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Joya

DOCTOR OF VETERINARY MEDICINE

Purring & Pruritic: Avoiding Catopy Catastrophies

Joya Griffin, DVM, DACVD
Animal Dermatology Clinic

Signs **YOU** are a Crazy Cat Lady



How to avoid a “Catopy” Catastrophy!



Goals

- Review allergic dz in cats & how it differs from the dog
 - Varying reaction patterns
 - Differentials to rule out in the pruritic cat
- Do's & Don'ts of work up & treatment



The Itchy Cat



Allergic disease in cats

- Does atopic dermatitis even exist?
- Much less is known
 - Demonstrable IgE only in some
 - Varying CS's & presentations
 - Little know about barrier function
- Non-flea, non-food hypersensitivity dermatitis (NFNFHD)= feline atopic skin **syndrome** (FASS)
 - A subset of FAS
 - Includes FASS, GI disease & respiratory dz

NFNFD

- One study found 12% of allergic cats
- Face & ventrum were most commonly affected
- Allergen-specific IgE in ~70% of these cats
- Unsure if IL-31 is major pruritogenic cytokine



So what do you do?

- First thing to remember is

Cats & their owners can
be challenging!



The DO'S & DON'TS



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DO #1

Know the Cat Reaction Patterns



Reaction Patterns

- Do not indicate a specific hypersensitivity disorder
- Can be see multiple rxns in same cat
- Can also be produced by non-hypersensitivity diseases
- May be seen in conjunction with allergic asthma, rhinitis and conjunctivitis

Reaction Patterns

1. Self-induced hair loss
aka “fur-mowing”
2. Eosinophilic granuloma complex
3. Papulocrustous dermatitis
aka “miliary dermatitis”
4. Head/neck or facial pruritus with excoriations



Self-induced Hair loss “fur-mowing”





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Introducing the “No Pants Cat”





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Psychogenic?



Crazy Cats?

21 Cats with Presumptive Psychogenic Alopecia

- Dermatologic and behavioral examination, diet trial then steroid trial if failed diet
- 16 (76%) dx with medical causes of alopecia
 - Only 2 with psychogenic alopecia
 - 3 cats with both



- Waisglass SE, Landsberg GM, Yager JA, Hall JA. Underlying medical conditions in cats with presumptive psychogenic alopecia. J Am Vet Med Assoc. 2006 Jun 1;228(11):1705-9.

History is Important!

- Owner reports excessive licking or grooming
- Vomiting of hairballs, hair in the feces, or large tufts of hair in the environment
 - Or is hair spontaneously falling out?
 - Does hair easily epilate?
- Can prove via a Trichogram or “The E-collar test”



Eosinophilic Granuloma Complex (EGC)

- Three Syndromes:
 - Indolent Ulcer
 - Eosinophilic Plaque
 - Eosinophilic (Linear) Granuloma



EGC

- Affect the skin, mc jxns & oral cavity
- Solitary or grouped
- Secondary bacterial infections may occur
 - Less common with eosinophilic granuloma
- May have genetic predisposition in idiopathic cases
- Often confused w/ immune-mediated dz or neoplasia

Indolent Ulcer

- Unilateral or bilateral
- Can be secondarily infected
- Heal with scarring



Indolent Ulcer vs. SCC??

