


**Gems from the
2015 North
American
Dermatology
Forum**

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North American Veterinary Medicine Forum

- navdf.org
- 2015 meeting was April 15-18th in Nashville, TN
- 2016—no meeting in support of 8th World Congress of Veterinary Dermatology May 31-June 4, 2016, in Bordeaux, France www.vetdermbordeaux.com
- 2017, April 26-27, Disney’s Contemporary Resort
- 2018, May 2-5, Marriott Wailea Beach Resort & Spa, Maui, Hawaii

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**Stability and pharmacokinetics of
Atopica capsules stored at -20 C**

Bachtel J, Pendergraft J, Rosychuk RAW, et al (CSU)

- Storage of capsules @ -20F (freezer) may reduce incidence of vomiting
- This study assessed CsA concentrations and pharmacokinetics after administration to beagles with storage of up to 30 days
- Freezing had no effect on concentrations or pharmacokinetics (AUC, Cmax, Tmax)

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Retrospective study of clinical characteristics of doxorubicin-induced alopecia in 28 canine patients
Falk EF, Lam ATH, Barber LG et al TUFTS

- Atrophy of all layers of epidermis + sebaceous glands, marked follicular hyperkeratosis
- Breeds most likely to develop alopecia are those with curly and wire-type coats (42.9% v 5%)
- Dogs receiving higher cumulative dose have higher risk



Owner perception of pruritic behaviors in 314 apparently healthy dogs: a survey based approach
Stetina K, Griffin C, Marks SL (ADC, San Diego, CA)

- Mean PVAS 0.56/10, median 0/10 apparently healthy dogs (60% had PVAS of 0/10)
- 95% prediction interval is between 0-3.4
- Ages was positively correlated with face/muzzle rubbing, lichen/chewing paws, head shaking and sneezing and were positively correlated with feeding of treats and number of walks
- Sneezing higher in dogs that also "scoot"



Owner perception of frequency of GI signs in 314 apparently healthy dogs: a survey based approach
Stetina K, Griffin C, Marks SL (ADC, San Diego, CA)

- Mean 2.22 bowel movements/day (96% from 1-3)
- Fecal consistency score 2.3 (95% from 2-3)
- 90% received treats; 91% flatulence (positive correlation with feeding of treats)
- 71% feed twice daily
- Raw diets associated with increased # bowel movements and decreased flatulence
- Chihuahuas had increased frequency of coprophagia
- 16% fed fish oils – associated with increase in mucus in stool



Comparison of minocycline and doxycycline susceptibilities of methicillin-resistant *Staphylococcus pseudintermedius* isolates using current and revised breakpoints

Hnot JL, Cole LK, Lorch GL et al (NC State)

- New breakpoints have been proposed, not yet adopted by all laboratories (CLSI standards)
- Current tetracycline < 4 mcg/mL used for all; new minocycline <0.25 mcg/mL; doxycycline <0.125 mcg/mL
- Misclassification as susceptible to minocycline for 45/100 isolates and to doxycycline for 5/100 isolates; only 31/100 isolates were susceptible to both minocycline and doxycycline



Effect of food on the pharmacokinetics of minocycline in healthy research beagles

Hnot JL, Cole LK, Lorch GL et al (NC State)

- Feeding decreased AUC (12.75 v 25) and also decreased Cmax; elimination rates not affected
- Dry food had greater effect than canned food
- Recommend giving without food
- Capsules stick to base of tongue – need to flush mouth to ensure are swallowed



Determining canine skin concentrations of terbinafine for the treatment of *Malassezia dermatitis*

Gimmler-mercer JR, White AG, Kennis RA et al (Auburn)

- Measured terbinafine concentrations in serum, stratum corneum and sebum on days 1, 5, 7, 11, 14, 21, 28 and 35 after treatment with 30 mg/kg once daily for 21 days
- Serum concentrations during treatment ~10 mcg/mL (MIC is 0.008 mcg/mL)
- Stratum corneum concentrations ~0.1 mcg/mL during treatment)
- Levels decreased after discontinuation, not suitable for pulse dosing in dogs



Investigation of the effects of 30 day administration of oclacitinib on intradermal and allergen-specific IgE serology testing in atopic dogs

Clear V, Petersen A, Rosser EJ et al (MSU)

