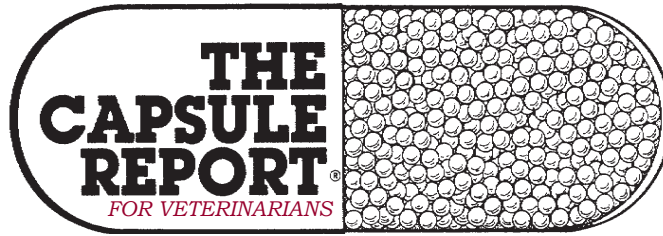


"Pearls"  
of  
Veterinary Medicine



Trusted By  
The Profession  
Since 1981

Volume 34, Number 2

May 2015

### Topical serum for melting ulcer

When a melting ulcer is suspected, antiproteinase and anticollagenase (i.e., antimelting) therapy is strongly recommended to prevent further stromal loss. Several antiproteinases are available for veterinary ophthalmic use. These include N-acetylcysteine, EDTA, oral tetracyclines, and autologous serum. Autologous serum contains what is considered the most effective inhibitor of anticollagenase activity. Therefore, if a melting ulcer is suspected, frequent topical ophthalmic application of autologous serum is highly recommended. Finally, autologous serum also contains factors that may reduce discomfort. One drop of the autologous serum should be applied every 1-2 hours initially during medical therapy. These drops can be reduced to every 4 hours once proteolytic activity has been halted and the corneal tissue becomes healthier, usually between 48 and 72 hours after initiation of aggressive medical therapy. Hospitalization for the first 24-48 hours is indicated for administration of intense medical therapy and monitoring of the patient for worsening condition. Clients should be informed to tip the nose of the patient as high as possible and to place a drop onto the ocular surface (conjunctiva or cornea). Opening the eyelids is not recommended, as this can cause excess ocular pressure, possibly leading to globe rupture if a deep ulcer is present. The multi-dose vial can be used as a reservoir for any remaining serum, which can be stored safely for up to 7 days if refrigerated.

Amy Knollinger, DVM, DACVO  
NAVC Clin Brf, Feb 2015

### Dosage of fish oil

For support of all organ systems other than joints, the dose on a metabolic BW basis is in the range of 115-140 mg/kg<sup>0.75</sup> of combined EPA and DHA per day. This equates to approximately 65-79 mg/kg/day of combined EPA and DHA for a 10 kg dog. If one does not calculate based on metabolic body weight, then a good target dose is: 40 mg of EPA per kg of BW; 66 mg of combined EPA and DHA per kg of BW. The dose for joint health is 50

mg of EPA per kg of body weight and above. Duration of supplementation for full effect may range from 4-12 weeks. Flaxseed or flaxseed oil is not predictably metabolized enough to EPA/DHA to recommend its use to achieve comparable effects.

Kenneth W. Kwochka, DVM, DACVD  
Music City Vet Conf, 03:14

### Treating fungal otitis

Antifungal agents are required in any case complicated or caused by the yeasts, *Malassezia* or *Candida* or dermatophytes. Some products that appear effective in vitro are not always effective for *Malassezia* clinically. This can be seen most commonly with nystatin (Panalog) and to a lesser degree Thiabendazole (Tresaderm). Clotrimazole is one of the most commonly used antifungal/antiyeast agents and is found in many brand name products. It is often highly effective but on occasion there will be non-responsive *Malassezia* cases. The author finds topical 1% miconazole (Conofite lotion) to be very effective. Even more resistant *Malassezia* cases can be treated by **adding a crushed 200 mg tablet** of ketoconazole to the miconazole products. Miconazole should usually be combined with a topical glucocorticoid, as straight miconazole can be irritating when applied into the ear.

