

A digest of practical and clinically relevant information from this month's journals and proceedings



Small Animal/Exotic Edition

Our 30th Year

Volume 31, Number 12

March 2013

Caregiver placebo effect

In this study, a caregiver placebo effect was common in the evaluation of response to treatment for osteoarthritis in both pet owners and veterinarians. Force platform gait analysis allowed an objective outcome measure for evaluation of lameness in dogs with osteoarthritis. Quantifying the caregiver placebo effect is important because treatments may be perceived as more effective than they are. In fact, if we accept the presence of a caregiver placebo effect, it **may be that the success rates of many interventions for osteoarthritis in dogs are overstated.** This is because a medication effect can be defined as the response after administration of a drug minus the placebo response. This may not be routinely considered when reporting the success rate of an intervention to a student, pet owner, or colleague. In view of the authors' results, a caregiver placebo effect should be considered when interpreting owner and veterinary reports of patient response to treatment. Overlooking a caregiver placebo response can lead to increased patient morbidity and increased financial and time burden on the caregiver, and it diverts resources away from treatments that may benefit the patient. The caregiver placebo effect for dogs with osteoarthritis appears to be ~57% for owners and 40%-45% for veterinarians when they are questioned (owners) or visually evaluate (veterinarians) a dog's lameness.

Michael G. Conzemius, DVM, PhD and Richard B. Evans, PhD
JAVMA, Nov 15, 2012

Hemostasis, hold the pressure

A **classic mistake** is to apply too much pressure, especially under stress. Too much pressure completely occludes the blood vessel, which prevents platelets and clotting factors from reaching the bleeding site, and prevents formation of a fibrin clot. Appropriate pressure may be all you need if the blood vessels are small enough. How much pressure to apply is an art form, which is acquired with experience. You need just enough compression and time to stop bleeding. Another classic error is to rub surgical sites with gauze squares, which can dislodge microthrombi from the lumen of

blood vessels, and cause them to bleed all over again. Therefore, we should gently blot a surgical area, and never rub.

Phil Zeltzman, DVM, Dip ACVS
Vet Pract News, Dec 2012

Gorilla Glue toxicity

It is non-toxic, but it can still be deadly due to the fact that it is a polyurethane glue that instantly expands 4-10 fold within an hour of being in contact with gastric fluids. It can **expand to the entire shape and size of the stomach** and cures to a hard, clumpy mass that cannot exit through the pylorus. If a free clump happens to pass into the intestinal tract, then it can cause a GI tract obstruction. Since it cures to such a hard texture, it also rubs and irritates the GI mucosa until it is surgically removed. Gorilla Glue is an emerging nuisance as far as household products go. In fact, NAPCC reports a 300% increase in its ingestion since 2002. Dogs chew on the bottles, as it is reported to taste like peanuts and maple syrup, while cats ingest it while grooming it off of their fur. Vomiting should not be induced, as the hard mass must be surgically removed via gastrotomy/enterotomy.

Colleen Willms-Cook, DVM, Dip ACVECC
Tex A&M CVM ER Conf Procd, 10:10

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In-home hospice care franchise

This is a report of a franchise operating with 34 doctors in 13 states. Lap of Love Veterinary Hospice provides in-home palliative care for patients between terminal illness and euthanasia. Doctors are trained in all facets of the business and they are supported in their new venture. Veterinarians are trained through online videos and audio resources. Franchise applicants must be compassionate, empathetic and have excellent personal skills to be successful hospice and euthanasia providers. Veterinarians selected are paid on average \$150-\$200 per appointment based on the demographics of their area, travel and additional services requested by the client. The partners of Lap of Love also created a Web-based practice manage-

The Capsule Report.

ment system called "Sunshine" that's designed strictly for veterinary hospice and euthanasia practices. For more information about Lap of Love, go to lapoflove.com.

DVM News Mag, Dec 2012

Cerenia

Cerenia is administered as a once-daily injection (0.45 mg/lb, SQ for dogs), which is a significant advantage over many other antiemetic drugs, and has a rapid onset of action. Maropitant is also available in tablet form for outpatient use, which makes it a very attractive choice for use in small animal practice. It is the drug of choice for dogs with motion sickness. The issue of stinging on injection: Information from clinical experience and studies over the last year indicates that there is less likelihood for stinging to occur with maropitant injections when the product is kept refrigerated. The current guidance is that the solution should be kept refrigerated and drawn up and injected right away at refrigerated temp. The recommended dosage for cats is Injectable: 0.25-0.5 mg/lb, SQ or IV (give SLOWLY if administering IV) Oral: 0.5 mg/lb. This is the dose recommended for prevention of motion sickness in cats as well; i.e., somewhat lower than the canine dose for motion sickness. Dosing maropitant citrate beyond the label duration was well tolerated in a study involving healthy dogs.

