C/E for the one who doesn't have time for C/E

"Pearls" of Veterinary Medicine

THE CAPSULE REPORT® FOR VETERINARIANS

Trusted By The Profession Since 1981

Volume 34, Number 7 October 2015

Meat in pet foods

Myth: Real meat should be the first ingredient in pet food **Reality:** Ingredients on pet food labels are listed in descending order of weight of raw materials prior to processing. When meat is listed as an ingredient, it contains water and fat, while meat meal is the meat (of beef, pork, etc.) with the water and fat removed so it is a dehydrated and concentrated source of protein. Poultry meal is chicken, duck, or turkey with the water and fat removed. Therefore, meat meal or chicken meal will weigh less than the meat or chicken itself and will be listed further down on the label. More importantly, the amino acid profile of the protein ingredients and overall diet matter more than the order of the individual ingredients. Key point: As long as the amino acid requirements of animals are met, it does not matter if one particular ingredient is listed first on the label.

Melinda A. Wood, DVM, MS, Dip ACVIM
So Cal VMA Pulse, Aug 2015

Corneal ulcers – no 3rd eyelid flaps

Grade IV ulcers are Grade III ulcers that have progressed deeper into the corneal stroma, approaching Descemet's. Medical therapy is often of limited benefit. Surgery is the best option for salvaging the eye and retaining vision. What can you do with the proverbial client that has limited financial resources? Number one, ***do not consider a third eyelid flap***. In veterinary school many years ago, we were taught to perform a third eyelid flap as a therapy for corneal ulcers. Years ago that information was incorrect and it continues to be incorrect. The reasons for not doing a third eyelid flap are: 1) They hide the ulcer from being examined. 2) They provide a dark, moist, CO2 enriched environment-perfect for good bacterial culture. 3) They do not support the wound-a space exists between the third eyelid and the cornea. 4) They do not contribute blood supply or fibroblasts to the wound. 5) They may reduce treatment efficacy. What can you do if third eyelid flaps are contraindicated? The author has had good success with a combination of 1% cyclosporine solution, BID, topical fluoroquinolones (Ocuflox, Ciloxan), TID, and atropine, BID combined with systemic NSAIDs. While medical therapy alone is not as effective as surgery, the prior outlined therapy is far more effective than the archaic technique involving a third eyelid flap.

William W. Miller, DVM, Dip ACVO
SW Vet Symp, 09:13

Valuable Information Inside

Antivenom

$F(ab')_2$ antivenoms have been developed and are currently under investigation for use in human and veterinary medicine. The author has personal experience administering a significant amount of $F(ab')_2$ antivenom to dogs and cats. This antivenom can be purchased from the Instituto Bioclon (Mexico) and imported for experimental use, with a permit from the USDA in companion animals. There are other $F(ab')_2$ antivenoms that can be imported from Costa Rica and other regional areas. It is the author's opinion that $F(ab')_2$ antivenom is safe and effective for use in small animals. It is the least expensive option for antivenom at this time and it reconstitutes quickly.

Raegan J Wells DVM, MS, Dip ACVECC
AVMA Conf, 07:14

Status epilepticus

Diazepam (0.5 mg/kg) can be administered IV, intranasally, or rectally to control seizures. The dose can be repeated twice, if necessary. Anticonvulsant action only lasts about 15-30 minutes, and therefore some form of longer acting therapy is required for the seizures to stop. Midazolam can be substituted for diazepam in this scenario, and lorazepam (0.2 mg/kg) may also be considered. These drugs may also be administered IV or intranasally, but are not likely to be effective with rectal administration. In addition, unlike the others, midazolam can be successfully administered intramuscularly. If the animal responds to a benzodiazepine bolus, phenobarbital may be considered for longer-term control. Naive animals not previously receiving anticonvulsants can be loaded with 16-20 mg/kg, divided into 4 doses and administered every 30-120 minutes (i.e., 4-5 mg/

The Capsule Report® is published monthly for veterinarians who wish to maintain high standards of practice

kg q 30-120 minutes). Epileptics already receiving phenobarbital may benefit from an additional "mini-loading dose" (5-10 mg/kg) depending on their serum levels of the drug. Phenobarbital should be continued ar regular maintenance intervals (2-3 mg/kg, IV, IM, or PO, q12h, or at the animal's regular dose) after this.