Wayne Rosenkrantz, DVM, Dipl. ACVD  
West Vet Conf, 02:13

### Valuable Information Inside

AHS guidelines; P 3
Albuterol toxicosis; P 2
Analyzers, quality control of; P 2
Atopy, new understanding of; P 3
Avian, venipuncture; P 4
Corneal ulcer, serum for; P 1
Diarrhea, chronic, cat; P 3
Ephedra/ma huang toxicosis; P 3
Fish oil, dosages; P 1
Flea allergy, cat, ruling out; P 4
Generic drugs, profitability of; P 1
Heart disease and respiratory rate; P 2
Herpes and cats; P 2
Hyperadrenocorticism, a clinical disease; P 4
Otitis, etiology; P 2
Otitis, fungal, treating; P 1
Parasite control, profitability of; P 2
Phenobarbital, weaning off; P 4
Pyoderma; P 3
Vaccination, Dobs and Rotts; P 4

### Profitability of generic drugs

There have been some misconceptions about where veterinary generics might add value in terms of practice profitability. On an apples-to-apples comparison, if the generic version is cheaper than the pioneer version, and standard markup pricing is applied, then the hospital has less revenue and **less profitability using the generic**. The client does benefit from the lower price, but if standard pricing models are used equally on both products, the sale of the generic delivers less revenue on a per-unit basis and less profit for the hospital. This lower client price is unlikely to change prescribing behavior or

# The Capsule Report.

compliance; if a pet needs medication for 14 days, the veterinarian does not prescribe 21 days of generic medication just because it is cheaper, so the deficit is typically not made up on volume. As an example: If brand A cost \$0.50 and the markup is 2.5, the retail price of the tablet is \$1.25. If 30 were dispensed, the client cost would be \$37.50 and the gross profit to the veterinarian would be \$22.50. On the other hand, if a generic were prescribed at a cost of \$0.35 with a markup of 2.5, the tablet would sell for \$0.88. If 30 were dispensed, the client cost would be \$26.40 and the gross profit to the veterinarian would be \$15.90.

*Lowell Ackerman, DVM, DACVD, MBA, MPA  
Clin Brf Supp, 03:14*

## Profitability of parasite control

In this survey, it was noted that 90% of U.S. pet owners want to hear about local spikes in pests such as disease-carrying ticks and heartworm-transmitting mosquitoes. Pet owners are willing to open their wallets, too, with 89 percent saying they likely would schedule an appointment to get their pet tested if a heightened parasite risk was communicated. Keeping clients better informed about parasite threats could be a financial turning point for veterinary practices. The survey's sponsors forecast that a two-doctor practice that informed clients about urgent parasitic risks in their home county and delivered related services could generate from \$163,000 to \$789,000 a year in extra revenue, depending on the level of pet owner response.

*Ken Niedziela  
Vet Pract News, Mar 2015*

## All cats have Herpes

Although a slight over-statement, working under this premise will lead to the correct diagnosis and treatment of the vast majority of superficial ulcers in cats. In fact, statistics have shown that 80% become carriers and 50% spontaneously shed virus. There are three facts that make this such a common cause of ocular disease in cats of any age. First, the high incidence in cat populations; second, treatment does not eliminate the virus from the cat; and third, stress from any number of causes results in relapse or recrudescence of a latent infection. Corneal ulcer in a cat? Think herpes!

*Kerry L. Ketring, DVM, DACVO  
Mich Vet Conf, 01:14*

## Etiology of otitis

This author's top three underlying etiologies once *Otodectes*, foreign body, and neoplasia with the otic examination are eliminated, include adverse food reactions, environmental allergies, and hypothyroidism. Hypothyroidism causes a ceruminous otitis externa with alterations in cerumen lipid composition to low levels of free fatty acids in surface lipids along with increased levels of surface triglycerides, which both in turn acts as fodder for the microorganisms. The bacteria and/or yeast are also

allowed to propagate and establish an infection in hypothyroid patients as a result of the compromised immune system. Other clinical symptoms of hypothyroidism may or may not be noted, hence a thyroid profile is often used to support the clinical diagnosis and establish a basis for supplementation. It has been reported that up to 24% of adverse food reaction patients present with otitis externa as their only clinical complaint. It behooves us therefore, to consider a dietary restriction using limited ingredient novel or hydrolyzed protein sources in patients with recurrent otitis externa. Environmental allergies should be a serious consideration in a patient that started with a history of seasonally recurrent otitis externa. Allergy testing and immunotherapy or symptomatic medical management may result in control of the otitis externa without the need for otic therapy.