*Todd R. Tams, DVM, Dip ACVIM
Music City Vet Conf Procd, 03:12*

NPI and the veterinarian

Pharmacists are asking veterinarians for National Provider Identifier numbers. In one instance, a pet owner became irate because her veterinarian did not have an NPI number that would have permitted her to get a prescription for \$10 at Wal-Mart. The numbers - a component of Health Insurance Portability and Accountability Act standards for human healthcare - are given to physicians to help prevent fraud in the Medicare and Medicaid programs. Veterinarians are not covered under the HIPAA standards, according to the U.S. Department of Health and Human Services and the AVMA and thus should not need NPI numbers. Some pharmacy software, however, may require an NPI number before a prescription can be filled. There is no category on the HIPAA website that makes it easy for a veterinarian to get an NPI number. If their software will allow it, you can ask pharmacies to bypass the NPI number. You also can apply for a generic NPI number. There is no cost. Apply for the number at www.cms.gov/Medicare/CMSForms/CMSForms/Downloads/CMS10114.pdf.

SCVMA Pulse, Nov 2012

Cytology in dermatology

Allow the sample to dry on the slide for materials to

be Diff Quik stained. Controversy exists with regard to the necessity of heat fixation. This author **rarely uses heat fixation** and sees little to no difference with heat fixation versus none. A recent study evaluated heat fixation of slides obtained from dogs with ceruminous otitis externa and showed no statistical difference. If you do heat fixation hold the slide down over the flame and be sure to wipe smoke residue from the clear surface of the slide if it occurs. Five seconds in each of the Diff Quik stains, rinse in distilled water and blot using bibulous paper and your slide is ready to be viewed at low power (4x or 10x). The sites with the most information may be those that stain blue from protein, or cell nuclei. Select representative areas (the good spots!) to be viewed under 100x using immersion oil. The author uses this technique for all cytology slides as high dry (40x) is not as accurate at identifying the type of bacteria present. A 2002 study demonstrated that the morphology of bacteria present in ear canal cytology samples from dogs and cats could not be determined using the high dry (40x) objective. It is imperative that samples are of uniform thickness when they are rolled out, otherwise focusing up and down is necessary to ensure that important findings are not missed. This is especially important for ear cytology and anal sac material.

*Terese C. DeManuelle, DVM, Dip ACVD
13th Tri-State Vet Derm Conf Procd, 2012*

Ketamine-propofol anesthesia

In this study, total IV anesthesia with a ketamine-propofol combination, with or without dexmedetomidine, appeared to be effective in healthy cats. These short-term infusions produced smooth recovery and adequate analgesia during the postoperative period. The dose of ketamine was 2.0 mg/kg. The dose of propofol was 2.0 mg/kg. The dose of dexmedetomidine was 0.003 mg/kg. This combination was maintained via continuous IV infusion of a 1:1 ketamine:propofol combination (administration rate for each drug, 10.0 mg/kg/hr). Dexmedetomidine added to ketamine diminishes the perception of nociceptive surgical stimuli; the additional analgesia furnished by the α_2 -adrenergic receptor agonist could make this anesthetic protocol more advisable for emergency treatment or for surgical procedures that could result in substantial postoperative pain.

*Giuliano Ravasio, DVM, PhD et al.
JAVMA, Nov 15, 2012*

Tips for evaluating cats with respiratory disease

1) Iatrogenic pneumothorax is **very** common following thoracocentesis in cats with longstanding effusions. Pleural effusion leads to the thickening of the pleura, and this if nicked, will continue to leak air. Recall that normal lung seals quickly. 2) Old cats don't get new onset asthma. Airway disease in cats is a young to middle age cat disease. Cats may cough their entire lives, but barring lifestyle changes (e.g. moving to a different climate or with a smoker) they should not develop cough as geriatric cats. 3) Cold cats have heart failure. While admittedly, cats may be hard to "temp" if they are

stressed, cats that are hypothermic are very commonly in heart failure. 4) Cats that eat well in oxygen are hyperthyroid or have neoplastic disease. Anorexia is common in the stressed/short of breath cat, and finding a cat who is truly devouring the offered food, makes the likelihood of cancer or hyperthyroidism higher.