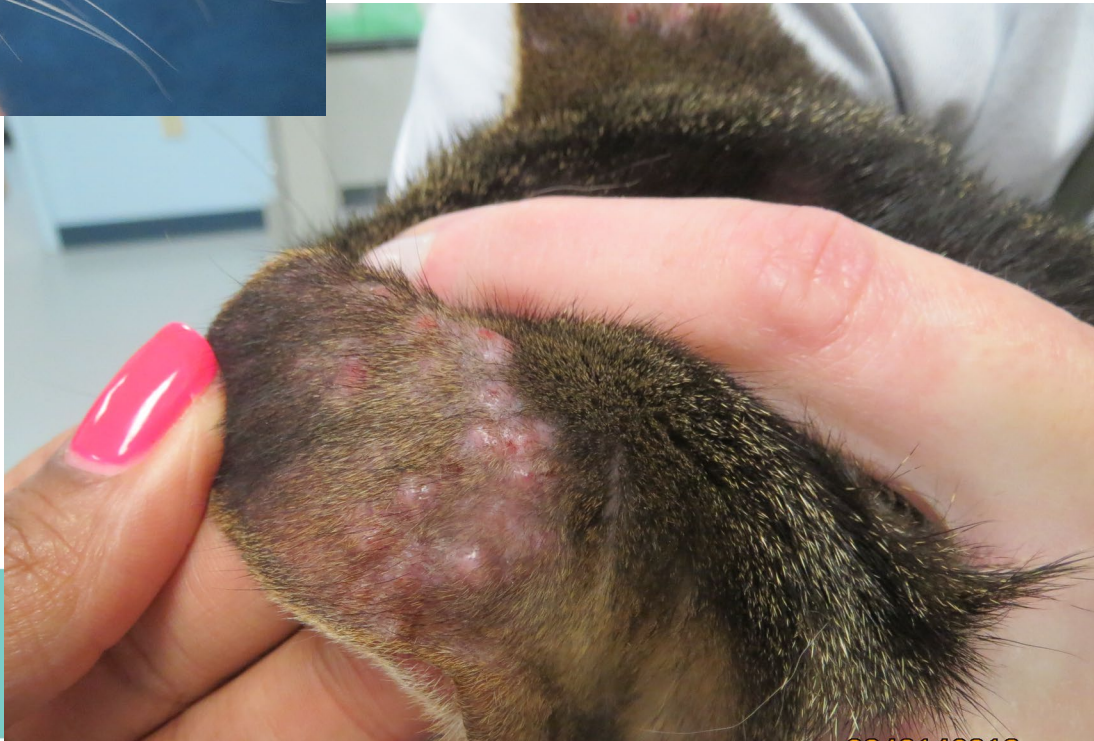


Eosinophilic Plaques- Atopy





Mosquito Bite Hypersensitivity



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Atopic with concurrent MBH



Linear Eosinophilic Granuloma



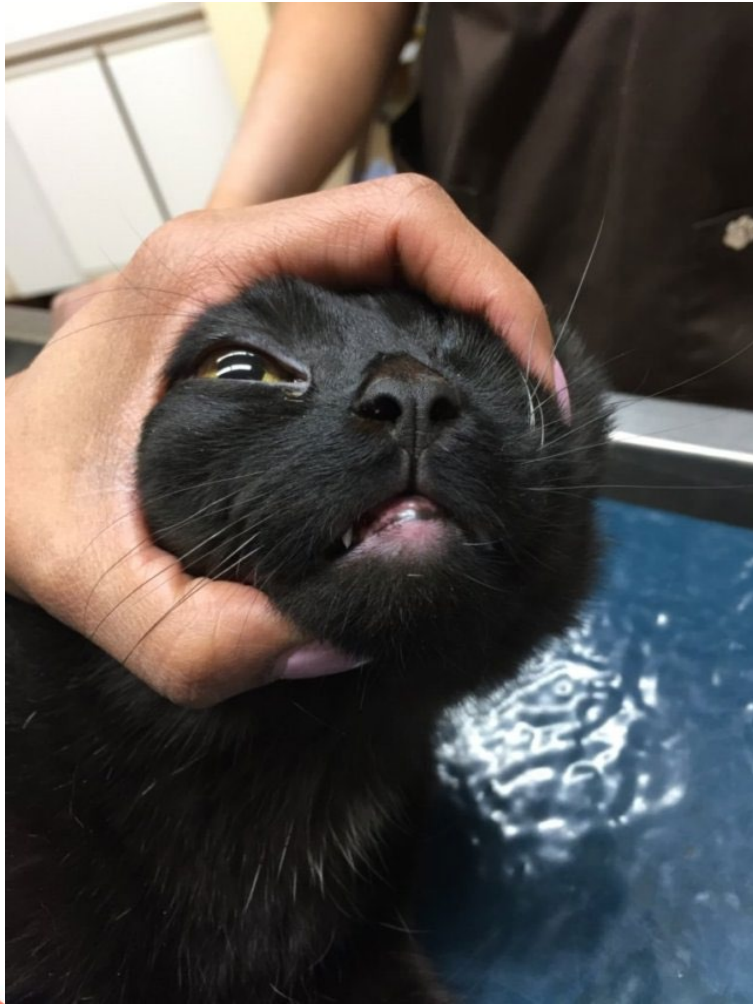


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Oral Eosinophilic Granuloma



Eosinophilic granuloma- “pouty chin”



Papulocrustous Dermatitis (“Miliary Dermatitis”)

- Unique to the cat, not seen in humans or dogs
- Does not represent a specific allergy or dz





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FAD



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Head/Neck Pruritus with Excoriations



Drug Rxn





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Combination of Rxn Patterns

Indolent Ulcer



Eosinophilic Plaque,
self-induced alopecia



Severe Atopy

Facial pruritus/ excoriations



Self-induced pruritus



Eosinophilic plaque



Cats presenting with skin disease....

