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THE CAPSULE REPORT On Animals

Small Animal/Exotic Edition

Our 32nd Year

Volume 33, Number 1 April 2014

Pet harnesses being tested

Subaru of America Inc. and the nonprofit Center for Pet Safety announced results of a study on car harnesses for dogs. Crash tests revealed serious flaws in many of the harnesses currently on the market. Subaru and CPS enlisted MGA Research Corp. to conduct crash testing of various car harnesses, using dog models. CPS designed the dog models, which represented a 25-pound terrier mix, a 45-pound Border Collie, and a 75-pound Golden Retriever. Sleepypod's Clickit Utility Harness was the only harness in the study that kept all three dog models from launching off the seat. Complete study results are available at centerforpetsafety.org.

JAVMA, Dec 15 2013

Feeding the cat

One risk factor for obesity in cats is the preferred feeding method of many cat owners: free-choice dry food. There are several reasons that this feeding method is ***not appropriate for many cats,*** particularly indoor, neutered, inactive cats. First is the risk of overeating, which, even in small amounts, can cause the cat to exceed its appropriate caloric intake and gain weight. The second problem is that control of intake is essential for neutered cats because they have an altered hormonal balance that results in increased appetite and decreased energy expenditure rate. A further problem with this feeding method is that it is impossible for owners to determine a cat's daily food intake, and one of the best ways for owners to assess the health status of their cats — especially in multicat households — is to monitor their appetite and intake. Subtle signs of illness may be easily missed with free-choice feeding. Finally, because free-choice feeding requires cats to consume dry food, it creates two other potential problems — reduced water intake and a preference for dry food only. Cats normally consume a large portion of their water in their diet and often do not adequately compensate for the absence of water in dry food. Cats fed dry foods have to drink at least 2 ml of water per gram of dry food consumed.

Debra L. Zoran, DVM, PhD, Dip ACVIM
Nestlé Purina Vet Symp Procd

INSIDE THIS ISSUE

Long-term use of NSAIDs

Often, the clinical approach to a young or middle-aged dog with osteoarthritis (OA)-associated pain is to avoid the use of NSAIDs. The rationale often quoted for this approach is that the practitioner wants to "save the use of NSAIDs for later, and not have a dog on NSAIDs for the whole of its life." This is a ***flawed and rather naive approach.*** If pain is not alleviated, adverse effects on the musculoskeletal system occur (muscle wasting; decreased muscle, ligament and tendon health), leading to decreased joint support, and increased pain – and so the downward cycle continues. Thus, predictable pain relief prevents the early deterioration of the musculoskeletal system. However, NSAIDs (which are providing predictable pain relief) usually do not have to be used for the rest of the dog's life. Use of NSAIDs that extends for several months allows increased exercise and weight control or reduction, and these two factors can result in significant and sufficient pain relief to allow the NSAIDs to be discontinued.

B. Duncan X. Lascelles, BSc, BVSC, PhD, MRCVS, CertVA,
West Vet Conf Procd, 02:12

Effect of gonadectomized Vizslas on cancer and behavior

This study, which was conducted with data from a survey of health conditions in 2,505 Vizslas, revealed that gonadectomized dogs had significantly higher odds than did sexually intact dogs of having mast cell tumor, hemangiosarcoma, lymphoma or lymphosarcoma, all other cancers, all types of cancer combined, or behavioral disorders, regardless of the age at which the dog was gonadectomized. The two exceptions were that male dogs gonadectomized at ≤12 months of age did not have a higher risk of developing hemangiosarcoma and dogs gonadectomized at >6 months of age did not have a higher risk of developing a behavioral disorder, other than fear of storms. In addition, for gonadectomized dogs, regardless of age at gonadectomy, the age at diagnosis of mast cell cancer; cancers other than mast cell cancer,

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hemangiosarcoma, and lymphoma or lymphosarcoma; all cancers combined; behavioral disorders diagnosed after gonadectomy; or fear of storms, the onset was significantly earlier than for sexually intact dogs.

M. Christine Zink, DVM, PhD et al.
JAVMA, Feb 1, 2014

Xylitol facts

Surprise! Xylitol appears in products you'd never suspect. At Pet Poison Helpline, this author has discovered that xylitol, a sweetener that causes hypoglycemia and hepatic necrosis in dogs, is showing up in some very unexpected places. New products on the market such as nasal sprays, OTC sleep aids, multivitamins, prescription sedatives, antacids, stool softeners, smoking-cessation gums and other products may contain unexpectedly large amounts of xylitol. Dogs that ingest these products face a double risk—not only may poisoning result from the active ingredient but also from the xylitol. Because of its sweet taste and plaque-fighting properties, it is frequently used as a sugar substitute in chewing gum, breath mints, and dental products like toothpaste and mouthwash. In general, for most chewing gums, the amount of xylitol is often clinically insignificant if it's listed as the fourth or fifth ingredient. If it's listed as one of the first three ingredients, extreme caution should be taken. The toxicity of xylitol is dose-dependent. The dose necessary to cause hypoglycemia in dogs is approximately 0.1 grams/kg, while the amount needed to cause hepatic necrosis is approximately 0.5 grams/kg. Most chewing gums and breath mints typically contain 0.22 to 1.0 gram of xylitol per piece of gum or per mint. Therefore only one piece of gum may result in hypoglycemia in a 10-pound (4.5-kg) dog.