Christopher L. Mariani, DVM, PhD, Dip ACVIM
124th SD VMA Conf, Aug 2015

IBD vs. lymphocytic lymphoma

Differentiation between severe IBD and lymphocytic lymphoma (LL) is confounded by similarities in patient history, overlapping GI signs, unpredictable clinical course, and even histopathologic findings (H&E stain) in affected cats. Accurate diagnosis can be realized through assessment and testing, however, these tests may not be available or may be cost prohibitive. Some clinicians recommend using a combination drug protocol that may induce clinical remission in cats with either IBD or LL. Combined chlorambucil and prednisolone chemotherapy protocols have been established for cats with LL. Dosage - Prednisolone at 5-10 mg, PO, once a day; chlorambucil at 2 mg PO, every 2-3 days, or 20 mg/m^2, every 2 weeks. An overall response of 95% with a 56% complete response rate (i.e., 100% resolution of clinical signs and detectable tumor) was observed in one study (i.e., 2 mg of chlorambucil every 2-3 days, plus prednisolone) with a median remission duration of ~900 days. A separate investigation using a higher chlorambucil dose (i.e., 20 mg/m2, every 2 weeks) achieved 95% complete remission response rate, with a median remission time of 26 months.

Albert E. Jergens, DVM, PhD, Dip ACVIM
Plumb's Ther Brf, Sep 2015

Shock, what fluids to use

When treating a dog or cat in hypovolemic shock, a decision should be made whether crystalloids, colloids, blood products or all three should be used for the initial resuscitation. This decision will primarily depend on the packed cell volume and total protein of the patient at presentation. If the TS (and therefore COP) is low, edema is possible and may be exacerbated by the administration of crystalloid fluids. Therefore, in this situation the author often uses synthetic colloids as resuscitation fluids instead of crystalloids, because crystalloid fluids will cause significant additional decreases in colloid osmotic pressure. If the TS is less than 4 g/dl, most patients will benefit from colloids as all or part of the shock bolus. The primary advantages of colloids in hypovolemic shock are twofold: first, they rapidly increase intravascular volume; and second, due to their high molecular weight almost all of the volume administered tends to remain within the vascular space. In contrast, because of the rapid redistribution of 75% of administered crystalloids into the interstitium, four times the amount of crystalloids (compared to colloids) need to be infused to expand the intravascular space. Thus, in dogs, the shock dose of crystalloids is 60-90 ml/kg (45-60 ml/kg in the cat), which equals one blood volume. This can be compared with a canine shock dose of colloids of 15-20 ml/kg (10-15 ml/kg in the cat). If both crystalloids and colloids are used together, then the crystalloid dose should be reduced by 40%. Thus, relatively small volumes of colloid need be used compared to crystalloid, for a similar cardiovascular effect.

Lesley G. King, MVB, Dip ACVECC, Dip ACVIM
61st HI VMA Conf

Diagnosis of canine demodicosis

Canine demodicosis is best diagnosed by multiple deep skin scrapings. Trichography may also be helpful from difficult to scrape areas (paws and interdigital spaces, or periocular region) as mites may be pulled from the follicles with hairs. Trichography is not as sensitive for diagnosis as deep skin scrapings. Recently, a technique of ***applying acetate tape*** to lesions, then squeezing the skin, has been reported to be more sensitive for diagnosis of demodicosis than deep skin scrapings. Biopsy for histopathology may be necessary for diagnosis in deep, fibrotic lesions, or in Chinese Shar-Peis.

