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

"Pearls" of Veterinary Medicine

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Feline hyperthyroidism

Many veterinarians mistakenly believe that the finding of a high free T4 in a cat is completely diagnostic for hyperthyroidism. However, since up to 30% of these cats turn out to be euthyroid, it is clear that the free T4 test can ***never*** be considered to be a "gold standard" diagnostic test. Use of free T4 testing can lead to more confusion than clarity in some cats, and can certainly lead to misdiagnosis of hyperthyroidism in euthyroid cats.

Mark Peterson, DVM, Dip ACVIM
2014 Am Ass'n Fel Pract Conf

Anamnestic response to rabies vaccination

Results of the present study indicated that the anamnestic response to rabies booster vaccination in dogs and cats with an out-of-date vaccination status is similar to the response for dogs and cats with a current vaccination status. Thus, the authors believe that post-exposure management of any previously vaccinated dog or cat exposed to a confirmed or suspected rabid animal should be the same, regardless of vaccination status. Specifically, these authors believe that appropriate post-exposure management for dogs and cats with an out-of-date vaccination status ***is immediate booster vaccination*** followed by observation for 45 days, rather than euthanasia or quarantine for 6 months. If additional reassurance is needed, titers could be measured prior to and again 5-7 days after booster vaccination to determine whether an anamnestic response has occurred.

Michael C. Moore, DVM, MPH et al.
JAVMA, Jan 15, 2015

Constipation in the cat

Most recently, this author employs polyethylene glycol (MiraLAX), trickled through an NE tube (6-10 ml/kg/hr). Although it may take up to 12-18 hours, the success rate with this minimally invasive protocol makes it well worth the attempt and the patience. Once the immediate problem has been resolved, follow-up care may include dietary intervention, oral lactulose to effect, and pharmaceutical manipulation. Canned pumpkin is a popular choice for insoluble fiber and it is not unusual for cats to ingest it voluntarily, but it does not actually provide as much fiber content as either of the other 2 choices (Metamucil, 1-4 tsp mixed with food, q12-24h; wheat bran, 1-2 tbsp mixed with food, q12-24h). Royal Canin Fiber Response is a psyllium-enriched dry extruded diet that has shown promise as a dietary therapy for constipation in cats. Pharmacologic intervention is best achieved with Cisapride, 5 mg/cat, PO, q8-12h).

Craig Webb, DVM, PhD, Dip ACVIM
2014 Am Ass'n Fel Pract Conf

Valueable Information Inside

Birth control pills ingestion, a concern?

Birth control pills generally come in 28 tablet packs with 21 hormone tablets (estrogen +/- progesterone) and 7 placebo tablets. Most hormone pills contain 0.035 mg of estrogen or less. In general, estrogen doses of less than 1 mg/kg are not of concern. At higher doses, bone marrow suppression may be seen. However, due to the low estrogen content of the pills, estrogen exposure is generally ***not sufficient to require treatment.*** Some placebos may contain an iron supplement; elemental iron doses >20 mg/kg may require decontamination and other treatments.

Tina Wismer, DVM, Dip ABVT, Dip ABT
98th WI VMA Conf

Administering an IN vaccine by other routes

FICTION: A vaccine intended for IN use can also be administered by the SQ or oral routes. FACT: This MUST NOT be done. Severe post-vaccination complications associated with replication of bacteria and release of toxic proteins that target the liver could cause acute hepatocellular injury and death following a single dose. WARNING: some products licensed for IN administration are packaged as though they are intended for parenteral administration. All personnel authorized to administer vaccine must be trained on proper administration techniques. Administering an IN vaccine orally will render the vaccine ineffective and will not immunize.

Richard B. Ford, DVM, MS, Dip ACVIM, Dip ACVPM (Hon)
2014 Music City Vet Conf

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Another breeder's myth

"Give testosterone to increase the stud's sperm count." A great many veterinarians and dog breeders believe that exogenous administration of testosterone can increase an infertile male's sperm production. Because of negative feedback inhibition of the pituitary/gonadal axis, exogenous administration of testosterone will ***decrease the production of testosterone*** within the testis resulting in testicular degeneration. GnRH can be used short term to increase the production of testosterone within the testicles. This can increase libido on a short-term basis, and possibly increase sperm concentration within an ejaculate.