Ahna Brutlag, DVM, MS, Dip ABT, Dip ABVT
DVM News Mag, Feb 2014

Pimobendan in Dobermans

About 25%-50% of purebred Doberman Pinschers eventually develop dilated cardiomyopathy (DCM). This study was designed to see if pimobendan can prevent congestive heart failure (CHF) or sudden death in Dobermans with preclinical DCM. Dogs were randomized to receive either pimobendan (median dose 0.453 mg/kg/day) or placebo in a 1:1 ratio. A Holter recording was repeated after initiation of the test medication. The primary endpoint evaluated was either the onset of congestive heart failure (CHF) or sudden death. Dogs in the pimobendan group reached the primary endpoint much later than those receiving placebo (718 days vs. 441 days, respectively), although the proportion of dogs reaching each component of the primary endpoint was similar between the two groups. Median survival time was also significantly longer among those in the pimobendan group (623 days) compared with those in the placebo group (466 days). Dogs with higher heart rates on physical examination as well as those with evidence of >4 ventricular premature complexes on a 3-minute ECG were 7 times more likely to reach the primary endpoint first after adjusting for the effect of treatment. The **take-home message was that** pimobendan given to Dobermans with preclinical DCM delays onset of clinical signs and extends survival.

N.J. Summerfield et al.
J Vet Inter Med, 2012; 26(6); (Vet Med, 108:6)

Treating demodicosis long enough

As with so much else in dermatology, it is not which therapy to choose that is the *Ultimate Question,* but when therapy can be discontinued. Because Demodex is hard to kill and induces immunosuppression once established, the goal of therapy is not simply clinical resolution of signs. Stopping at that time is frequently associated with relapses. Rather, our goal is reduction of mite numbers to zero, or at least to undetectable levels. Demodicidal treatment must be monitored regularly. The standard approach is to continue acaricidal therapy until 2 deep skin scrapings a month apart have revealed no mites...that is, no eggs, juveniles, adults, dead mites,... nothing. Because the author typically uses a slow increase of ivermectin, and rarely has had a negative scraping after 30 days, the first skin scraping is usually performed 60 days after initiating therapy, and then continues to scrape monthly until 2 consecutive scrapings are completely negative. Unless the owners have an exceptionally large supply (they're cattle farmers, or bought a quart from the Jeffers catalog,) the author typically continues the ivermectin until the dispensed amount is gone - just to make extra sure of resolution. Some dogs with adult-onset demodicosis have no detectable underlying predisposition, yet relapse whenever treatment is withdrawn. In this case, long-term treatment may be necessary. Tapering the dose by reducing the frequency is the best way to do this. Reduce to every other day for one month, then twice weekly for a month, once weekly for a month, etc. This author has had patients who maintain well at 600 µg/kg, PO, q14days.

Gregory Griffeth, , DVM
Penn Vet Conf, 03:12

Tree tea oil toxicosis

Tea tree oil (TTO) is marketed for cleaning hair, healing hotspots, and treating some skin allergies in dogs and cats, but the concentration of TTO in most skin care products is low (0.1 %-1%). Because undiluted TTO can be used topically without causing adverse effects in most people, some owners may knowingly or accidentally use 100% TTO to treat various skin conditions in their dogs and cats. Results of this study indicated that use of 100% TTO in dogs or cats to treat various health conditions can lead to ***serious clinical signs,*** including signs of CNS depression, paresis, ataxia, and muscle tremors. Younger and smaller body weight cats are at

greater risk of developing major clinical effects from TTO. Until more studies are available to determine the safety and efficacy of 100% TTO, its use in dogs or cats is not recommended.

Safdar A. Khan, DVM et al.
JAVMA, Jan 1, 2014

Fluoroquinolones

The bactericidal effect of "dose-dependent" antibiotics is based on how high the concentration is above MIC and is less influenced by how long the drug remains above MIC. Fluoroquinolones and aminoglycosides are the classic "dose-dependent" antibiotics. Dosing around MIC or slightly above is a big mistake, not only does this reduce probability of success, but dosing in this range produces selective pressures that result in higher rates of mutation and rapid selection for resistant strains. Microbiologists refer to this as the "mutant selection window." Ideally fluoroquinolones are dosed at levels that exceed the "mutant prevention concentration," the effective level above selection for mutations and resistant strains. In general, for fluoroquinolones, ***push the dose as high as the patient and owner can tolerate*** and give it once a day.