Christine L. Cain, DVM, Dip ACVD
AVMA Conf 07:13

Determining dogs with ivermectin sensitivity

"Dogs with an ivermectin-sensitive genotype (e.g., herding breeds, sight hounds) should not receive extralabel macrocyclic lactone therapy (e.g., ivermectin, doramectin, moxidectin) because of risk neurotoxicosis." The following should have been addressed in reference to the previous statement: • An ivermectin-sensitive genotype does not exist. The genotype the author refers to is the *MDR1* 4-base-pair deletion mutation *(ABCB1-1D).* An ivermectin-sensitive *phenotype* would be more accurate and describes the physical characteristic associated with a gene variant. • That herding breeds and sighthounds should not receive extralabel macrocyclic lactones at doses is misleading when one considers that many herding and sighthound dogs would tolerate these drugs. For example, the only sighthound breeds documented to have the *MDR1* mutation (and the ivermectin-sensitive phenotype) are Silken Windhounds and Long-Haired Whippets. Additionally, the allele frequency of the *MDR1* mutation in some breeds is low (<5% for Old English Sheepdog, Border Collie, German Shepherd), therefore macrocyclic lactones can be used safely and effectively in most of these dogs. • Veterinarians and owners can determine a dog's *MDR1* genotype to determine definitively whether or not that particular patient can safely be treated with macrocyclic lactones. More information regarding the *MDR1* genotype and how to test to determine if macrocyclic lactones can safely be used in a patient is available at the Veterinary Clinical Pharmacology Laboratory at Washington State University (vcpl@vetmed.wsu.edu/vcpl.)

Katrina Mealey, DVM, PhD, Dip ACVIM, Dip ACVCP
NAVC Clin Brf, 12:8

Uncomplicated superficial corneal ulcers

Initial management is directed at identifying the initiating cause, preventing bacterial infection, reducing the discomfort of secondary uveal spasm, and preventing self-trauma. Topical chloramphenicol, triple antibiotic, or tobramycin solutions, preferred for their negligible epithelial toxicity, should be applied 4 times daily. If the ulcer is accompanied by pupillary constriction, topical 1% atropine is applied judiciously to dilate the pupil. Due to the long half-life of atropine's effects, a single application may be sufficient. Overzealous use of atropine reduces tear production which will then impact healing. Brachycephalic patients will benefit from frequent application of topical lubricants such as I-Drop Vet Plus (http://imedpharma.com) or Optixcare (www.aventix.ca) or over-the-counter Celluvisc and Genteal gel. An Elizabethan collar is recommended to prevent self trauma. Topical corticosteroids are contraindicated as they inhibit epithelial migration and mitosis, decrease stromal fibroblastic proliferation, limit inherent antimicrobial defenses, and potentiate cornea enzymatic activity which can lead to rapid deepening of the ulcer. Topical NSAIDs may also delay corneal healing and have been associated with devastating ulcer progression in septic human ulcers.

Mary B. Glaze, DVM, MS, Dip ACVO
61st HI VMA Conf, 11:14

Adjusting the dose of furosemide

Always titrate furosemide to the lowest dose that controls clinical signs. Once the patient is out of congestive heart failure and is clinically normal, it ***is important to gradually taper furosemide to the lowest dose*** that maintains the resting respiratory rate in the normal range. The process should be gradual and it is important that the owner thoroughly understands the process. For example, if a 10 kg dog is sent home (after hospitalization to stabilize congestive heart failure) on 20 mg furosemide 3 times a day, after 3 days of the owner obtaining regular resting or sleeping respiratory rates the dose can be decreased to 20 mg, twice daily. If there is no change in the breathing rate after 5 days, the dose can be further reduced to 12.5 mg, twice a day and potentially again to 10 mg, twice daily in another 5 days if there is still no change in the breathing rate. The owner should carefully monitor the breathing rate throughout this process so if there is an increase in the RR, they can increase to the last furosemide dose used. Keep in mind the variable forms in which furosemide is marketed so that it is easier for the owner (and you) to choose the lowest possible dose. In addition to the veterinary products (12.5 and 50 mg), the human product comes in a 20, 40, and 80 mg size tablet. Also, there is a pediatric elixir (10 mg/mL), which can be very helpful for dosing small patients.