Kit Kampschmidt, DVM
SW Vet Sym, 09:13

Ingestion of topical analgesics

Compounded topical analgesic creams (or ointments) are increasingly being used for pain control in humans. These products may contain a variety of pain medications and anti-inflammatory agents. Potent NSAIDs such as diclofenac and flurbiprofen are common ingredients in compounded topical analgesic creams. This author alerts practitioners to the dangers of pets ingesting minute quantities of these creams by licking treated areas of skin. Although there is no published information on toxicity of flurbiprofen in cats, dosages of 0.018-0.09 mg/lb/d for 5 days will cause GI tract ulcers in dogs. Doses >0.9 mg/lb can cause renal failure in dogs, and doses >2.3 mg/lb can cause seizures. Flurbiprofen, like all NSAIDs, can cause vomiting, diarrhea, bloody diarrhea, GI ulcers and perforation, anemia, acute renal failure, seizures, and death. Cats in one report were exposed by licking the owner, rubbing against or lying on the owner, or licking their fur after the owner stroked the cat after applying the product. Most of the owners were not aware of the dangers the product could present to pets. Many owners do not think of these topical products as medications. Whenever an animal develops clinical signs associated with NSAID toxicosis and the client does not know of any exposure, the veterinarian should ***ask whether any topical creams are being used*** by the client or family members. Clients should be warned of the dangers of pets, especially cats, licking or lying on uncovered treated skin.

Charlotte Means, DVM, MLIS
JAVMA, Jan 15, 2015

Diuretics in heart failure

Owing to concerns about azotemia, and in response to certain studies in people with CHF which document adverse outcomes when high doses of diuretics are employed, the author currently recommends use of the ***"lowest possible dose of furosemide"*** in animals with CHF. This often means a degree of experimentation must be performed to best evaluate an individual animal's needs. Giving an owner upper and lower limits for acceptable furosemide dose, and carefully explaining to them that they should "give more for difficulty breathing or rapid respirations, and give less if the animal seems weak, lethargic, anorexic, or depressed" has worked successfully for the author. In most instances, canine patients are given less than 2 mg/kg, q12h, and in most cats the author initially tries to use 6.25 mg/cat/day for chronic therapy. Some cats require higher doses of furosemide (especially those with pleural effusion), but some can be treated with 6.25 mg/cat every other day. When a dose of 2.2 mg/kg twice a day is exceeded during chronic therapy, the author usually thinks that diuretic resistance has been reached and considers the addition of a diuretic that acts at a different site on the nephron.

John E. Rush, DVM, MS, Dip ACVIM, Dip ACVECC
19th Int VECCS

Word make-overs

"Recommend." Telling a client, "I'd recommend that you get your pet's teeth cleaned within the next year" is wishy-washy. "Recommend" sounds optional and has no medical urgency. Instead, emphasize **"Needs."** Be firm and confident when presenting the diagnosis. Replace "recommend" with "needs" to communicate the medical urgency and importance of treatment. The veterinarian would tell the client, "Buttons has grade 3 dental disease. She needs dental treatment now to slow the progression of her dental disease and treat her oral infection. As her dental disease gets worse, serious health problems can happen. It's common for pets to get painful abscesses or a toothache and causes them to eat less or not at all. Bacteria in the mouth can pass through the bloodstream and permanently damage the kidneys, heart, liver, and lungs. I will have my technician explain Button's dental procedure and also talk to you about easy home-care products that will fit into your schedule."

Wendy S. Myers
Vet Pract News, 25:11

Carbs and the cat

Do dry diets that are high in carbs cause obesity? Yes and no. The basic understanding of why cats (as well as all animals) gain excess weight is that there is an energy imbalance: kcal in > kcal out: In other words, cats eat more food than is required for energy expenditure. Most indoor cats are sedentary and do not burn energy through exercise. Many dry feline diets are high in energy and contain 400-500 kcal/cup (a few are over 600 kcal/cup). An average indoor cat requires 175-200 kcal/day. It is difficult for owners to measure the proper daily food "dose," which may be as low as 1/3-1/2 cup/day. Many household cups and scoops, and even the cups provided by pet food companies, are not exact and so it's easy to "round up" and feed extra kibbles per day. Over time, this leads to excessive energy intake. At the same time, cats often act hungry and beg for food, even if being fed the proper energy level to match expenditure. Owners may leave

food available all the time (free-choice feeding) which encourages overeating. This is partially a result of spaying and neutering, as estrogen has been shown to have an appetite inhibitory effect. So dry diets by themselves do not cause obesity but it's very easy for dry feeding to lead to inappropriate feeding amounts and excessive energy intake.