John C. Angus, DVM, Dip ACVD
DC Acad Vet Med, 04:13

Dosing trilostane

Although the manufacturers recommend once daily dosing, some clinicians feel that twice daily dosing provides better control. This author personally finds that once daily administration is effective in most patients, and is easier for the majority of pet owners. The author only starts at twice daily in dogs with diabetes mellitus, as transient hypercortisolemia prior to the next dose may confuse diabetic regulation. Trilostane should be given in the morning. Follow-up ACTH stimulation tests must be performed at specific times, and evening dosing confuses this issue. The published starting dose range is 3-6 mg/kg, SID. In the author's experience, most dogs are acceptably controlled on 2-3 mg/kg daily, and this is the range used. If twice a day dosing is planned, this daily dose is simply divided in two. The drug is presently available in 10, 30, 60 and 120 mg sizes. If a patient is close to the cut off, the author will usually round the dose down. It is safer to start at a low dose and slowly increase as necessary. Big dogs in particular seem to be quite sensitive to trilostane, and the author rarely starts patients at more than 60 mg total daily dose. This personal observation is supported by one study, in which dogs >30 kg required significantly less trilostane on a mg/kg/day basis.

Dr. Audrey K. Cook
Vet Derm For, 04:13

Acquiring Immiticide

The only treatment on the U.S. market for heartworm infection in dogs, Merial's Immiticide, has been in short supply for 2 1/2 years now. The FDA announced Dec. 3, 2013, that it will continue to allow Merial to import some Immiticide from the company's European supplier. Merial's U.S. supplier also recently manufactured a small amount of the drug. The FDA and Merial are asking veterinarians to conserve supplies by using the drug ***only for dogs in most urgent need of treatment.*** Since mid-2011, the U.S. supplier faced technical difficulties in manufacturing Immiticide. The supplier decided to close the facility where it made the drug. Merial is pursuing other options, but securing approval of another manufacturer will take time. The product from the European supplier has a normal period before expiration. For the European product, Merial will provide a copy of the U.S. package insert with each shipment. Immiticide is available only directly from Merial. Veterinarians who identify dogs that require heartworm treatment can request the product by calling 888-637-4251, option 1.

JAVMA, Feb 1, 2014

Thromboprophylaxis therapy in IMHA

Ultra-low-dose aspirin is an additional adjunctive treatment to consider for clot prevention. Aspirin irreversibly inhibits platelet function through inhibition of cyclooxygenase. One study demonstrated a significant improvement in short- and long-term survival in dogs given a combination of glucocorticoids, azathioprine, and ultra-low-dose aspirin. The authors hypothesized that ultra-low-dose aspirin provided effective thromboprophylaxis, resulting in increased survival. This study had a number of limitations, including being a retrospective study without standardized treatment protocols. Therefore, the true contribution of the aspirin to the improved survival rate is unknown. Since the addition of such a low dose of aspirin (0.5 mg/kg, SID-BID) does not appear to adversely affect patients with IMHA, and some evidence exists to support its use, this author generally adds it to treatment regimens upon discharge of the patient.

Brandi Garcia, DVM, Dip ACVECC
80th AAHA Conf

Immune mediated hemolytic anemia

Dogs with IMHA are typically red cell depleted but not volume depleted and therefore packed red blood cells, rather than whole blood, is the blood product of choice for restoring red blood cell number. The thought that blood transfusions potentially "fuel the fire" of hemolysis has been disproven. Studies show that blood transfusions have a favorable effect on survival and patients with IMHA who receive packed red blood cells have a statistically longer survival than those who don't. Based on this evidence a patient who is clinical for anemia should be given a transfusion.

Renee K. Fenty, DVM, Dip ACVECC
So Cal VMA Pulse, Jan 2014

Value of Rivalta test in FIP diagnosis

The Rivalta test relies on the formation of a precipitate when a fluid sample from an effusion is added to acetic acid. For FIP diagnosis, many European countries rely on the Rivalta test. Although it is a simple in-clinic test, it does not add any significant information to that which one may receive from determining a high protein level using a refractometer ± cytology. Its use should be limited to clear fluids, and it is most accurate in cats <2 years of age. Its value may be in its high negative predictive value (i.e., if a negative Rivalta result is found on a clear cavity fluid, FIP is highly unlikely). Serum albumin:globulin ratios <0.45 with peripheral lymphopenia, lack of toxic change in neutrophils, and high fluid protein are highly suggestive in the diagnostic puzzle of FIP.

