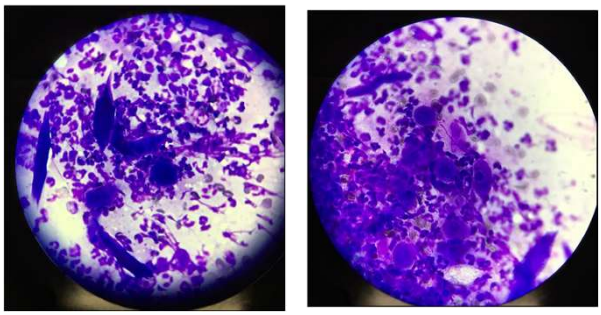
Pemphigus foliaceus

- **How can we distinguish pemphigus foliaceus from allergies?**
  - Crusted or pustular disease of face and ear PINNAE
  - Paw PAD involvement
  - Failure to demonstrate infectious organisms on cytology
  - Poor response to antibiotic therapy
  - Confirmation on biopsy

17



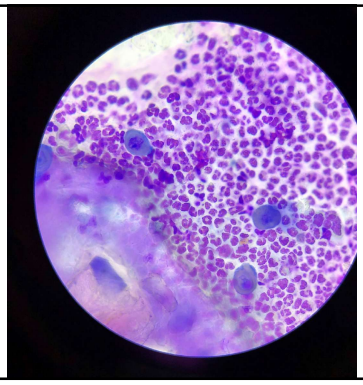
18



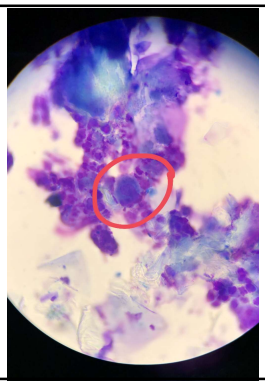
19

20

21



22



23

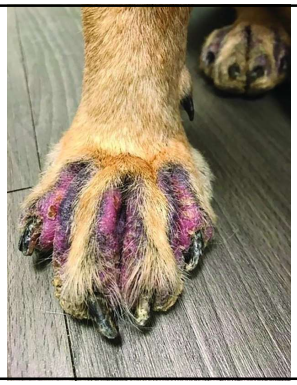
24

Dermatophytosis

25

26

27



28

Non-allergic inflammatory dermatosis

- Sebaceous adenitis

29

Sebaceous glands

- Alveolar glands
- Haired skin of mammals
- Secrete sebum
  - Lubricates skin
  - Helps skin retain moisture
  - Chemical/physical barrier against microorganisms
  - Contains IgA – role in local immune defense
  - Contains free fatty acids – antimicrobial

30

Sebaceous adenitis

- Destructive inflammatory disease of sebaceous glands and ducts
- Various theories on pathogenesis
- Inflammation and destruction of sebaceous glands with fibrosis, eventually complete absence of sebaceous glands
- Breed predispositions
  - **Akitas, standard Poodles, vizslas**, Samoyeds, GSD, Springer spaniels
  - **DOODLES**
  - Any breed
- Young adult to middle-age

31

Sebaceous adenitis

- Clinical signs
  - Early
    - Scaling, mild erythema
  - Later
    - **Follicular casts**, brittle hair
  - **Changes in hair color, texture**, characteristics
    - Curvy hair may become straight/coarse
  - Papules/pustules/pruritus due to superficial pyoderma or *Malassezia* dermatitis
  - Otitis externa due to sebaceous gland destruction in ear canal
  - Short-coated breeds may have plaque-like or nodular lesions

32

33

34

35

36

Sebaceous adenitis

- DDx
  - Staph folliculitis
  - Demodicosis
  - Dermatophytosis
  - Keratinization defects
  - Follicular dysplasia
  - Endocrinopathies
  - Nutritional deficiencies

37

Sebaceous adenitis

- Why might this be mistaken for allergies?
  - Variable pruritus, scaling, erythema +/- otitis externa
- How can we distinguish SA from allergies?
  - Follicular casts are classic (can occur with other conditions though)
  - Pruritus resolves with antimicrobial therapy
  - Marked scaling in the ear canal
  - Changes in haircoat
- Diagnosis
  - Biopsy for definitive diagnosis
    - Granulomas in areas of sebaceous glands
    - Absent sebaceous glands in chronic lesions

38

Sebaceous adenitis

- Treatment
  - Treat secondary infections
  - **Topical therapy with two-part bathing regimen**
    - Keratolytic shampoo to remove scale (benzoyl peroxide shampoo)
    - Replacement of missing emollients, leave on for 30 minutes
      - Alpha keri oil
      - 50% propylene glycol with water
  - Essential fatty acid supplementation
  - 50-75% propylene glycol in water spray SID then taper to 2-3 times per week
  - Vitamin A 8,000-10,000 IU/20 lb PO SID
  - **Cyclosporine 5-10 mg/kg/day**
  - Commonly unresponsive to steroids

39

Sebaceous adenitis

- Cyclosporine alone vs. combination therapy vs. topicals alone
  - Topical treatment alone or in combination with cyclosporine reduced scaling more effectively
  - Alopecia reduced with all treatments
  - Combination = synergistic effect on scaling, alopecia, and inflammation of sebaceous glands*
  - Evidence of sebaceous gland regeneration with CSA

Lortz J, Favrot C, Mecklenburg L, et al. *Vet Dermatol.* 2010

40

Case Reports > Vet Dermatol. 2024 Apr;35(2):238-241. doi: 10.1111/vde.13216.
Epub 2023 Nov 15.

