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Uses for trazadone

Trazodone may be useful in alleviating signs of anxiety in dogs on car rides or for veterinary visits. In these cases, the author recommends that owners try the medication at home first, in order to observe their dog's reaction, and time to effect. Doses of 3-7 mg/kg may be used (starting at the low end of the dose range, and increasing as necessary for effect). For ***post-operative exercise restriction,*** Trazodone has been used to facilitate calming in dogs undergoing exercise restriction while healing from surgery, especially orthopedic or neurologic surgical procedures. When using with tramadol immediately post-operatively, a lower dose (3-5mg/kg q12-24h) is used, and this may be increased when the tramadol course is completed.

Margaret E. Gruen, DVM, MVPH, Dip ACVB
AVMA Conf Procd, 8:12

ET tube cuff pressure

Anesthesiologists, as well as critical care unit staff, have demonstrated a prevalent inability to accurately determine intracuff pressure of the endotracheal tube cuff by palpation of the pilot balloon. What's the solution? One solution is a manometer (Olympic Cuff-Safe; www.olympicveterinary.com) to assess the pressure in the "pilot balloon" of endotracheal tubes. Cuff pressure should be maintained between 20 and 30 cm of water. Like a Doppler used to measure blood pressure, it measures pressure intermittently. An alternative is a single-use device called the PressureEasy Cuff Pressure Controller (Smiths Medical; www.smiths-medical.com), designed to continuously monitor tracheal cuff pressure.

Phil Zeltzman DVM, Dip ACVS
Vet Pract News, Mar 2013

Use of ProZinc in the cat and dog

While other product literature or labels for other insulin products advocate replacing insulin vials every month, there are no special requirements to periodically replace ProZinc once the bottle has been punctured under normal use conditions. Veterinarians must therefore take special care to council pet owners in appropriate storage and handling of this product. They should particularly observe the product for any change in appearance and the pet for any change in clinical signs, which are indicators of a contaminated product. Also, while most pet owners know that insulin should be kept in a refrigerator, most owners do not know that freezing insulin destroys it. They should be warned that storing insulin too close to the cooling element in the refrigerator can result in frozen or semi-frozen insulin, which must then be discarded. Although not approved in dogs, ProZinc has been used in canines. A study published in the JVIM in 2012 suggested that this insulin might be an option for some dogs (those not responding to NPH or Lente) and that once daily dosing might also be achieved in some dogs. The recommended starting dose in dogs is 0.5 U/kg SQ, q12h.

Dinah G. Jordan, BSPh, RPh, PrarmD, DICVP
Music City Vet Conf Procd, Mar 2013

INSIDE THIS ISSUE

Aggressive dog, dealing with; P 4
Analgesia, CRI ketamine; P 4
Anemia, erythropoietin; P 2
Charcoal, complications of; P 3
Chloramphenicol, risk; P 3
Diabetes, use of ProZinc; P 1
ET tube cuff pressure; P 1
Feeding tubes, maintaining; P 3
Food trial, what's allowed; P 3
Heartworm therapy, slow-kill; P 1
IBD, budesonide; P 2
Mammary tumors, prognostic factors; P 4
Probiotics; P 2
Propofol, safety in cats; P 3
Rabbits, meloxicam; P 4
Reptiles, substrates for; P 3
Ringworm, novel sampling tool; P 2
Sedating the fearful cat; P 1
Stress in the cat, eliminating; P 4
Trazadone, uses for; P 1

Sedating the fearful cat

When possible, administration of sedative, analgesic, or anti-anxiety medications at home can reduce the stress of car ride, and decrease the cat's arousal at the time of arrival at the hospital. The goal is to reduce stress with these medications; do not expect overt sedation. The following three are listed by the author. **Gabapentin** (~10-20 mg/kg, PO, 60 min before travel/arrival—typically 100 mg per cat) Example: Sprinkle the powder on wet food and add flavor enhancer (FortiFlora). **Buprenorphine** (0.03 mg/kg, oral transmucosal, 60-90 min before travel/arrival). **Alprazolam** (0.125 mg, PO, 60-90 minutes before travel/arrival). Caution: Some cats experience paradoxical anxiety and excitement after alprazolam administration. If alprazolam is chosen, the author strongly urges owners to give a dose of alprazolam several days in advance of the veterinary visit in order to assess their cat's response.