Meg M. Sleeper VMD, Dip ACVIM
AVMA Conf, Jul 2015

Pemphigus foliaceus vs. dermatophytosis

Clinically and histologically, pemphigus foliaceus and dermatophytosis have many similarities. Acantholytic cells are one of the histologic characteristics of pemphigus foliaceus in a skin biopsy, but dermatophytosis can also produce acantholytic cells. Since these two diseases are treated totally differently—one with immunosuppressives, the other with antifungals—it is important to rule out dermatophytosis before starting corticosteroids or other immunosuppressives for pemphigus foliaceus. Special stains used on the skin biopsy samples can help rule out dermatophytes, but a fungal culture is important to include in your work-up when you are diagnosing pemphigus foliaceus. It would be deleterious to use immunosuppressives in a patient with dermatophytosis as its immunity is already compromised. Also consider the public ramifications of missing a diagnosis of dermatophytosis. If you are not an expert at reading your own fungal cultures, submit them to the laboratory.

Alice M. Jeromin, RPh, DVM, DipACVD
DVM News Mag, Jun 2015

Protecting your online reputatiion

The AVMA has developed a new resource to help veterinary practices manage their online reputation, guidance for monitoring the practice's online reputation, tips on when and how to respond to online criticism, and recommendations for dealing with cyberbullies. The page on best practices outlines measures for protecting a veterinary practice's online reputation and reducing the risks of complaints or attacks. These measures are in the areas of good business practices, communications in the clinic, and taking ownership of a practice's online presence. The page on cyberbullying gives an overview of the problem in veterinary medicine. Sections offer arguments against taking down the practice's Facebook page and recommendations for what to do during and after the crisis. The "Managing Your Online Reputation" resources are available to AVMA members at http://jav.ma/lWjDcse.

JAVMA, Sep 15, 2015

Chronic diarrhea in the cat

Some clients will decline intestinal biopsy procedures for financial or other reasons and some cats may not be stable enough to tolerate anesthesia and biopsy. If this is the case, once parasitism, other infectious diseases, extra-intestinal disease, and diet responsive diseases have been ruled out, the two most common differential diagnoses that remain are IBD and small cell lymphoma. Therefore, it is ***reasonable to perform a prednisolone trial treatment***. Cats with IBD or small cell lymphoma often have a positive response to this medication so it is important to council clients about both these two possible diagnoses.

Jonathan Lidbury, DVM, Dip ACVIM
19th Fel For, Tex A&M CVM

Selenium sulfide shampoo

Selenium sulfide is a common ingredient in some

human dandruff shampoos and is sometimes recommended for dogs with skin disease or "flaky skin" or "dandruff". Selenium is keratolytic and keratoplastic by reducing epidermal turnover and impairing disulfide bridge formation in keratin, but has marked detergent, irritant and drying effects. It can cause ***rebound increases in sebum production*** and sometimes skin irritation, thus resulting at times in a dog with even greasier skin. The author rarely uses this shampoo as there are many other choices with better outcome in dogs.

Joel Griffies DVM, Dip ACVD
AVMA Conf, 07:13

Non-Core vaccines

Give them based on risk/benefit analysis. Decide which non-core vaccines need to be given. It is the author's recommendation that when Leptospira or Lyme vaccines are given to not start those non-core vaccines until 12 or more weeks of age and don't mix the viral and bacterial vaccines in the same syringe or even inject them into the same site at the same time. As an example, complete the core viral vaccines by 14-16 weeks of age. Then give the non-core vaccines if required starting at 14- 16 weeks of age making sure the two dose non-core vaccines are administered 2-6 weeks apart. If the second core is not given by 6 weeks, start again and make sure the interval between doses is 2-6 weeks!