*Elizabeth Rozanski, DVM, Dip ACVIM
VA VMA Conf Procd, 02:11*

Lactulose as a laxative

Osmotic retention of water in the bowel sustains fecal hydration and subsequently stimulates intestinal motility by increasing intraluminal pressure. Unabsorbed carbohydrate such as lactulose (a nonabsorbable synthetic disaccharide) is an effective osmotic laxative and is useful for the long-term management of recurrent constipation in cats. In addition to its osmotic effects, lactulose is metabolized by gut bacteria to lactic acids and other organic ions that lower colonic pH, which then increases colonic peristalsis. **Lactulose is initially given at a dose of 0.5 ml/kg, q8-12h** and consistently produces a soft stool. Flatulence and watery diarrhea will occur in some patients but is corrected by reducing the dose until a soft stool is produced. Lactulose is an effective adjunct to dietary therapy for the management of recurrent constipation in cats. This drug is said to be readily eaten when mixed with food and may be used long-term without adverse effect.

*Stanley I. Rubin, DVM, MS, Dip ACVIM
91st U IL CVM Fall Conf Procd*

Using cyclosporine (CsA)

For severely pruritic patients consider administering along with prednisone. Since there is a lag period before CsA suppresses pruritus, prednisone can provide excellent relief while waiting. Aim for 5mg/kg SID, but remember to decrease dose in obese patients. CsA is highly lipophilic. Ideally give on empty stomach if at all possible (2 hours before meals), since giving with food decreases absorption. To mediate GI symptoms some dermatologists give with meal for first 10-14 days, and then switch to empty stomach plan. Vomiting appears to be dose dependent and temporary if you can get through the initial weeks. Can combine with ketoconazole to decrease dose (and therefore cost). Ketoconazole at 5-10 mg/kg reduces CsA dose by 50%. Recheck in 4-6 weeks. If patient is doing brilliantly then slowly decrease to every other day dosing. Drop one day per week with every new box of 15 capsules. For example, drop Tuesday. Next box, drop Tu and Th. Next box, drop Tu, Th, and Sat. Next box, drop Tu, Th, Sa, Su (giving only M,W,F). If continues to do well, decrease to twice weekly or even once weekly. If pruritus returns at lower dose, go back to last effective dose and try to decrease again in 3 months. If not achieving expected results, continue once daily dosing until maximal benefit then decrease to every other day; 75% of patients that are clinically improved at 4 weeks will be able to decrease to every other day. Check for gingival hyperplasia (about 1 in 200). Check for warts. For the 1 in 4 dogs that mani-

fest GI disturbances you can stop for 3-4 days, give with meals, restart at lower dose, divided dose BID, or give with antiemetic.

*John C. Angus, DVM, Dip ACVD
San Diego Co VMA Derm Conf Procd, 09:12*

Multidrug resistant Staph

Topical germicidal treatments that have been shown to potentially be effective, even for methicillin-resistant staphylococci, include: 1) 2% chlorhexidine acetate shampoo once every other day. This has been shown to be equivalent in efficacy to 2% chlorhexidine gluconate and 4% chlorhexidine gluconate. Eight dogs with cephalixin-resistant pyoderma were bathed once every other day for two weeks. Five were in remission at the end of this time, and one was improved. Subsequent studies showed that benefits were optimized by using one ounce of shampoo per 30 kg body weight. The authors have had good success with a Tris-EDTA potentiated 4% chlorhexidine shampoo and spray (TrizChlor 4). The bathing is done every 2-3 days with once or twice daily use of the spray to target affected areas. 2) Hypochlorous acid (Vetericyn). This very safe spray can be used once or twice daily for focal lesions (e.g., it can replace the TrizChlor 4 spray noted above). 3) Dilute sodium hypochlorite (bleach), 1/2 cup per 40 gallons of bath water or 3 ml/gallon, used every other day, as a "bath" (5- 10-minute soak). 4) Amikacin: Based on culture results, significant benefit may be achieved with a 10 mg/kg amikacin solution (injectable product diluted in saline), which is used topically on a BID basis. Amikacin is not absorbed in significant amounts from healthy skin. However, when using this drug topically with more open lesional areas, a typical systemic dose should not be exceeded. This is generally 15 mg/kg/day. With this product, as with the treatment of any pyoderma, it is important that the pyoderma be treated until complete remission and a few days beyond.

*Rod Rosychuk, DVM, Dip ACVIM
79th AAHA Conf Procd*

Conservative management of IVDD

Dogs that are in pain only (Grade 1) or that have very mild weakness and pain (Grade 2) may be treated with crate confinement, NSAIDs and pain medications (Tramadol at 1-2 mg, q6-12h, for 2-4 weeks.) Cage confinement means using a small airline crate placed in a quiet room where there is no disturbance. If an animal is still painful with NSAID treatment, this author recommends muscle relaxants such as methocarbamol (Robaxin) at 10-20 mg/kg, PO, TID or diazepam at 2-5 mg, PO, TID for several days. Pain medications such as Tramadol, 2-3 mg/kg, PO, TID-QID or codeine, 1-2 mg/kg, PO, TID-QID can be utilized. Hospitalization of these dogs accomplishes 3 goals for the clinician: you ensure the dog is

rested properly; you can closely monitor your patient for progression; and you can show your client that medical management can work successfully. If clinical signs are not improved after 2 weeks or the dog worsens, definitive diagnosis and surgery should be considered. If the dog improves with cage confinement, continued treatment is indicated for 2 weeks after the animal is clinically normal. Conservative medical treatment should be recommended only if the clinician has great confidence in a presumptive diagnosis of IVDD or a client declines definitive diagnosis and treatment. In the case of an older patient or one that is clinically ill (e.g. anorexia, weight loss, fever, etc.), a more aggressive course of action is warranted.