- 1407 cats presented for dermatologic disease over 15-year period
 - 33% dx with allergic dermatitis
 - Other diagnoses: 10% bacterial folliculitis/furunculosis, 6% with otodectic mange, 5% flea infestation, 4% feline acne, 3% abscess

- Scott DW, Miller WH, Erb HN. Feline dermatology at Cornell University: 1407 cases (1988-2003). J Feline Med Surg. 2013 Apr;15(4):307-16.

Feline Rxn Patterns

- Must rule out the many different causes
 - **Get back to basics!**
- History, whisker to tail exam, & basic diagnostic tests are **KEY**
 - Indoor/Outdoor?
 - Current medications?
 - Parasite control?
 - Multiple affected?
 - Pruritic?
 - Age onset? Seasonality?



DO # 

Make your Clinic a Feline-Friendly Space



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Ways that may help

- Consider feline-only room
- Feliway diffuser, spray
- Gently handling



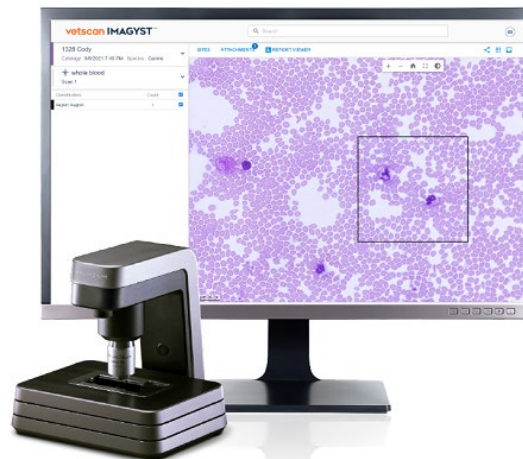
DO # 

Cytology & Treat Infection



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- Why perform cytology?
 - To **know** what we are treating**
 - To choose appropriate therapy
 - Easy to do
 - Quick results
 - Inexpensive
 - Instills client's faith in you

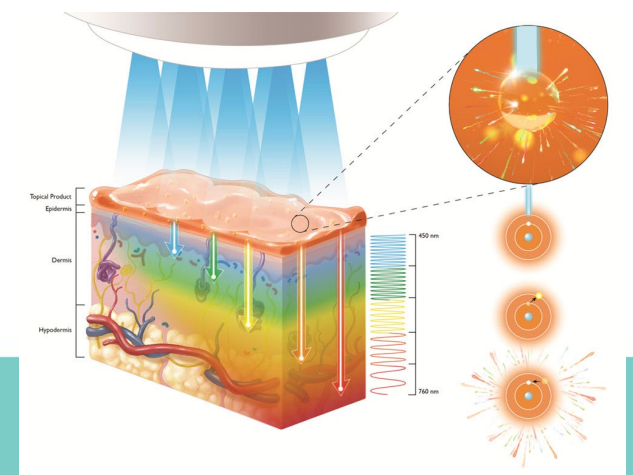


Secondary infections

- Less common in cats, < 50%
 - BUT often under-diagnosed
 - Decreased staph adherence to corneocytes
- Lesions vary
 - Can mimic rxn patterns in allergic cats
- *Malassezia* is isolated in higher numbers in affected sites in allergic cats