Heidi L. Shafford, DVM, PhD, Dip ACVA
NAVC Conf, Vol 27, Jan 2013

Slow-kill heartworm therapy

Recent data suggests that an aggressive macrolide protocol (ivermectin, given at 6 µg/kg weekly

instead of monthly), coupled with a complex regimen of doxycycline (10 mg/kg/day) will hasten worm destruction, with worm eradication with approximately 9 months' therapy. Furthermore, microfilariae are eradicated more quickly in this manner. This has caused many to invoke the use of doxycycline routinely in the management of heartworm infection in dogs, with a current protocol calling for ivermectin at preventive dosages given monthly (some advocate administering it every 2 weeks for the first 6 months), coupled with doxycycline for 30 days at 10 mg/ kg, BID. The AHS advocates, when melarsomine is unavailable, using preventive monthly and doxycycline at 10 mg/kg, BID, one month on, two months off, etc, until the patient reverts to an antigen-negative status. While there may be a role for this "slow kill" therapeutic strategy in cases in which patient age, financial constraints, or concurrent medical problems prohibit melarsomine therapy, the current recommendations are that ***macrolide therapy not be adapted as the primary adulticidal approach.***

Clarke Atkins, DVM, Dip ACVIM
36th Annual ROYAL CANIN® & OSU Symposium

Probiotics in Vet Med

Probiotic administration is generally considered safe. Risk for causing harmful infection through administration of live probiotic bacteria is a concern but occurs infrequently in humans; instances of probiotic-associated complications (e.g., infection, sepsis) are relatively few and have occurred in individuals with compromised immune systems or with indwelling devices. Poor quality control is a concern with commercially available products. Some products studied contained no viable organisms. Lack of standardization limits probiotic research and may contribute to inconsistent and discordant results. ***Three probiotic supplements for small animals have been appropriately labeled*** and contained the type and number of organisms claimed: Proviable-DC (nutramaxlabs.com), synbiotic; FortiFlora (purina.com), *Enterococcus faecium SF68;* Prostora (iams.com), *Bifidobacterium animalis.*

Marcella D. Ridgway, VMD, MS, Dip ACVIM
NAVC Clin Brf, Feb 2013

Anemia, using erythropoietin

Recombinant human erythropoietin products are typically given 3 times a week during induction therapy in cats and dogs. Protocols vary, but a starting dose of 100 U/kg per administration is recommended until the PCV reaches the low end of the target range. At the Animal Medical Center, these clinicians recommend a target PCV of 25% in cats and 30% in dogs. A response is usually seen within 3-4 weeks. Once the target range is attained, an average maintenance dose of 50-100 U/kg once or twice weekly is adjusted based on PCV monitoring. Iron therapy during recombinant human erythropoietin therapy is also recommended to ensure adequate functioning of the erythropoiesis-stimulating agent.

Serge Chalhoub, DVM, and Cathy Langston, DVM
Vet Med, 106:5

Novel sampling tool for ringworm

One possibility to consider always for cats with hair loss is dermatophytosis. Ringworm can be itchy, although most cats with pruritic dermatophytosis have some inflammation in the skin in addition to the hair loss. A Wood's lamp can be a very useful screening tool in cats. *Microsporum canis* is the only veterinary dermatophyte that fluoresces, and even then, only about 50%-60% of the time. But a positive Wood's lamp fluorescence allows us to make a rapid diagnosis and start therapy as we wait for the confirmatory fungal culture. The Wood's lamp can guide culture to improve results; one selects the fluorescent hairs for culture. It is important to realize that a negative culture does not rule out a diagnosis of dermatophytosis. As a general principle, negative test results are never as meaningful as positive results. False negative fungal cultures are not rare; this is not a surprise considering the high probability of sampling error. Sampling error can be reduced by using the MacKenzie toothbrush technique. Recently, excellent results were reported using small squares of Swiffer electrostatic cleaning pads (www.Swiffer.com). These are much easier to use than the toothbrush technique.

Valerie A. Fadok, DVM, PhD, Dip ACVD
San Diego Co VMA Conf Procd, 09:12

Budesonide for IBD

Budesonide could be useful for treating various forms of IBD in dogs intolerant of prednisone or dexamethasone. A drug combining potent local activity with minimal systemic effects would be beneficial in these patients. This study evaluated the pharmacokinetics and clinical efficacy of budesonide in 11 client-owned dogs with moderate or moderate-to-severe IBD. Each dog received a controlled-release formulation of budesonide (3 mg/m^2, PO, q24h) for 30 days. Budesonide was rapidly absorbed and metabolized in these dogs. Drug accumulation was gradual and an adequate therapeutic response was noted with no adverse events during the study. The drug has a high first pass metabolism, evading many adverse events associated with other glucocorticoids. It has been used by some veterinary gastroenterologists to treat IBD, particularly if the patient is resistant to glucocorticoid therapy or shows excessive negative steroid effects. Cyclosporine, however, is often the second line of treatment in many refractory cases. At the dose used the drug was effective in most dogs in this study without adverse glucocorticoid events. Should it be tried in patients resistant to dietary change, fenbendazole, and

prednisone? Yes, even though it may not work in all cases . However, cyclosporine may be tried first.