*Anthony Yu, DVM, MS, DACVD  
West Vet Conf, 02:13*

## Quality control of analyzers

Instituting proper maintenance and quality control (QC) procedures of in-clinic analyzers is critical; however, additional QC procedures are often necessary to ensure reliable laboratory results. Practitioners must establish a competent person to be primarily responsible for the instrumentation. Placing individuals with minimal medical expertise in charge of instruments from which patient data is generated could compromise patient care. The QA and laboratory standards committee of ASVCP has established recommended criteria for QA of in-clinic analyzers. For specific references, visit [asvcp.org/about/committees/qas.cfm](http://asvcp.org/about/committees/qas.cfm).

*Johanna Rigas, MS, DVM, DACVP  
NAVC Clin Brf, Mar 2015*

## Resting respiratory rates and heart disease

Many veterinary cardiologists recommend that owners of dogs with subclinical cardiac disease monitor the respiratory rate of their dogs to help identify the onset of left-sided congestive heart failure or monitor the effectiveness of treatment. Results of this study involving 190 dogs with subclinical left-sided heart disease suggest that sleeping and resting respiratory rates are easily obtained by most clients in the home environment and that mean sleeping respiratory rate was generally <25 breaths/min. The authors suggest that **sleeping respiratory rates consistently >30 breaths/min warrant additional investigation.**

*Dan G. Ohad, DVM, PhD, DACVIM et al.  
JAVMA, 243:6*

## Albuterol toxicosis

Albuterol toxicosis is common in dogs because dogs tend to chew on albuterol-containing inhalers and the liquid vials used in nebulizers. Since the ventricular tachycardia in albuterol toxicosis occurs from overstimulation of beta receptors, both beta-1 and beta-2 are involved. Propranolol works well to treat these signs. Propranolol is a nonspecific beta-blocking agent, which means it can block both beta-1 and beta-2 receptors. Therapeutic doses range from 0.02 mg/kg, slowly IV,

up to a maximum of 0.1 mg/kg in dogs and cats; 0.1-0.2 mg/kg, orally in dogs up to a maximum of 1.5 mg/kg, every eight hours, and 2.5-10 mg total in cats every 8-12 hours.

*Brandy R. Sobczak, DVM  
Vet Med, Mar 2015*

## A new understanding of atopy

Although allergen-specific IgE has been considered very important in the pathogenesis of atopic dermatitis, it is not essential to the development of the disease. In unpublished studies using an experimental model of canine atopic dermatitis, production of allergen-specific IgE could, in some dogs, be decreased below levels that are considered positive according to the guidelines provided by the manufacturer of the allergy test used. Despite this, those dogs would still flare up with atopic dermatitis once exposed to the allergen. Thus other, ***non-IgE mediated pathways can be important in some individuals***. This form of the disease is called intrinsic disease in human medicine. This is to differentiate it from the more classic, extrinsic form, in which allergen-specific IgE is present. Clinically, the two forms are not distinguishable and there is speculation that the intrinsic form could just be an early phase of the extrinsic form. The knowledge that this can occur in veterinary medicine changes the way we handle atopic dogs. Thus, it is possible to have dogs in which other pruritic causes of dermatitis have been properly ruled out and a clinical diagnosis of atopic dermatitis is established and yet a negative allergy testing occurs. Certainly the patient can be tested at another time of the year and with other allergens, but it is important to remember that the negative test does not rule out the clinically established diagnosis of atopic dermatitis. Since no allergens can be detected to place in the allergy vaccine, these individuals are particularly difficult to manage.