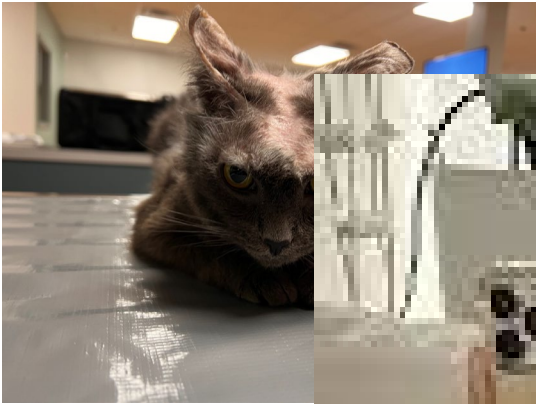
Consider Phovia

- Photobiomodulation → low-level light therapy that increases secretion of several GF's & collagen
- Accelerates natural skin regeneration & speeds wound healing
- Helps reduce use or duration of systemic ab's
- Use for surgical wounds, pyoderma, furunculosis, perianal fistula in dogs, cats, horses





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DO #



Treat for ectoparasites **EVEN if indoor only**





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Demodex gatoi

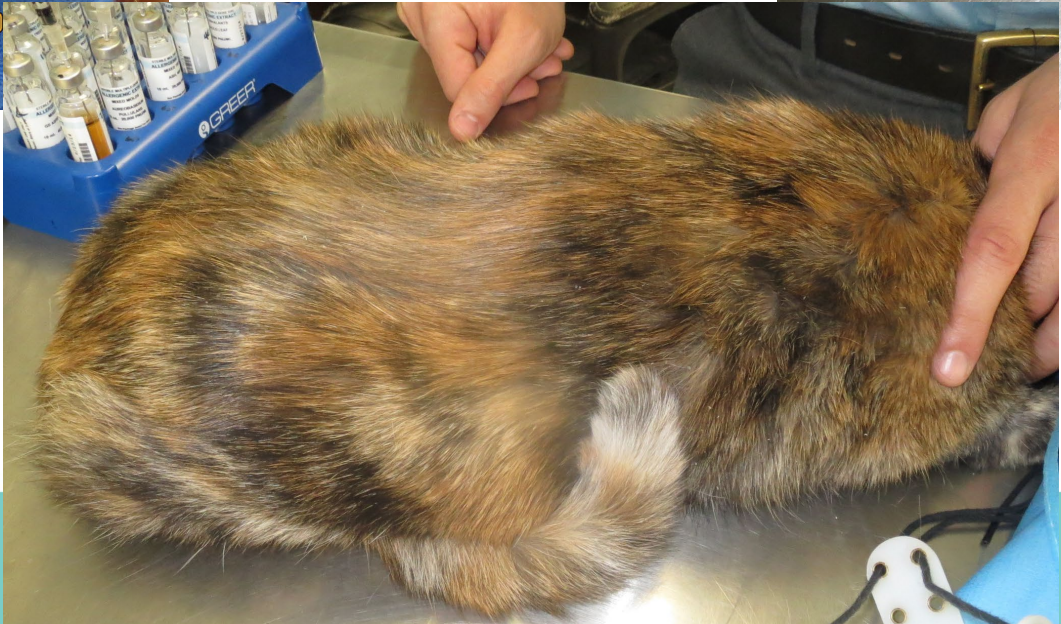
- Contagious, superficial mite
- Can induce intense pruritus
 - Non-steroid responsive in up to 65%
 - Associated w/ excessive grooming
- Difficult to find on skin scrape
 - +/- fecal
- Treat based on presumption
 - Topical Bravecto® or Revolution® Plus
 - Tx other in-contact cats



Demodex Gatoi & Atopic dermatitis



After lime sulfur dips & oral ivermectin weekly



DO # 5

Prioritize diet trials



Diet Trial Tips

- Consider if nonseasonal
- Pruritus focused on head/neck
- If concurrent GI signs exist

- Strict novel protein or hydrolyzed diet trial
 - Serologic & IDT cannot diagnose
 - Read labels, avoid hidden ingredients, flavored supplements
 - May need to separate to feed





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Diagnosis of Food Hypersensitivity