Margie Scherk, DVM, DABVP
NAVC Clin Brf, 11:12

Switching from allergy injection to sublingual

It is easy to switch a patient from injections to drops. Three possible situations exist. 1) If the patient has had no response to allergy injections, the author recommends the standard protocol, starting sublingual immunotherapy (SLIT) with the lowest-concentration bottle and escalating. 2) If the patient is stable and has been doing well with the injections (perhaps the owner is just tired of giving them), you can typically start directly with the maintenance vial of SLIT, with no need for the escalation phase. 3) If the patient is being switched to drops because of an adverse reaction to allergy injections, the author recommends cautious administration of the lowest-concentration vial at first. If there seems to be any adverse reaction or worsening, reduce the concentration even further. At this time, the ideal total duration of treatment is not known in dogs. In people, daily administration is continued for 2-5 years. After this time, if the patient is stable, treatment can be discontinued, and the effect appears to be permanent in nearly all cases. Whether that is true in dogs is unknown.

Douglas J. DeBoer, DVM, Dip ACVD
Vet Med, Jan 2014

Warming blood units

Warming refrigerated units is only necessary in neonates, hypothermic patients, or patients receiving large blood transfusion volumes. Warming RBCs may lead to membrane damage and hemolysis and should be avoided; blood should not exceed 37°C (98.6°F) in any instance. The unit can be brought to room temperature for 10-15 minutes without active warming, but for no longer, as doing so may result in bacterial growth.

Alexandre Proulx, DVM and Lori S. Waddell, DVM, DACVECC
NAVC Clin Brf, 10:3

Fish oil for heart disease

Fish oil, which is high in omega-3 fatty acids, reduces inflammatory cytokines and may have modest benefits for appetite. Fish oil (rather than flax or cod liver oil) should be used and a good quality brand should be used since there is little regulation of dietary supplements. The dose used by the authors is enough fish oil to provide 40 mg/kg eicosapentaenoic acid (EPA) and 25 mg/kg docosahexaenoic acid (DHA). For cats, a 1-gram capsule containing 180 mg EPA and 120 mg DHA can be easily used to provide this dose when given as one capsule per cat per day. Specific brands can be found on the Tufts HeartSmart website: **www.tufts.edu/vet/heartsmart.**

Lisa M. Freeman, DVM, PhD and John E. Rush, DVM, MS
N Amer Vet Conf, 01:13

Calculating CRI dosages

Here is a simple recipe: the classic MLK drip for dogs. To make it up, you would add to a 1 liter IV fluid bag the following three drugs: * 120 mg of morphine (8 ml if your concentration is 15 mg/ml); * 1000 mg of lidocaine (50 ml if your concentration is 20 mg/ml); * 400 mg of ketamine (4 ml if your concentration is 100 mg/ml). Alternatively, you can replace the morphine by ***either one*** of the following mu opioid agonists: * 24 mg of hydromorphone (12 ml if your concentration is 2 mg/ml) (this is called an HLK drip); * or 1.2 mg of fentanyl (24 ml if your concentration is 0.05 mg/ml) (this is termed an FLK CRI). To deliver 1 ml/kg/h of fluids, then all you have to do is enter the patient's weight in kg as the fluid rate. Depending on your patient's needs, you can double or triple this fluid rate.

Phil Zeltzman, DVM, Dip ACVS
Vet Pract News, 25:6

IV insulin CRI protocol

Dogs: 2.2 u/kg of regular insulin is added to 250 ml 0.9% NaCl. Cats: 1.1 u/kg of regular insulin in 250 ml 0.9% NaCl; If blood glucose is: >250 mg/dl, administer 10 ml/hr, 200-250 mg/dl–7 ml /hr; 150-200 mg/dl–5ml/hr + 2.5% dextrose; 100-150 mg/dl–5 ml/hr + 2.5% dextrose; <100 mg/dl–stop insulin + 2.5% dextrose; <60 mg/dl–notify doctor and administer 0.5 g/kg dextrose, bolus.

Erica L. Reineke, VMD, Dip ACVECC
VECCS Symp Procd, 04:13

Chronic enteropathy, comparing two treatments

Results of this study suggested that a chlorambucil-prednisolone protocol is more efficacious for treatment of chronic enteropathy (CE) and concurrent protein-losing enteropathy (PLE), compared with an azathioprine prednisolone combination. The group treated with chlorambucil improved in all criteria examined while receiving primary treatment. Dogs with CEs with secondary PLE might benefit from treatment with chlorambucil-prednisolone instead of azathioprine-prednisolone.

Julian R. Dandrieux, dr med vet, Dip ACVIM et al.
JAVMA, 242:12