*Jenise C. Daigle, DVM, DACVD  
MI Vet Conf, 01:14*

## Chronic diarrhea in the cat

The cat should be supplemented with parenteral cobalamin if indicated. This author supplements cats with serum cobalamin concentrations <400 ng/L. The only reliable way to diagnose dietary intolerance/allergy is to perform a dietary trial. If the cat has failed to respond to a trial with an "intestinal" diet the next step is to feed a novel protein or hydrolyzed antigen diet. If the cat will eat one of these diets they should be fed exclusively. Gastrointestinal disease usually responds more quickly to a successful dietary trial than dermatological disease, but the trial should last for a minimum of 3 weeks. Another option that can be helpful in some cats with diarrhea is to feed them a high protein low carbohydrate diet. Consider a ***therapeutic trial with tylosin or metronidazole*** for dysbiosis. Cats with chronic enteropathies have been shown to have a different intestinal microbiota than healthy cats. However, it is controversial if dysbiosis in cats is a primary disease or if it occurs

secondary to another disease process. The author routinely performs a tylosin trial in dogs with chronic diarrhea but does not do so with cats. However, some cats with chronic diarrhea respond to tylosin but not to other medications including prednisolone. Other cats have responded well to probiotics but not to other medications.

*Jonathan Lidbury, DVMS, DACVIM  
19<sup>th</sup> Tex A&M Fel For, Apr 2015*

## Ephedra/ma huang toxicosis

Compounds containing ephedra, or ma huang, can cause alpha- and beta-adrenergic stimulation at doses as low as 5-6 mg/kg. Clinical signs of tachycardia, restlessness, agitation, hypertension and seizures can occur within 30 minutes to 7 hours of ingestion. Death has been reported at doses as low as 10-12 mg/kg. Treatment consists of GI decontamination, phenothiazine tranquilizers to treat dysphoria, agitation and hypertension, and beta-blockers to treat tachyarrhythmias. The administration of diazepam can worsen dysphoria, and should be avoided. Propofol can be administered to control seizures. Cyproheptadine (1 mg/kg dissolved and administered per rectum) can be administered to control dysphoria.

*Elisa M. Mazzaferro, MS, DVM, PhD, DACVECC  
West Vet Conf, 02:13*

## Pyoderma

Sixty seven percent of recurrent pyoderma is a result of hypersensitivity. Bacteria, yeast and self trauma all contribute to persistent inflammation in chronic skin lesions. Therefore, one of the most important considerations in the treatment of the allergic pet is to control microbial "flare factors". Antibiotics must be used judiciously, however, as multidrug resistant organisms are becoming more and more prevalent. Topical antimicrobial treatment is preferred for mild infections. This author likes 4% chlorhexidine scrubs for local areas of infection, especially for the paws. When systemic antibiotics are used, one needs to ensure that treatment is thorough; appropriate doses and duration of treatment is critical. Accordingly, when skin infections do not clear with appropriate treatment, one must consider the possibility that 1) the problem is not infectious or 2) the pruritus is overwhelming the ability for the antibiotics to take hold or 3) that there is an additional competing factors such as hormonal disease, drug reactions, immune disease or tumors, or 4) bacterial resistance; bacterial culture is recommended in these cases "**T-shirt therapy**." Interestingly, this is one of the author's most effective treatments for atopic dermatitis. It is amazing how many patients feel better with this simple treatment.

*Stephen Waisglass, D.V.M., MRCVS, CertSAD, DACVD  
West Vet Conf, 02:13*

## Following the AHS guideline

When a dog tests positive for heartworm, the American Heartworm society (AHS) protocol includes a 60-day

---

pre-treatment phase during which dogs are administered doxycycline and two doses of a monthly heart-worm preventive prior to beginning melarsomine injections. This phase is vital, but waiting can be difficult for caring owners who want treatment to be immediate. The goal of pretreatment with doxycycline is to reduce the pulmonary pathology that results when the adulticide is administered, while administration of a heartworm preventive reduces new infections and eliminates existing susceptible larvae. In addition, worms between 2 to 4 months of age can mature during this time frame to a point where they will be more susceptible to melarsomine. As a member of the AHS board, this author strongly supports its tenets of year-round heartworm prevention and annual heartworm testing, as well as the AHS guidelines for heartworm treatment.