Craig Datz, DVM, MS, Dip ABVP, Dip ACVN
SW Vet For, Sep 2014

Treating constipation in the cat

Colonic prokinetic agents are a relatively new class of drug, which have the ability to stimulate motility from the esophagus aborally. Older motility agents have been unsuccessful, either because of significant side-effects (bethanechol) or the inability to enhance motility in the distal GI tract (metoclopramide, domperidone). Cisapride has been shown, anecdotally, to be beneficial in cases of mild to moderate constipation. Cats with longstanding obstipation or megacolon are not likely to be helped much by cisapride. Published dose recommendations are 2.5 mg, PO, q8-12h; this author routinely uses 5 mg/cat, PO, q8-12h without noted side-effects. Cisapride has been withdrawn from the pharmaceutics market because of cardiac toxicity in a small, select group of human patients. Veterinarians may request cisapride from compounding pharmacists. One author has shown that nizatidine and ranitidine, stimulate colonic smooth muscle, in vitro. They appear to work by inhibition of acetylcholinesterase. Suggested doses to be given in conjunction with cisapride are ranitidine (Zantac, 1-2 mg/kg, PO, q12h) or nizatidine (Axid, 2.5-5.0 mg/kg, PO, q12h). Other H2 receptor antagonists, cimetidine and famotidine are not effective. Two new drugs, prucalopride and tegaserod are new prokinetic agents that have been shown to be effective in feline colonic motility. The therapeutically effective dose for tegaserod in cats is 0.1-0.3, mg/kg, PO, BID. Erythromycin and motilin, effective in canine intestinal motility, are not effective in the feline colon.

Margie Scherk DVM, Dip ABVP
18th NC Vet Conf

Dermal toxicosis

For dermal exposures, animals should be bathed in liquid dish soap such as Dawn or Palmolive and rinsed copiously with warm water. For sticky substances, trim the fur to remove as much of the substance as possible. Then work a small amount of vegetable oil, mineral oil, mayonnaise, or peanut butter through the rest of the substance until it breaks down into "gummy balls." Afterwards, wash with liquid dishwashing detergent as described above. Use of aprons, gloves and goggles by the veterinary staff during dermal decontamination will minimize human exposure to the toxicant. For those animals that may have gotten on the ***wrong end of a skunk,*** a useful "deodorant" recipe is as follows: Mix 1 qt of 3% hydrogen peroxide, 1/4 cup baking soda, and 1 teaspoon of liquid dish soap. Bathe animal in mixture and rinse thoroughly. Caution: The mixture may bleach clothes, towels, or carpet and may cause "bronzing" of black hair coats of animals. This mixture is also flammable.

Sharon Gwaltney-Brant, DVM, PhD,
Dip ABVT, Dip ABT
N Amer Vet Conf, 01:14

Split-dose heartworm treatment

With 2 doses of melarsomine, the efficacy is over 90% with the useful flexibility of a 50% worm kill with 1 dose. This then allows "split-dose" protocol to be utilized in severely afflicted individuals or in those in which pulmonary thromboembolism is a concern. This method results in destruction of only one-half the worms initially (1 IM injection of 2.5 mg/kg), thereby lessening the chance for embolic complications. This single dosage is followed by a 2 dose regimen in 1-3 months, if clinical conditions permit. While the manufacturer recommends this protocol for severely affected dogs, the author employs it in **all cases** unless there is financial constraint or underlying concern for arsenical toxicity (for example, preexistent severe renal or hepatic disease). One disadvantage to the "split-dose" method, in addition to the expense, is the need for 2 months exercise restriction.

Clarke Atkins, DVM, Dip ACVIM
18th NC Vet Conf

Website on anesthesia and analgesia

An ultimate website on anesthesia and analgesia is www.VASG.org – and it's free. The website has multiple CRI calculations. Readers are welcome to email Dr. Stein at drstein@vasg.org to inquire about protocols that are not included.

Phil Zeltzman, DVM, Dip ACVS, CVJ
Vet Pract News, 26:11

Treating the unresponsive CHF patient

A number of therapeutic strategies may benefit unresponsive fluid accumulation in chronic heart failure. Ensure the client is administering the medication and the prescription is accurate. Optimize furosemide/ACE inhibitor/ pimobendan therapy, and prescribe digoxin if it has not yet been given. Increase the furosemide dosage to 4 or 6 mg/kg, PO, TID; increase (off label) the pimobendan dosage to 0.25 to 0.3 mg/kg, TID. Ensure there has been some attempt at dietary sodium restriction. Optimize spironolactone (twice daily at about 0.5-2 mg/kg/day). If these measures fail, consider prescribing hydrochlorothiazide, but remember that sequential nephron blockade can induce volume depletion and renal failure, so start with a 3 times a week approach and check renal function and electrolytes after 2-4 doses have been given. ***An alternative (safer) approach*** is to administer oral furosemide and spironolactone, but to enhance the furosemide effect by intermittent dosing of furosemide subcutaneously. While this can be done through repeated hospital visits, preloaded syringes sent home with clients following instruction on proper injection technique works well. Initially substitute one of the oral doses of furosemide with the same injectable dosage three times weekly

(e.g., Monday, Wednesday, and Friday).