Colin F. Burrows, BVetMed, PhD, Hon FRCVS, Dip ACVIM
NAVC Clin Brf, Mar 2013

Maintaining feeding tubes

Tubes should be flushed well with room temperature water before and after food and medication administration. Depending on the size, tubes generally require between 3 and 10 ml of water to adequately flush them. If a tube does clog, inject a solution of 1/4 teaspoon pancrelipase plus 325 mg of sodium bicarbonate in 5 ml of warm water, let it sit for 5 minutes, and then flush the tube with water. Keeping the tube capped between feedings will also help prevent clog formation.

Valerie J. Parker, DVM and Lisa M. Freeman, DVM
Vet Med, 107:9

Unpublished risk of chloramphenicol

How many working owners can give a drug such as chloramphenicol 4 times a day? Very few, despite their best intentions. The harder you make any therapeutic plan for owners, the less likely they will be to follow it. The author's goal is to do as much in the clinic as possible. For example, the author will give an injection of Convenia if the patient has a susceptible strain. But if forced to prescribe chloramphenicol because of resistant Staphylococcus, there is a need to communicate often with the owner. In addition, the author is seeing ***hindlimb weakness in conjunction with high doses of chloramphenicol*** given for extended periods. This is not discussed in the literature.

John C. Angus, DVM, Dip ACVD
NAVC Clin Brf, 11:1, 2013

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What's allowed during a food trial

The owner must be advised that substitutions, additions, snacks, or treats (except fruits and veggies) are not permitted during the test period. *All flavored vitamin supplements, preventive medication, and fish oil supplements must be stopped or a nonflavored version substituted during the food trial.* All rawhide chew toys, pig ears, cat food, etc., must be placed out of reach. To feed or not to feed snacks or treats during the food trial is always an issue; clear guidelines with options should be provided at the outset and reinforced along the way. Even hypoallergenic commercial treats are not allowed during the test period. Fresh fruit and fresh or steamed vegetables are allowed as a substitute for snacks or treats. Many owners find that ***slices of apple, baby carrots, pieces of baked sweet potato, or even cooked chickpeas*** make wonderful treats for dogs on an elimination diet. Medications can be hidden in a piece of banana or melon or in a bit of the canned hypoallergenic food. Outdoor pets should be confined during the course of the trial to prevent dietary indiscretions. Even the litter box must be made unattainable to the indiscriminate canine palate. The pet should neither gain nor loose weight on the elimination diet.

Patricia White, DVM, MS, Dip ACVD
80th AAHA Conf Procd, 2013

Safety of propofol in cats

As cats are vulnerable to benzyl alcohol toxicity, a study was conducted evaluating the potential toxicity in cats administered a propofol emulsion containing the preservative. The original formulations of propofol lacked preservatives, necessitating disposal within hours, even after a single use. A propofol product that contains 2% benzyl alcohol as a preservative allows for multiple uses for up to 28 days. Concerns regarding this new formulation are based on documented potential adverse effects of benzyl alcohol on feline blood and nervous systems. Based on the results of this study, propofol-containing benzyl alcohol (up to 48 mg/kg over 45-120 min) ***can be used safely*** in clinically healthy cats without the concern of long-term blood or nervous system side effects.

Andrew Claude, DVM, Dip ACVA
NAVC Clin Brf, Feb 2013

Substrates for reptiles

One of the biggest husbandry problems encountered in reptile medicine involves the usage of inappropriate substrates. The following are some of the more commonly encountered issues. While sand may be a natural substrate for many tortoise and lizard species in the wild, the plant material they consume there grows vertically out of the soil and the insects they eat aren't necessarily coated in sand. In captivity, the sand gets on the food and is secondarily consumed in significant amounts leading to problems such as sand colic and in severe instances torsion. Coconut husk expands to seven to eight times its packaged size when removed from the packaging and unfortunately can do the same thing within the gastrointestinal tract of lizards and tortoises. Some of the safest substrates include grass hay, leaf litter and soil mixtures, and cypress mulch. In general, the more natural the substrate reptile owners keep their animals on, the more successful they will be in their care. This also applies when animals try to lay their ova, natural substrates typically lead to fewer egg binding situations versus those animals kept in unnatural conditions.

Chris Tabaka, DVM
Mich Vet Conf Procd, 01:10

Complication of activated charcoal

Some of the most common complications resulting from the administration of activated charcoal are vomiting, hypernatremia, and aspiration pneumonia. The concurrent ***administration of a parenteral antiemetic*** (e.g. maropitant 1 mg/kg, SQ, once a day; ondansetron 0.1-0.3 mg/kg, IV, BID to QID) should be considered

because of the high prevalence of vomiting from the activated charcoal or cathartic administration or from an emetic previously used to decontaminate the patient. This will also allow more rapid return to oral water or prevention of ongoing losses, mitigating potential rare risks for hypernatremia.