*Elizabeth Clyde Druin, DVM  
NAVC, Clin Brf, Mar 2015*

### Weaning patient off phenobarbital

“When should I decrease the phenobarbital dose or wean a patient off phenobarbital, and how do I do this?” There are several reasons to decrease the phenobarbital dose or wean a patient off phenobarbital: 1. Patient is seizure-free for one year; 2. Side effects of phenobarbital are affecting patient’s quality of life (polyuria, polydipsia, polyphagia, ataxia); 3. Patient develops liver disease; 4. Patient develops an idiosyncratic blood cell dyscrasias; 5. Patient is being switched from phenobarbital to another anticonvulsant. There is no set rule for how to wean a patient off phenobarbital. The key is to slowly wean them off rather than stopping it abruptly. Stopping phenobarbital abruptly could result in rebound (withdrawal) seizures. Most patients can be safely weaned off phenobarbital over a 3-6 month period by decreasing the dose 10%-20% every 2 weeks. Ideally, serum phenobarbital concentrations should be checked every month after weaning starts. Phenobarbital can be safely stopped once the serum concentration reaches 10 µg/mL. The phenobarbital dose can be decreased more rapidly in patients that develop severe hepatotoxicity from phenobarbital. In this situation, the dose can be reduced by as much as 25% a week, or in rare instances stopped abruptly.

*Jared B. Galle, DVM, DACVIM  
MI Vet Conf, 01:14*

### Vaccination in Dobermans and Rottweilers

**FICTION:** The initial vaccination series in Dobermans and Rottweilers should be continued until 20 or 24 weeks of age. **FACT:** Today, most authors agree that these breeds do NOT have a uniquely higher risk of acquiring parvovirus following exposure nor are they more likely than any other breed to fail to be immunized following parvovirus vaccine administration. The high disease incidence and the frequency of vaccine failures recognized in the late 70’s and early 80’s is not considered to be a concern today.

*Richard B. Ford, DVM, MS, DACVIM, DACVPM (Hon)  
Music City, Vet Conf, 03:14*

### Ruling out flea allergy in the cat

The best way to rule out flea allergy is by response to flea control. This author often uses a nitenpyram (Capstar) trial in which the drug is given every other day for 30 days. Every other day is recommended because the ability of Capstar to kill adult fleas persists for 48 hrs. only. If flea allergy is the cause of the disease, the cat will improve within a month, and then regular flea control using a topical flea preventive or oral Comfortis can be used. It is very important that all animals in the home be treated for fleas every 30 days throughout the year. Certainly steroids can be given to relieve the itch. This author often will use prednisolone for the first two weeks of the Capstar trial, then stop the steroid. If the itch comes back while the cat is still taking Capstar, flea allergy is ruled out. For cats that do not take oral medication well, one could use either selamectin (Revolution) or imidacloprid/moxidectin (Advantage Multi) every 2 weeks for 3 treatments. This approach will rule out ear mites and Cheyletiella as well.

*Valerie A. Fadok, DVM, PhD, Dipl. ACVD  
West Vet Conf, 02:13*

### Venipuncture in the bird

Blood pressure in birds is higher than in mammals, and elevates more markedly with stress. Many people apply pressure to the venipuncture site for a full 30-60 seconds after withdrawal of the needle. While this helps impede seepage of blood from the vein, the restraint needed also causes the blood pressure to stay elevated, increasing the likelihood of continued bleeding. Therefore, some practitioners, (if no obvious venous laceration has occurred), will elect to replace the bird in its cage immediately after venipuncture is completed.

*Teresa L. Lightfoot, DVM, DABVP  
Music City Vet Conf, 03:14*

### Hyperadrenocorticism, a clinical disease

Medical management of dogs with pituitary dependent hyperadrenocorticism primarily consists of treatment with mitotane or trilostane. Treatment of Cushing’s disease should **only take place in patients showing clinical signs**. Remember, Cushing’s syndrome is a clinical disease. Always ask clients about the signs they are seeing at home. If they are not demonstrating any clinical signs consistent with Cushing’s disease, do not go forward with treatment regardless of the testing results. Treatment is not benign—and the risks of treatment generally outweigh the risks of not treating in a non-clinical patient.

*Todd Archer, DVM, MS, DACVIM  
Music City Vet Conf, 03:14*

The **index for Volume 33** is now available at our website.

Older indexes are also available.