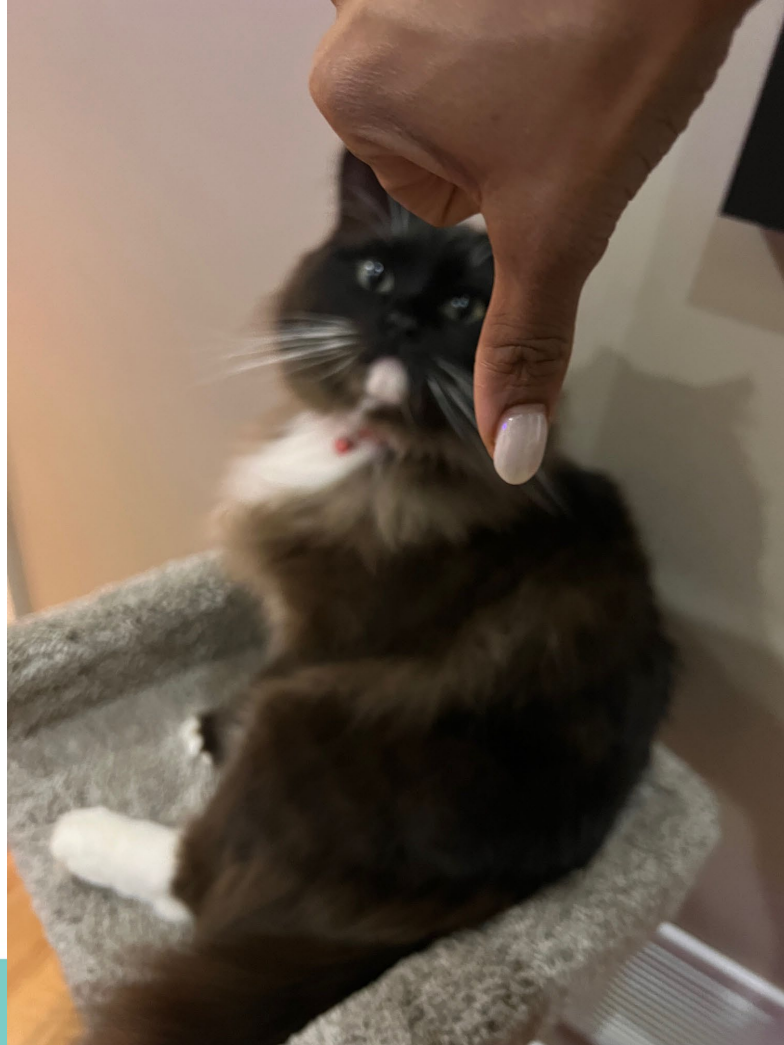
- Offer several RX options for picky eaters
 - Send samples home
 - Consider homecooked
 - Feed for at least 6-8 weeks
 - At least 50% reduction in CS's in first 4-6 wks
- Recommend provocative challenge





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DON'TS



DON'T

Indiscriminately use steroids





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Pic courtesy of Dr. Stormy Walker



Remember treatment Goals

- **NOT just to reduce itch**
- Reduce or prevent allergic flare
- Reduce incidence of secondary infections
- Re-establish the skin's barrier function



Steroid Considerations

- Steroids can be used for acute or intermittent flares
 - Oral preferred
 - Long-term if other tx fail
 - Monitor for side effects s/a cutaneous atrophy, CHF, DM
- Steroid tachyphylaxis
- All steroids are not equivalent
 - Prednisolone preferred d/t higher bioavailability vs. prednisone

ORAL Glucocorticoids in Cats

- Good for short season allergics or for flares
- Be mindful of appropriate dose
- Taper to a lowest effective alternate day dose if long-term
- Study on methylprednisolone vs. triamcinolone in cats provided remission in 90.6% in 7-14 days vs 45.5% with prednisolone in 28 days

Ganz EC, Griffin CE, Keys DA, Flatgard TA. Evaluation of methylprednisolone and triamcinolone for the induction and maintenance treatment of pruritus in allergic cats: a double-blinded, randomized, prospective study.

Other Symptomatic Therapy

- Antihistamines?
- Cyclosporine
- Redonyl®
- Maropitant



Antihistamines

- Very low efficacy
- May have steroid-sparing effect, must give consistently
- Not for severe cases as sole therapy
- 15-20% efficacy, may need to try multiple

Amitriptylline 10 mg/cat SID

Cetirizine 5 mg/cat SID

Chlorpheniramine 2-4 mg/cat BID

Clemastine 0.68 mg/cat BID

Cyproheptadine 2 mg/cat BID



Cyclosporine for Cats

- Calcineurin inhibitor
 - Inhibits T helper and cytotoxic T cells, **IL-2** & other inflammatory cytokines
 - Atopica® and Modulis®
- Humans: Anti-rejection drug, RA, Psoriasis, AD, alopecia, ulcerative colitis, IBS, Crohn's dz
 - Investigated in tx of asthma, brain injury
- Dogs & Cats: AD, lupus, vasculitis, IMHA, organ transplantation in cats
 - **78% effective in cats, liquid formulation**