Justine A. Lee, DVM and Sherry Welch, DVM
Vet Med, Mar 2013

CRI ketamine for analgesia

Ideal sub-anesthetic ketamine plasma concentrations - eliciting the most benefit with the least adverse effect - has been reported at 2-3 µg/ml, which can be achieved by administering ketamine IV, CRI at 10 µg/kg/min. This can be accomplished by placing 60 mg (0.6 ml of 100 mg/ml stock) ketamine in 1 L of fluids and administered at customary intra-operative rates of 10 ml/kg/hr. Post-operatively, the rate can be reduced to customary maintenance rates of 2 ml/kg/hr, which administers the ketamine CRI at 2 µg/kg/min. A loading dose of 0.25-0.5 mg/kg ketamine IV is recommended prior to the initiation of the CRI in order to rapidly achieve plasma levels.

Mark E. Epstein, DVM, Dip ABVP, CVPP
129th NJ VMA Conf Procd, Mar 2013

Prognostic factors for mammary tumors

The median age of dogs with mammary tumors is 10-11 years. The most widely accepted risk factor for developing mammary carcinoma in the dog is the ***number of estrous cycles in bitches before spaying.*** The risk in neutered bitches for developing mammary tumors is only 12% of the mammary cancer risk for intact bitches. Bitches spayed before the first heat cycle had a relative risk of 0.05% for mammary cancer, while those with one heat cycle had 8%, and those with two or more cycles had 26% relative risk. After 2.5 years of age or four estrous cycles the sparing effect of ovariohysterectomy is lost. Tumor size is of prognostic significance. In a study of 253 dogs with mammary tumors, there was significant difference in survival between groups of dogs when primary tumors were classed as <5 cm, 5-10 cm, 11-15 cm, and >15 cm in diameter. A more recent study confirmed this finding, with tumors of less than 3 cm diameter having significantly better prognosis than tumors greater in size. This size effect was lost if the primary tumor was associated with lymph node metastasis or vessel invasion, however.

Nicole Ehrhart, VMD, MS, Dip ACVS
NAVC Conf, Vol 27, Jan 2013

Eliminating stress in the cat

One of the most critical skills required for becoming cat friendly is to learn to read how cats communicate their emotional state through their body posture, facial expression and movement. Fear is the #1 cause of "bad behavior" in the veterinary environment. By learning to assess emotional states, we can avoid a fully aroused state that takes a cat 30-40 minutes to recover from. Cats leave behind a ***scent from their pads*** that indicate stress. Careful cleaning between appointments is not only important for disinfection but also to remove this form of communication between cats.

Roberta K. Grange, DVM
MO VMA Conf Procd, Jan 2013

Dealing with an aggressive dog

Of course, it's harder to train an adult dog that is aggressive in the examination room, especially a dog that has, for example, been held down for a procedure such as anal sac expression. In these dogs, the behavior problem is likely entrenched, so it may be impractical to take weeks to months to attempt to correct the problem by having the pet visit for treats, especially if there is a medical problem that needs to be addressed. In these cases, drug therapy is probably necessary. This author initially prescribes an oral medication such as trazodone (2-3 mg/kg, q8h), clonidine (0.01-0.05 mg/kg, BID; >6 hours between doses), or alprazolam (0.02-0.1 mg/kg, q6h). Have the owner start at home with a dose at the lower end of the range to see how it affects the dog and to determine the duration to effect. Most pets will respond within 1-2 hours. If necessary, have the owner gradually increase the dose during subsequent trials until the dog is very relaxed yet responsive and able to walk up and down stairs safely. Once the proper dose is determined, ask the owner to administer that dose 1-2 hours before the dog's next clinic appointment. At the clinic, approach the dog slowly, initially avoiding eye contact but giving the dog treats (the treats must be *highly* desirable, such as meat or cheese). Gradually make eye contact while continuing to give the dog treats. If the dog shows signs of aggression, ask the owner to return with the dog after giving it a higher dose of medication. If a dog continues to exhibit fear aggression, an injectable sedative may be necessary.

Wayne L. Hunthausen, DVM
Vet Med, 107:12

Meloxicam in rabbits

Plasma concentrations of meloxicam for rabbits in this study were proportionally higher than those previously reported for rabbits receiving 0.2 mg of meloxicam/kg and were similar to those determined for animals of other species that received clinically effective doses. A dose of 1 mg/kg may be necessary to achieve clinically effective circulating concentrations of meloxicam in rabbits, although further studies are needed.

Daniel V. Fredholm, MS, DVM et al.
Am J Vet Res, Apr 2013

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