*John "Jay" McDonnell, DVM, MS, Dip ACVIM
112th Penn Vet Conf Procd*

Corneal scarring

Any wound to the cornea—whether from trauma, disease, or surgery—can result in corneal fibrosis, an important cause of vision loss in dogs. Mitomycin C (MMC) is a genotoxic antibiotic used in human ophthalmology for its antifibrotic effects. Findings from this study suggested that MMC could safely and effectively exhibit clinical utility in minimizing canine corneal fibrosis. This work holds promise, as currently no real tools other than topical steroids can decrease corneal scarring in dogs. MMC is gaining acceptance as an antifibrotic agent in human medicine, but insufficient safety studies in dogs have precluded its use. While MMC is not ready for mainstream acceptance in companion animals, this study suggests that it will become a safe and effective option; its wide-scale availability likewise makes it a viable option. Further studies examining its use in vivo are needed.

*Ellison Bentley, DVM, Dip ACVO et al.
NAVC Clin Brf, 10:3*

Online cardiology resource

The Cardiac Education Group (CEG) includes board-certified veterinary cardiologists from both academia and private practice. It offers independent recommendations for and provides resources and information on diagnosing, treating, and managing heart disease and heart failure in dogs and cats. Their website (cardiaceducationgroup.org) contains interactive, fun case studies and opportunities for CE credit. Their Learning Center is packed with useful information, such as heart sounds and a radiograph viewer. ALSO, used pacemakers, when people are finished with them, can be donated to veterinary teaching hospitals to be implanted in dogs that need them.

*Heather Lewellen, DVM
Vet Med, Nov 2012*

Domitor in cats

A label indication for use in cats is a new feature of Dexdomitor when compared to Domitor. Although Domitor was used in cats, this was off-label. The dose of dexmedetomidine is approximately 20-40 µg/kg. The

IM route of administration is convenient when handling stressed patients, but intravenous administration will usually result in a faster onset of action. Dexmedetomidine is suitable for various short-term feline procedures, specifically for procedures requiring sedation and/or analgesia but not requiring intubation. The reversal agent atipamezole (Antisedan) is not approved for use in cats, however previous experience with atipamezole **reversal of Domitor in cats suggests it is effective.**

*Kurt A. Grimm, DVM, MS, PhD
Music City Vet Conf Procd, 03:02*

Heartworm, missed doses

All marketed macrolides are safe in Collies when used as directed at preventive dosages. They each have microfilaricidal efficacy and render female heartworms sterile. Hence microfilarial tests for heartworm infection cannot be reliably used in dogs receiving these products. Prophylaxis should be commenced no later than 6-8 weeks of age in endemic areas or as soon thereafter as climatic conditions dictate. Macrolides should be administered precisely as indicated by the manufacturer. If accidental lapses of more than 10 weeks occur, the preventative should be reinstated at recommended doses and maintained for at least 12 consecutive months. In the event of a lapse in preventative administration during a time of known exposure risk, an antigen test should be performed 7-8 months after the last possible exposure to determine if infection has occurred. It is recommended by the AHS and the CAPC that **these agents are used year-around in all areas of the U.S.**

*Clarke Atkins, DVM, Dip ACVIM
36th Royal Canin & OSU Symp Procd*

Use of fluoride

Fluoride plays a minor role in our efforts to combat periodontal disease in dogs and cats. The use of fluoride in human dentistry is widespread, and that is primarily because of its ability to prevent caries (bacterial decay). Since caries are extremely rare in dogs and cats, we must consider the other benefits of fluoride. Fluoride is used as an anti-plaque agent and can also act to desensitize exposed dentin. Many veterinarians also appreciate the pleasant odor, and clients associate a fluoride application with the kind of high-quality dentistry they would expect from their own dentist. As long as the excess fluoride is wiped away from the patient's oral cavity, this author sees nothing wrong with making a fluoride application a standard procedure for dogs and cats after dental prophylaxis, and in fact this is what is done in the author's practice.

*Daniel T. Carmichael, DVM, Dip AVDC
Vet Med, 106:1*