Successful treatment of sebaceous adenitis with oclacitinib and low-dose prednisolone in a dog

María Pérez-Aranda [1], César Yotti [1], Judith Pérez [1], Pedro J Ginel [2]

Affiliations + expand

PMID: 37968244 DOI: 10.1111/vde.13216

Abstract in English, Chinese, German, Japanese, Portuguese, Spanish, French

Finding an effective and well-tolerated treatment for canine idiopathic sebaceous adenitis (ISA) can be challenging. This case report describes an 8-year-old male Rottweiler with ISA successfully treated with a combination of oclacitinib and low doses of prednisolone.

41

42


43

Neoplasia

- Cutaneous epitheliotropic T cell lymphoma

44

Cutaneous epitheliotropic T cell lymphoma

- Malignant neoplasm arising from T lymphocytes
- Clinical signs - **VARIABLE**
  - May be **pruritic**
  - Plaques, nodules, mucocutaneous depigmentation and ulceration, generalized erythema, diffuse scaling, pruritus
  - Most common: diffuse erythema and scaling with focal **hypopigmentation**
  - Paw pads may be hyperkeratotic, ulcerated, or depigmented
  - Slowly progressive
  - Lymphadenomegaly

45

46

Cutaneous epitheliotropic T cell lymphoma

- Diagnosis
  - Cytology: abundant round neoplastic lymphoid cells
  - Biopsy: lichenoid band of pleomorphic neoplastic lymphocytes infiltrating the epidermis, superficial dermis, hair follicle, and sweat gland epithelium
  - Screen for internal organ and lymph node involvement

47

Cutaneous epitheliotropic T cell lymphoma

- Treatment
  - Refer to oncologist or dermatologist
  - Surgical excision of solitary lesions
  - Lomustine (CCNU) q 21 days +/- oral glucocorticoid
  - Gemcitabine studies at Purdue
- Prognosis
  - Poor (MST of 6 months after diagnosis)
  - Up to 1.5 years

48

Veterinary Dermatology

ORIGINAL ARTICLE

Efficacy of verdinexor for the treatment of naïve canine epitheliotropic cutaneous T-cell lymphoma: An open-label pilot study

Elana M. Vlodaver, M. Kelly Keating, Willie A. Bidot, David S. Bruyette, Wayne S. Rosenkrantz

First published: 29 July 2024 | https://doi.org/10.1111/vde.13280 | Citations: 1

Veterinary Dermatology

Original Article

Isotretinoin treatment of 12 dogs with epitheliotropic lymphoma

Sofia Chichorro Ramos, Michael John Macfarlane, Gerry Polton

First published: 30 May 2022 | https://doi.org/10.1111/vde.13079

Funding information

This research received no specific grant from any funding agency.

49

Veterinary Dermatology

Case Report

Treatment of canine cutaneous epitheliotropic T-cell lymphoma with oclacitinib: a case report

Jeylan Aslan, Michael A. Shipstone, Louise M. Sullivan

First published: 25 May 2021 | https://doi.org/10.1111/vde.12976 | Citations: 2

50

Cutaneous epitheliotropic lymphoma

- Why is cutaneous lymphoma sometimes mistaken for allergies?
  - Early stages of disease include **pruritus, erythema, and scaling**
- How can we distinguish cutaneous lymphoma from allergies?
  - Diffuse or generalized **erythroderma**
  - Exfoliative dermatitis with large sheets of scale
  - **Depigmentation** of paw pads or nasal planum in scaly pruritic dog
  - Poor response to conventional allergy approaches
  - Older age of onset

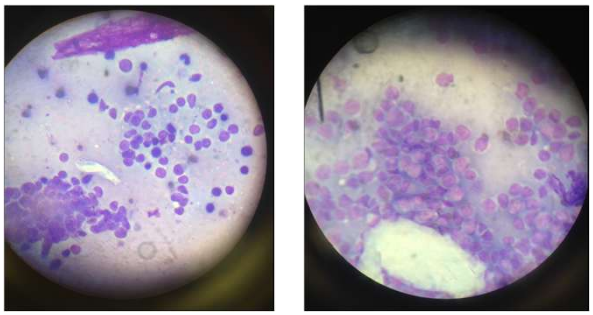
51

52

53

Cutaneous epitheliotropic lymphoma

54



55

56

57

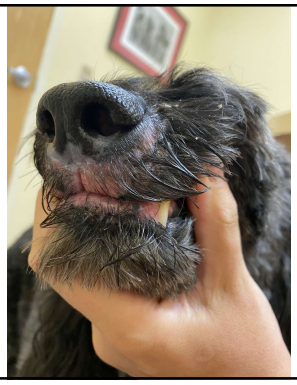
58

59

60

61

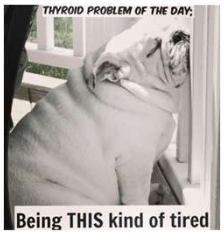
62



63

Other diseases to be aware of:

- Secondary pyoderma due to
  - Cushing's disease
  - Hypothyroidism
- Dermatophytosis
- Demodicosis
- Scabies



64

Dermatology Pearls

- Older dog with recurrent skin infections +/- pruritus
- First step is treating infections and seeing if pruritus resolves
- If **non-pruritic** when **non-infected**, proceed with general lab work +/- hormonal testing
- If **pruritic** when **non-infected**, diet trial (unless history of moving within past 2 years)
- ***Remember that general lab work can be completely normal

65

Dermatology Pearl

- Scrape every NEW dermatology patient with signs of folliculitis + established patients any time something CHANGES
  - Remember that nearly all of our allergy drugs could lead to demodicosis
- *Demodex injai*
  - Long-bodied, skinny mite
  - Terriers predisposed
  - Greasy, itchy dorsum

66

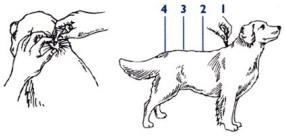
Demodicosis

- **How do we differentiate demodicosis from allergies?**
  - Prominent follicular openings plugged with keratin/comedones
  - Significant pedal alopecia and erythema, often occurring in adults without previous skin disease
  - Periocular alopecia without pruritus or very mild pruritus
  - Skin scrape positive!

67

Dermatology Pearl

- When I have a patient who presents for non-seasonal pruritus or the first episode of pruritus, I always check for parasites and perform a **parasiticidal trial**.
- This would be a good step prior to referring to dermatologist.



68

Summary

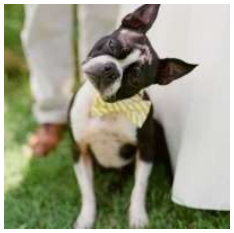
- **In general, how do I differentiate non-allergic diseases from allergies?**
  - Age of onset
  - Degree of pruritus
  - Lack of pruritus when infections are treated
  - Lesion location
    - Pinnae
    - Paw pads
    - Primarily facial
  - Response to treatments
  - Trial and error!

69

Action items

1. Commit to offering a biopsy if you walk into a room and immediately notice extensive crusting, ulcerations, depigmentation, nasal changes, etc.
2. Make in-house cytology and parasite control non-negotiable before prescribing allergy drugs OR antimicrobials.
3. Set a diagnostic checkpoint and escalation rule

70



Questions?

71

References

- Miller W, Griffin C, and Campbell K. Muller and Kirk's Small Animal Dermatology. 7th edition. Philadelphia: Saunders, 2013.
- Hnilica K and Patterson A. Small Animal Dermatology: A Color Atlas and Therapeutic Guide. 4th edition. St. Louis: Elsevier, 2017.
- Mueller RS. Demodicosis – What is new? In: NAVDF 2015 proceedings. P 196.
- Djuric M *et al*. Efficacy of oral fluralaner for the treatment of canine generalized demodicosis: a molecular-level confirmation. *Parasit Vectors*. 2019 May 28; 12(1):270.
- Fourie JJ, Meyer L, Thomas E. Efficacy of topically administered fluralaner or imidacloprid/moxidectin on dogs with generalized demodicosis. *Parasit Vectors*. 2019 Jan 25; 12(1):59.
- Zewe CM, Altet L, Lam ATH *et al*. Afoxalaner and fluralaner treatment do not impact on cutaneous Demodex populations of healthy dogs. *Vet Dermatol* 2017; abstract.
- Perego R *et al*. Critically appraised topic for the most effective and safe treatment for canine generalized demodicosis. *BMC Vet Res*. 2019 Jan 7; 15(1):17.
- Six RH, Becskei C, Mazaleski MM *et al*. Efficacy of sarolaner, a novel oral isoxazoline, against two common mite infestations in dogs: Demodex spp. and Otodectes cynotis. *Vet Parasitol* 2016.
- Romero C *et al*. Efficacy of fluralaner in 17 dogs with sarcoptic mange. *Vet Dermatol*. 2016 Oct; 27(5):353-e88.
- Lortz J *et al*. A multicenter placebo-controlled clinical trial on the efficacy of oral ciclosporin A in the treatment of canine idiopathic sebaceous adenitis in comparison with conventional topical treatment. *Vet Dermatol* 2010; 21(6):593-601.
- Cooper JC. Acquired primary hypothyroidism: a challenging diagnosis. In: NAVDF 2015 proceedings. P 184.

72