Administration Tips

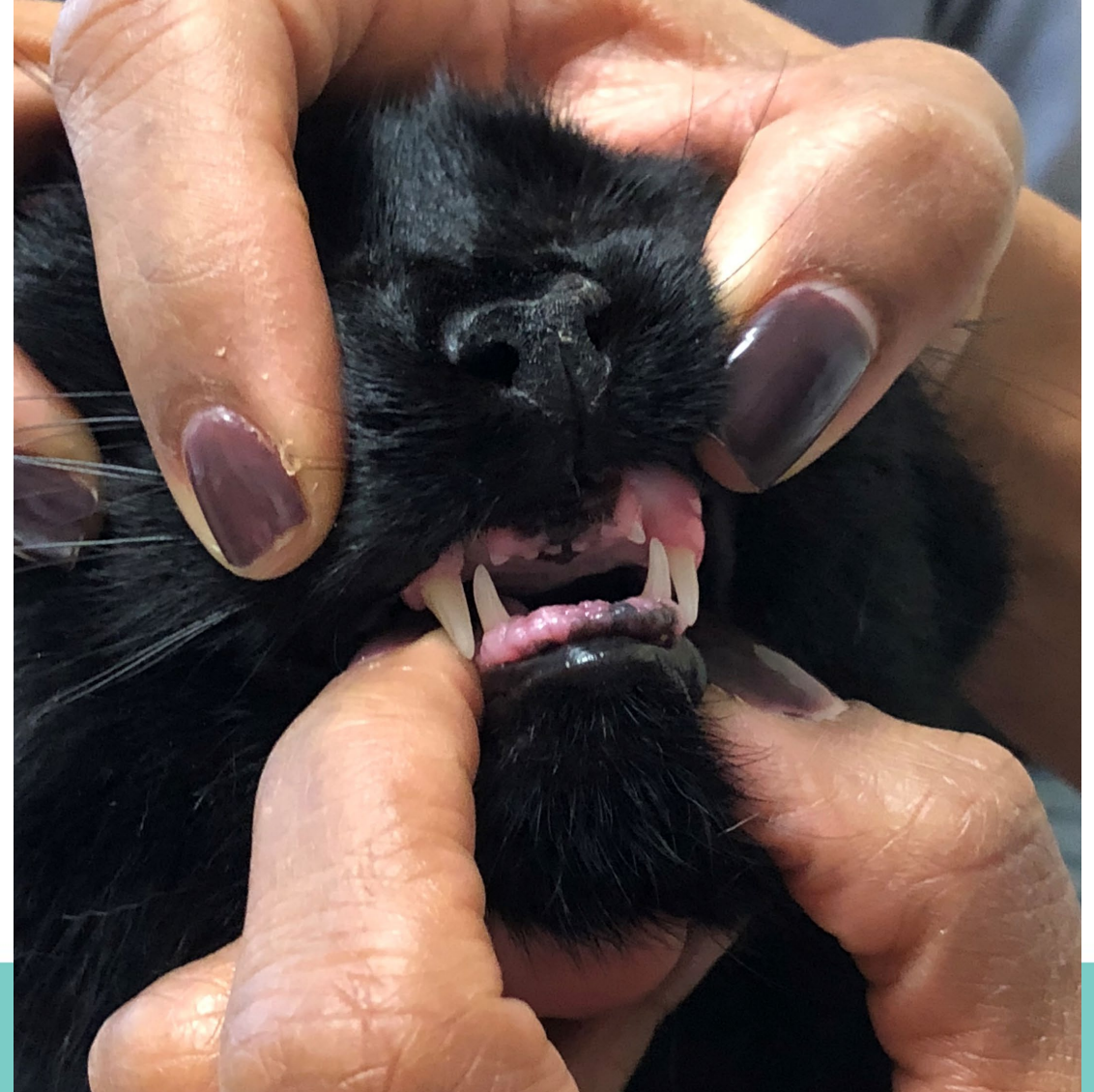
- If difficult to medicate
 - Considered flavored liquid or chew
 - Dose 7 mg/kg
 - Ensure giving SID for first month, then can try taper EOD
 - May need steroid taper initially
 - 50% remain in remission at EOD dose
 - Makes dosing more doable



Atopica®-induced gingival hyperplasia



Two-months after taper



One month before & after CsA



Injectable CsA?