- 11 dogs in study, 0.4-0.6 mg/kg q 12 hrs x 14 days then q 24 hrs for 16 days
- IDT and serology at day 0 and 30
- No effects on IDT or serology
- Drug withdrawal not required to perform IDT or serology



Sterile nodular panniculitis: a retrospective study of 39 dogs

Contreary CL, Outerbirdge CA, Affolter VK et al (UC Davis)

- Over-represented breeds: Australian shepherd dogs, Brittany spaniels, Dalmatians, Pomeranians, Chihuahuas
- Mean age 6.5 yrs
- Majority (32) no current illnesses
- Mean time to remission 2.9 mo
- Treatments: tetracycline/niacinamide (14), CsA (9), azothiaprine (6), corticosteroids (32)



Sterile nodular idiopathic pyogranulomatous panniculitis in a mixed breed dog infected with *Bartonella henselae*

Pendergraft J, Balakrishnan N, Davenport A, Breitschwerdt E (CSU, NCState)

- 9 yr MC mixed breed dog with pyogranulomatous dermatitis and panniculitis
- PAS stain, acid fast stain, aerobic, anaerobic & fungal cultures negative
- Initial treatment prednisolone 1 mg/kg/day → lesions resolved but relapsed when dose taper to 0.5 mg/kg/day
- CsA 3 mg/kg/day + fluconazole 9 mg/kg/day → lesion resolution but relapsed with treatment discontinued
- Enrichment cultures of blood and tissue → *Bartonella henselae* San Antonio 2:D
- Doxycycline 4.5 mg/kg q 12 hr + rifampin 4.5 mg/kg → lesion resolution but relapse when treatment discontinued
- CsA 3mg/kg/day + fluconazole 9 mg/kg/day → resolution
- ?? Role of *Bartonella* in SNPD



Serum Malassezia-specific IgE in dog with recurrent Malassezia otitis externa without concurrent skin disease

Layne EA, DeBoer D (Wisc)

- 21 dogs with ≥ 3 episodes of yeast otitis in 18 mo
- No other symptoms
- 29% increased IgE to *Malassezia*
- 44% increased IgE to grass pollens
- 89% increased IgE to tree pollens
- Suggestive that these dogs have underlying atopy & environmental allergens more important than yeast



A prospective, randomized, double-blinded, placebo-controlled trial evaluating the effects of a natural triglyceride omega-3 supplement in atopic dermatitis and erythrocyte membrane fatty acid concentrations in dogs

Palmeiro BS, Shanley KJ, Mehler SJ et al (PA)

- Canine Omega Benefits (COB) (Veterinarian Recommended Nutraceuticals, PA)
- 72 atopic dogs (68 completed study: 33 COB, 35 placebo)
- CADESI & VAS on days 0, 42, 84 + rbc FA levels
- Significant reduction in CADESI @ days 42 & 84
- 60% COB dogs decrease in VAS > 2 cm, 16% of placebo
- COB was an effective treatment in this study



Evaluation of CsA-sparing effects of PUFAs in the treatment of canine atopic dermatitis

Muller M, Linek M, Rothig A, et al (Germany)

- 36 dogs
- 40-50 mg/kg omega 3 PUFA or placebo
- Monthly rechecks, CsA dose ↓ if CADESI-03 ↓
- CsA in PUFA group 3.8 → 2.8 mg/kg at 12 wks
- CsA in Placebo group 3.7 → 2.4 mg/kg at 12 wks
- Also ↓ in pruritus in PUFA group



ZTS-00103289 Caninized Monoclonal AB to IL-31
 Fleck TJ, Bammert G, Shelly J et al (Zoetis)

- 18 beagles per group
 - 1 mg/kg SC mAB or placebo
- Challenged with IL-31 at days 1, 28 and 56
- Pruritus (least-square mean scores)

	Day 1	Day 28	Day 56
mAB	8	17	53
placebo	70	62	67

- Significant decrease in pruritus by 8 hours post injection is maintained for ~ 1 month

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Laboratory dose titration efficacy study of ZTS-00103289, a caninized mAB to IL-31, in a canine model of IL-31 induced pruritus
 Walters R, Boucher JP, Paquette JA, et al (Zoetis)

- Single SC dose (peak blood levels ~day 5, half-life ~11 days)
- Duration of suppression of pruritus

Dose	Duration of suppression of pruritus
0.125 mg/kg	14 days
0.5 mg/kg	28 days
2 mg/kg	52 days