Dr. R.D. Schultz
SD VMA Conf, Aug 2015

Effexor toxicosis in the cat

Venlafaxine (Effexor) is a bicyclic antidepressant. It is available as both immediate release and extended release medications. While it is rare for cats to willingly ingest medications, cats seem to readily eat venlafaxine, and appear particularly attracted to the extended-release capsules. Doses as low as 2-3 mg/kg can cause signs of serotonin syndrome. Mydriasis, vomiting, tachypnea, tachycardia, ataxia and agitation are the most common signs. Treatment would consist of emesis in asymptomatic individuals. Activated charcoal can be administered with a repeated dose in 4-6 hours if an extended release formulation was involved. Heart rate and blood pressure should be monitored. Acepromazine may be used for the agitation, and cyproheptadine (2-4 mg per cat, PO, or rectally) may be useful in antagonizing the serotonin effects. With ingestion of the extended release medication, cats can be symptomatic for up to 72 hours. Venlafaxine is lipid soluble, so ILS may help to decrease plasma levels and decrease treatment time. Liposyn, or any other 20% lipid solution, can be given through a peripheral catheter. A bolus of 1.5 ml/kg is given, followed by 0.25 ml/kg/min for 30-60 minutes. This is repeated in 4 hours if the serum is clear.

Sharon Gwaltney-Brant DVM, PhD, Dip ABVT, Dip ABT
AVMA Conf, 07:13

Rabbit tips

Rabbits will respond to nail clippers that are compressed too high by retracting their foot. When the clippers are placed distal to the nerve and vessel, they do not retract the foot. So clipping nails is a two-step process: apply pressure, if no response, cut! If a rabbit is anesthetized or moribund, the jugular vein is the best choice for obtaining a blood sample. In the awake rabbit, the lateral saphenous vein supplies adequate volume in all but the smallest and/or most dehydrated rabbits, and is VERY well tolerated by the patient.

Teresa L. Lightfoot, DVM, Dip ABVP
Music City Vet Conf, 02:14

Anesthesia issues

Alaskan Malamutes, Siberian Huskies and Labrador Retrievers have a genetic polymorphism that predisposes these breeds to a high incidence of opioid-related dysphoria. Problems related to opioid use in those breeds tend to be individualistic; however, it is advisable to use lower doses, especially in Nordic breed dogs. Opioid dysphoria in any breed (or species) can be reversed using naloxone. Post-anesthesia related feline blindness (deafness) was reported as early as 2001. Unlike the dog, which has two arterial blood supplies to the brain (internal carotid and basilar arteries), cats have only one cerebral blood supply (maxillary artery). Spring-loaded mouth gags, used during procedures requiring mandibular extension (dentals) in cats can result in ***obstruction of the maxillary arterial blood flow*** causing cerebral ischemia, central blindness, and/or deafness.

Andrew Claude, DVM, Dip ACVAA
AVMA Conf, Jul 2015

Diets for chronic kidney disease

Maintenance diets are not adequate for pets with stage II-IV CKD, mainly due to the phosphorus content of these diets. Some have suggested their use plus a phosphate binder, although the evidence the author has for the success of this strategy is lacking. Moreover, feline maintenance diets are usually acidifying, so, their use together with a phosphorus binder will not address this problem. One common doubt in these cases is when to start a therapeutic diet, especially in cats. Clinical studies suggest that patients with CKD from stages II to IV will benefit of the use of renal diets. The longer we delay the start, the harder the transition can be, since animals who already present clinical signs might be more reluctant to change. In patients with stage I, unless they are proteinuric, there is usually no indication to change the diet, although choosing a maintenance diet with moderate phosphorus content (<2 g/1000 kcal) is a reasonable and safe recommendation. It is recommended at this time that proteinuric patients be fed a protein restricted diet.

Cecilia Villaverde, BVSc, PhD, Dip ACVN, Dip ECVCN
AVMA Conf, 07:14