- Open label pilot study
 - CsA 50 mg/ml injectable
 - Dosed at 2.5-5 mg/kg SQ QD to for 60 days
 - 5 cats withdrew from study
 - Appears efficacious with significant decrease in FeDESI and pVAS scores in 60 days
- Koch SN, Torres SMF, et al. Vet Dermatol. 2018 Apr;29(2):115-120. pub 2017 Oct 25.
- **Subcutaneous administration of ciclosporin in 11 allergic cats - a pilot open-label uncontrolled clinical trial.**



Other Options?

- **Redonyl®**- anti-inflammatory endocannabinoid
 - Reduces mast cell degranulation
 - 10 mg/kg SID
 - Reduced pruritus & lesions in 2/3 of 17 cats
- **Maropitant (Cerenia®)**- neurokinine receptor antagonist, may inhibit Substance P
 - 2 mg/kg PO SID
 - Reduced lesions (SCORFAD, pVAS) in 11/12 cats
 - Good to excellent efficacy in 83% per owners
 - Uncontrolled, open label

DON'T



Do NOT Use Apoquel®!



Apoquel®

- Use in dogs ONLY
- Likely require higher doses d/t metabolism
- Leading to greater risk systemic side effects & toxicity
 - Potential effects on kidneys, BM suppression, fatal toxo



Differential Effects of Oclacitinib in Dogs and Cats

P.I.C. COLE, W. COLLARD, A.G. GONZALES
Zoetis Kalamazoo United States

Oclacitinib maleate is a Janus kinase inhibitor (JAKi) approved for the control of atopic dermatitis (AD) and pruritis associated with allergic dermatitis in dogs. The precept used to balance efficacy and safety of oclacitinib in dogs is inhibiting Th2 dependent cytokines (IL-31) and minimizing inhibition of JAK2 dependent cytokines erythropoietin and granulocyte-macrophage colony-stimulating factor thereby diminishing adverse effects on hematology. Independent studies have reported off-label use of oclacitinib to control signs of feline atopic skin syndrome. This work aims to characterize the differential effects of oclacitinib in dogs and cats by reviewing pharmacokinetics, IL-31 half-maximal inhibitory concentration (IC50s), and JAK2 levels in dog and cat cells. The elimination half-life in cats is 2.5 hours, shorter than the half-life in dogs of 4 hours. The IL-31 IC50s for dogs are 36 nM versus 168 nM for cats. The shorter half-life and lower IL-31 potency in cats necessitate twice-day dosing for efficacy. Transcript quantification and protein levels of JAK2 are much lower in cat cells compared with dog cells, which have significant implications for the safety profile in cats. Safety studies conducted by Zoetis across a range of doses, both lower and higher than those published and duration > 28 days, have not established a sufficient therapeutic index for oclacitinib in cats. The lack of an adequate safety margin in cats is primarily due to differences in the pharmacokinetics, IC50s against JAK1 and JAK2-dependent cytokines, and JAK2 protein levels within feline cells compared with dogs where these parameters have been optimized to establish an adequate safety margin.

Source of funding

Zoetis Veterinary Medicine Research & Development, Kalamazoo, MI, USA.

Conflict of interest

Authors are Zoetis employee's.

Cytopoint in Cats?