- @ 1 mg/kg the serum concentration is above EC₅₀ for 28 days in 88% of dogs

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Proof of concept efficacy and safety study of an anti-IL-31 mAB for the treatment of atopic dermatitis in client-owned dogs
 Michels GM, Ramsy DS, Mahabir S, et al (Zoetis)

- 78 dogs in 6 practices, dosed q 14 days x 2 and assessed by owners (PVAS) and DVMS (CADESI-02) over 42 days
- mAB treated dogs significantly greater reduction in PVAS
- Adverse events: vomiting, diarrhea, lethargy – none serious

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Development of RT-PCR to detect *Sarcoptes scabiei* in canine samples

Zewe CM, Huyng K, Lam A, et al (Tufts)

- Superficial skin scrapings
- Paraffin-embedded skin biopsies
- RT-PCR positive for detection r16S DNA of *S. scabiei* via amplification of a 60bp product
- Uniform and consistent peaks for known positive cases
- No amplification detected in negative samples



Taqman qPCR for diagnosis of dermatophilosis in horses

Frank L, Kania SA, Bemis DA, et al (UT)

- Targeted mannose-6-phosphate isomerase gene
- Compared cytology and qPCR for 14 horses with clinical lesions suspicious of dermatophilosis, 12 horses with other lesions and 7 healthy horses

	Positive qPCR	Positive cytology
Suspected cases	11/15	9/15
Other derm lesions	0/14	0/14
Healthy horses	0/7	0/7



Antibacterial effect of acetylcysteine on common canine otitis externa bacterial isolates

May ER, Stainbrook KA, Bemis DA (UT)

- In vitro test 10⁵ CFU/mL bacterial suspension
- used 50 microL/well
- Serial dilutions of acetylcysteine (10% solution = 100 mg/mL)

Bacteria	MIC for acetylcysteine
<i>S. pseudintermedius</i>	9.7 mg/ml
<i>P. aeruginosa</i>	10.3 mg/ml
<i>Corynebacterium spp</i>	7.9 mg/ml
<i>β-hemolytic Streptococcus spp</i>	8.3 mg/ml



Influence of sexual gender and reproductive status on Fel d 1 concentration in the fur of domestic cats

Marcuz LW, Farias MR, Canivato ME et al (Brazil)

- Fel d 1 is responsible for 90% of allergic reactions to cats
- Measured concentrations in fur of 66 cats (22MC, 12 MI, 20 FS, 12 FI)
- Male (3.12 ug/g) > Females (2.24 ug/g)
- Neutered (3.12 ug/g) > Intact (1.57 ug/g)



Evaluation of the effectiveness of an allergen modulating solution on the minimization of Fel d 1 concentration in the fur of cats

Marcuz LW, Farias MR, Cavinato ME, et al (Brazil)

- Solution with hydrolyzed collagen, allantoin, panthenol and aloe vera gel versus water applied to coat and allowed to dry naturally
- Fur collected T0, one hour and 7 days after tx
- NEITHER treatment had a significant effect on Fel d 1 concentrations



Influence of coat length, gender and reproductive status on the concentration of Can f 1 in the coat of dogs

Paulo MR, Farias MR, Cavinato ME et al (Brazil)

- 20 MC, 20 MI, 20 FS, 20 FI dogs enrolled
- Coat vacuumed 2 minutes
- ELISA used to measure fur concentration of Can f 1
- No significant differences attributed to gender, neutering or coat length

Long coat 1.28 ug/g	Short coat 1.33 ug/g
Females 1.34 ug/g	Males 1.15 ug/g
MC 1.22 ug/g	MI 1.11 ug/g




Patient adherence patterns for veterinary ASIT

Tater KC, Cole W, Pion PD (VIN)

Number of animals tested	Number started on ASIT	Number that order refill (≥ 1)
Dogs: 2683	769 (28.7% of those tested)	495/769 (64.4% of those starting)
Cats: 128	21/128 (16.4% of those tested)	14/21 (66.7% of those starting)


Only 18.1% of patients tested began ASIT and completed at least one refill order



Deep pyoderma caused by *Burkholderia cepacia* complex in dogs associated with ciclosporin administration in dogs: a case series

Banovic F, Koch S, Robson D, et al (Raleigh NC, St. Paul MN)