Bruce W. Keene, DVM, MSc, Dip ACVIM
N Amer Vet Conf, 01:14

Dry eye

Stimulation of normal tear production remains the main goal of medical therapy. Tear replacement products are no substitute for improved production of normal tears with their multitude of immunologic and nutritive factors, and appropriate pH and osmolarity. Cyclosporine (CsA) remains the most effective drug for this purpose. In addition to its ability to reduce immune-mediated infiltration of the lacrimal gland, this compound has a direct lacrimogenic function, and it promotes mucin production from conjunctival goblet cells. Its direct lacrimogenic function appears to rely on frequent application, while immunosuppression and remodeling of glandular tissue presumably require more chronic use. Therefore, in most cases this drug should be instituted twice daily and the patient rechecked in approximately 2 weeks. It is important that the client be instructed to apply CsA as scheduled ***right up until the time of recheck examination.*** Omitting the morning treatment because the dog was going to be examined later that day may cause an artificial depression in STT values. Clients should also be advised that initial response to therapy is best judged by change in STT values, mucoid discharge, and ocular comfort, rather than decrease in pigmentation or corneal vascularization. Improvement in these corneal changes occurs at a similar rate to that which they occurred – slowly. Tapering or increasing of dose frequency or product concentration can be performed based on clinical and measured (STT) responses.

David J. Maggs BVSc (hons), Dip ACVO
18th NC Vet Conf

Effect of stress to the hospital

This study demonstrated that there was a significant increase in pulse rate, systolic arterial blood pressure, panting, and rectal temperature for healthy dogs examined in a home setting versus a veterinary hospital. Although mean differences in physiologic variables were not clinically relevant for some measured variables, the observed increases may be significant in individual animals. In general, when canine patients have abnormalities in rectal temperature, pulse rate, respiration, and systolic arterial blood pressure, ***stress from transportation and environmental change should be considered*** as differential diagnoses, and the variables in question should be rechecked before a diagnosis of medical illness is reached or further workup is pursued.

Ryan F. Bragg, DVM, MS et al.
JAVMA, Jan 15, 2015

Effects of early age neutering

Results of following 1842 dogs that underwent pediatric gonadectomy and were adopted from a shelter before one year of age and for up to 11 years. Results revealed a decrease in obesity for male and female dogs that had early-age gonadectomy. Initial concerns that pediatric neutering may result in stunted growth have proved to be false in dogs. The age at the time of neutering appears to have no significant influence on the incidence of perivulvar dermatitis. This condition is related to a recessed vulva and is made worse by obesity. The incidence of puppy vaginitis is the same regardless of the age of the dog at the time of ovario-hysterectomy. The suspicion that pediatric castration would decrease the diameter of the penile urethra in cats and, thus, lead to urinary obstruction has proved to be unfounded. The diameter of the penile urethra in an adult male cat does not vary between animals neutered at 7 weeks or at 7 months of age or from intact males.

Philip A. Bushby, DVM, Dip and Brenda Griffin, DVM
Vet Med, Oct 2014

Conservative urethral obstruction relief

Report of management of blocked toms owned by those that could not afford catheterization has been made. This alternative should not be offered as a primary management technique at this time. It should only be considered if the owner has refused classical relief of obstruction by catheterization. The clinician should make note of the refusal in the medical record and have the owner sign the statement. In the study, acepromazine (0.25 mg, IM, or 2.5 mg, PO, q8h), buprenorphine (0.075 mg, PO, q8h), and medetomidine (0.1 mg, IM, q24h) were administered and decompressive cystocentesis and SQ administration of fluids were administered as needed. Stress was minimized by placing the cats in a quiet, dark environment. Treatment was considered successful in 11 of the 15 cats with uroabdomen (n=3) or hemoabdomen (n =1) occurring in the others.

Michael R. Lappin, DVM, PhD, Dip ACVIM
74th Co St U Vet Conf

Determining length of food trial

The length of an elimination dietary trial is variable and controversial and ranges from 3-12 weeks or longer. Most dermatologists recommend that the single protein limited ingredient diet be fed ***for at least 8 weeks*** before a decision is made regarding efficacy. A beneficial response is usually manifested by a decrease in pruritus and cutaneous inflammation. If no response is seen in 8 weeks, then it is unlikely that food is playing a major role in the patient's dermatitis and the diet is discontinued. However, if even a partial response is noted then the diet should be continued for an additional 4 weeks since some cats and dogs may take 10 weeks or more for a maximum beneficial response. Even a 30%-40% improvement is enough to warrant continuation of the diet indefinitely as the patient may have concurrent cutaneous adverse reaction to food, atopic dermatitis, and/or flea allergy dermatitis.

Kenneth W. Kwochka, DVM, Dip ACVD
2014 Music City Vet Conf