- Caninized molecule with potential to cause **adverse reaction** in cats



DON'T



Forget Immunotherapy

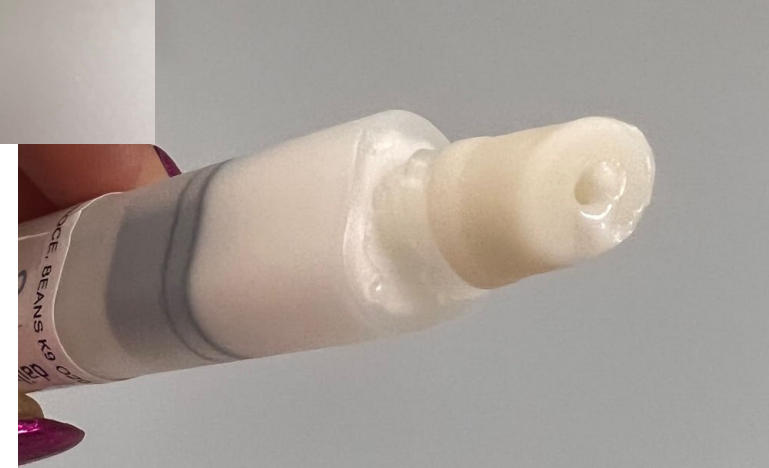
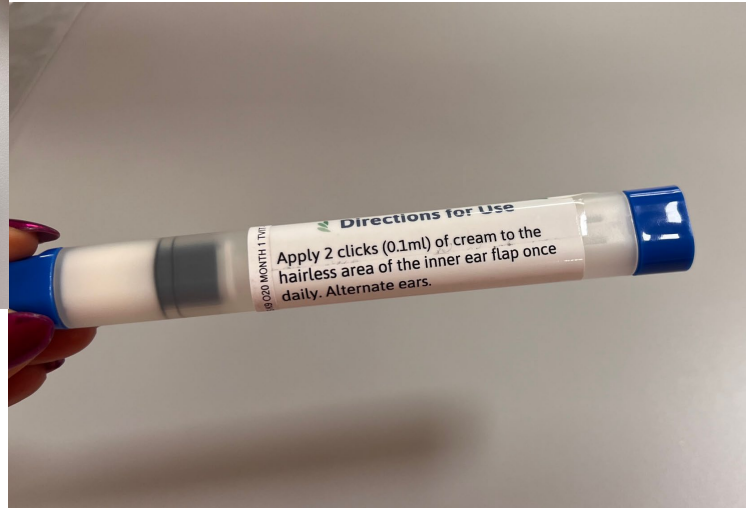


Allergen-specific Immunotherapy



- Can prevent CS's & alter long-term course of dz
 - Based on serology or IDT results
- 60-78% efficacy in dogs, ?? cats
 - can decrease amounts/frequency of other meds
- Can take 9-12 months for full efficacy
- Subcutaneous, Sublingual ASIT are available
 - **Now transdermal!**

Transdermal Immunotherapy



DON'T #



Forget Topical Therapy



Topical Therapy in Cats

- It is possible in most cats in some form
 - Mousse or wipe applications may be easier
 - Decreases allergen exposure, microbial adherence and restores barrier fxn
- Ointment for pruritic focal lesions

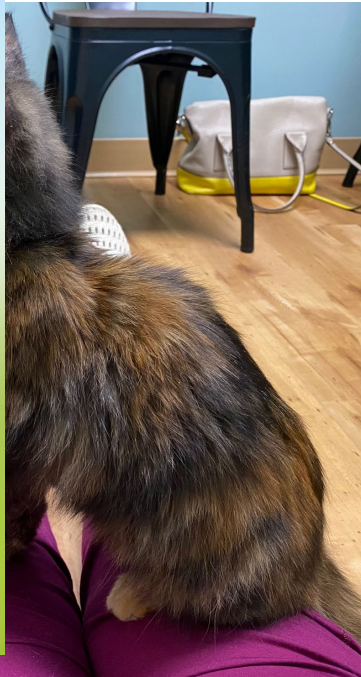


DON'T # 5

Let cats fool you!



Diagnostic Myths



In Summary

Do's

- Do know cat rxn patterns
- Do create feline-friendly clinic
- Do cytology, treat infection
- Do treat for ectoparasites
- Do prioritize diet trials

Don't

- Don't use steroids indiscriminately
- Do NOT use Apoquel®
- Don't forget ASIT
- Don't forget topicals
- Don't let cats fool you!



Questions?



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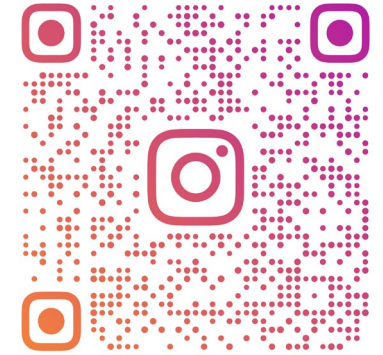
Thank You!

Watch “Pop Goes the Vet with Dr. Joya” on



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DRJOYA_THEPETSINVET

- Animal Dermatology Clinic
Louisville, KY
- infolouisville@adcmg.com



- No conflicts of interest