- *Burkholderia cepacia* are gram-negative bacilli that have been associated with nosocomial infections in humans, often MDR
- Record search identified 6 dogs with Bcc-associated deep pyoderma; all MC, 4/6 Westies, all on CsA
- Pyogranulomatous dermatitis with multifocal folliculitis and furunculosis, primarily on trunk
- Discontinuation of CsA and treatment with TMS, FQ (marbofloxacin, Cipro) or doxycycline → remission



Suspected zinc-responsive dermatosis in 9 Boston terrier dogs

Lee FF, Bradley CW, Mauldin EA (U Penn)

- Clinical lesions = hyperkeratotic plaques, thick scales on haired skin of dorsal muzzle (5/9), margins and concave pinnae (8/9), hocks (2/9) and elbows (1/9)
- Age of onset 1-24 months (median 3.5 mo)
- Skin biopsy findings = severe hyperkeratosis (compact with interwoven parakeratosis), infundibular hyperkeratosis, serum lakes (5/9)
- 4/5 treated with zinc supplements improved
- 1/3 treated with salicylic acid 6.6% improved
- 1/1 treated with retinoin cream 0.1% improved



Use of fluconazole monotherapy or in combination with potassium iodide in 4 cats with sporotrichosis refractory to itraconazole

Farias M, Pereira AV, Sechi GV, et al (Brazil)

- These four cats had been treated with itraconazole 18.2-25 mg/kg/day for 3 months with poor response
- Therapy changed to fluconazole 9-12.5 mg/kg/day
- After 4 months 2/4 cats had clinical cure; other 2 cats had potassium iodide 5.0 mg/kg/day added to their treatment; after 6 months one clinically normal and one euthanized
- Continued treatment for 2 months past clinical cure



Canine epidermolysis bullosa acquisita: a retrospective study of 20 cases

Bizikova P, Linder KE, Wofford JA et al (NC State)

- Lesions: tense vesicles/bullae and deep erosions/ulcers of oral cavity (19/20), pinnae (16/20), axillae (15/20), foodpads (14/20)
- Biopsy: subepidermal vesicles, collagen VII autoreactivity
- Median age 1.2 years, male to female 2.3:1, 11/20 Great Danes, 9/20 first lesions < 1 yr
- 14 dogs responded to immunosuppressive treatment (3/14 glucocorticoids; 11/14 glucocorticoids+other drugs)
- 6 euthanized



Sterile pustular erythroderma of miniature schnauzers: a retrospective study of 7 cases

Lam ATH, Outerbridge CA, Ferrer L (UC Davis)

- All female, 3-11 years
- Truncal erythema progressing to generalized wheals or papules/pustules
- Systemic signs: 4/5 lethargy, 2/5 vomiting, 2/5 fever
- Biopsy: intraepidermal, panfollicular neutrophilic and eosinophilic pustulation
- 2 died of respiratory arrest
- 4 treated with CCS and IV fluids, 5 with antibiotics



No prognostic indicators in bloodwork or bx

Clinical and histopathologic features of acute-onset erythroderma in dogs with GI illness

Cain CL, Bradley CW, Mauldin EA (U Penn)

- 17 dogs with acute-onset erythematous macules or generalized erythema: 3/17 miniature schnauzers, 2/17 Labs, 2/17 pugs
- Vomiting 16/17, hematochezia 10/17 preceded skin lesions by 1-11 days (mean 4.4)
- Mild to moderate hypoalbuminemia (8/17)
- Mild to severe eosinophilic dermatitis
- 4 dogs had IBD, 3 dogs had pancreatitis, 3 had food allergies, 3 had possible adverse drug reactions
- Treatments: drug withdrawal (15/17), antihistamines (15/17), corticosteroids (13/17), GI protectants (12/17)
- GI signs resolved 1-13 days (mean 4.6) and skin lesions in 8-30 days (mean 19)



Efficacy of gel compound containing ethanol, guar, triclosan and glycerin (PawCare) on bacteria and yeast loads in canine pododermatitis

Ortalda C, Noli C (Italy)

- 18 dogs with ≥ 2 paws affected
- Acetate tape preps to ID yeast and swabs for bacterial culture to culture obtained pre and immediately after application of PawCare
- 8 dogs positive for Malassezia, mean counts decreased from 7.25 to 3.88/ 10 fields
- 21 bacterial isolates, counts decreased by an average of 1.4 log counts for dogs with high # of bacteria, 7 dogs with lower bacterial #s had no growth post treatment



Itch Symposia

Candace Sousa (Zoetis)

- Pruritus = an unpleasant sensation of the skin provoking the desire to scratch or rub it
- Scratching or biting may remove the stimulus, acute itch is a warning signal, scratching may elicit feeling of well-being for the animal
- Visual Analog Scale is a tool for owner assessment of itching with scale of 0-10



Visual Analog Scale for Pruritus

The visual analogue scale

On the following line, draw a mark at the point you think your dog's level of itching lies

Itching includes scratching, biting, licking, chewing, rubbing

Extremely itchy – scratching, chewing, licking or rubbing constantly

Not itchy – not scratching, chewing, licking or rubbing more than a normal dog



Itch Symposia

Candace Sousa (Zoetis)

- Mediators of pruritus
 - Histamine (4 types of receptors H1R, H2R, H3R, H4R -- H1R and H4R associated with pruritus)
 - Substance P (neurokinin receptors 1 to 3 have roles in transmission of pruritus)
 - Interleukins (IL-31 induces severe pruritus and cutaneous inflammation; is secreted by Th2 cells, mast cells, monocytes and dendritic cells)
 - PAF, LTB4, TXA2, serotonin and TLR7 may also have roles



Quality of Life in Veterinary Dermatology

Noli C (Italy)

- Quality of Life (QoL) questionnaires
 - VAS Pruritus scores correlated with QoL of dogs and their owners
 - Weaker correlation of CADESI-03 and QoL scores
 - 73% of owners consider that AD has impact on QoL of their dogs and 48% impact on QoL of owners
 - Affects on behavior, mood, playing, working, sleeping of pet
 - Burden on owner of treatments



Vasculitis and other Ischemic Dermatopathies

Pucheu-Haston CM (LSU)

- Clinical syndromes
 - Rabies vaccine associated vasculitis (localized or generalized)
 - Facial vasculitis/arteritis (philtrim, nasal cartilage; most common in St Bernards and Scottish Terriers)
 - Cutaneous and renal vasculopathy (greyhounds, Great Danes; verotoxin produced by *E. coli* may have role)
 - Vasculitis associated with SLE
 - Familial canine dermatomyositis (collies, shelties, others)
 - Proliferative thrombovascular necrosis of pinnae (Dachshunds, Rhodesian ridgebacks)



Vasculitis and other Ischemic Dermatopathies

Pucheu-Haston CM (LSU)

- Diagnosis
 - Skin biopsies
 - Review history of previous treatments/vaccinations
 - CBC, biochemical profile, UA
 - ANA
 - Serum titers for tick-borne diseases
 - PCR for other infectious agents (*Borrelia*)
- Therapy
 - Pentoxifylline 15-30 mg/kg BID to TID
 - Vitamin E
 - Doxycycline + Niacinamide
 - Corticosteroids, Cyclosporine, Azathioprine, Dapsone, Sulfasalazine, Chlorambucil
 - Topical tacrolimus



Demodicosis—What is New?

Mueller RS (Germany)

- 3 types in dogs: *Demodex canis*, *D. injai*, *D. corneii*
- Factors predisposing to disease: hereditary, short hair, poor nutrition, stress, estrus, endoparasites, other disease, drugs
- Diagnosis via skin scrapings or trichograms
- Treatment options: amitraz, ivermectin (not if MDR1/ABCB1 mutation), milbemycin, moxidectin, doramectin, afoxolaner, fluralaner



Other Topics Discussed

- “Fast Track to Multidrug Resistance”
- Biology of Cat Flea/Understanding Speed of Kill
- Biofilms, wounds and chronic infections
- Ticks, Tick-Borne Diseases in North America
- AMPs structure, function, future potential
- Papillomavirus associated diseases in horses
- Viruses in dermatology—Humans & Animals
- Nutrition and skin barrier function
- Guide to home-cooked diets



Other Topics Discussed

- Feline sporotrichosis
- Anesthesia for dermatologists
- Unraveling the mysteries of hypothyroidism
- Immunosuppressive therapy
- Mechanisms of autoimmunity
- Creepy crawlers (mites)
- Feline immune-mediated skin diseases
- Otitis-treating tough case
- Immunohistochemistry
- Cryosurgery
- MRSA and the environment
- Others



<http://www.vetdermbordeaux.com>